



Application for a State Waste Discharge Permit to Discharge Industrial Wastewater to a Publicly-Owned Treatment Works (POTW)

This application is for a state waste discharge permit for a discharge of industrial wastewater to a publicly-owned treatment works (POTW) as required by Chapter 90.48 RCW and Chapter 173-216 WAC. It is designed to provide Ecology with information on pollutants in the waste stream, materials that may enter the waste stream, and the flow characteristics of the discharge.

Ecology may request additional information to clarify the conditions of this discharge. The applicant should reference information previously submitted to Ecology that applies to this application in the appropriate section.

SECTION A. GENERAL INFORMATION

1. Applicant Name: Naval Undersea Warfare Center Division, Keyport

2. Facility Name: _____
(if different from Applicant)

3. Applicant Mail Address: 610 Dowell Street, Building 206
Street

Keyport, Washington 98345
City/State Zip

4. Facility Location Address: 610 Dowell Street, Building 825
(if different from 3 above) Street

Keyport, Washington 98345
City/State Zip

5. UBI No. _____
Sometimes called a registration, tax, "C," or resale number, the Unified Business Identifier (UBI) number is a nine-digit number used to identify persons engaging in business activities. The number is assigned when a person completes a [Master Business Application](#) to register with or obtain a license from state agencies. The Departments of Revenue, Licensing, Employment Security, Labor and Industries, and the Corporations Division of the Secretary of State are among the state agencies participating in the UBI program.

6. Latitude/longitude of the facility as decimal degrees (NAD83/WGS84):
47.701 N / 122.614 W

FOR OFFICE USE ONLY		Check One:	
		New/Renewal <input type="checkbox"/>	Modification <input type="checkbox"/>
Date Application Received _____	Date Fee Paid _____	Application/ Permit No. _____	Date Application Accepted _____

7. Person to contact who is familiar with the information contained in this application:

Kenneth Eiford
Name

Environmental Engineer
Title

360-315-8571
Telephone number

N/A
Fax number

8. Check One:

Permit Renewal (including renewal of temporary permits)

Does this application request a greater amount of wastewater discharge, a greater amount of pollutant discharge, or a discharge of different pollutants than specified in the last permit application for this facility? YES NO

For permit renewals, the current permit is an attachment, by reference, to this application.

Permit Modification

Existing Unpermitted Discharge

Proposed Discharge

Anticipated date of discharge: _____

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and/or imprisonment for knowing violations.

Signature*

Date

Commanding Officer
Title

C. P. Hoskins
Printed Name

*Applications must be signed as follows: corporations, by a principal executive officer of at least the level of vice-president; partnership, by a general partner; sole proprietorship, by the proprietor. If these titles do not apply to your organization, the person who makes budget decisions for this facility must sign the application.

The application signatory may delegate signature authority for submittals required by the permit, such as monthly reports, to a suitable employee. You can delegate this authority to a qualified individual or to a position, which you expect to fill with a qualified individual. If you wish to delegate signature authority, please complete the following:

Signature of delegated employee

Date

Environ. Compliance Branch Head
Title or function at the facility

Terrance D. Hiatt

Printed name

SECTION B. PRODUCT INFORMATION

1. Briefly describe all manufacturing processes and products, and/or commercial activities, at this facility. Provide the applicable Standard Industrial Category (SIC) and the North American Industry Classification System (NAICS) Code(s) for each activity (see *North American Industrial Classification System*, 2007 ed.). You can find the 1997 NAICS codes and the corresponding 1987 Standard Industry Category (SIC) codes at (<http://www.census.gov/epcd/naics/frames3.htm>).

Description: See Attachment B.1

2. List raw materials and products used at his facility:

Type	RAW MATERIALS	Quantity
<i>Grapes (Example)</i>		<i>1,000 tons per year</i>
None		
Type	PRODUCTS	Quantity
<i>Grape Juice(Example)</i>		<i>300,000 gallons per year</i>
See Attachment B.2		

SECTION C. PLANT OPERATIONAL CHARACTERISTICS

1. For each process listed in B.1. that generates wastewater, list the process, assign the waste stream a name and an ID # and describe whether it is a batch or continuous flow.

Process	Waste Stream Name	Waste Stream ID#	Batch (B) or Continuous (C) Process
See Attachment C. 1			

2. On a separate sheet, produce a schematic drawing showing production processes, water flow through the facility, wastewater treatment devices and waste streams as named above. The drawing should indicate the source of intake water and show the operations contributing wastewater to the effluent. The treatment units should be labeled. Construct a water balance by showing average flows between intakes, operations, treatment units, and points of discharge to the POTW. (See the example on page 16 of this application form.) See Attachment C.2

3. What is the maximum daily wastewater discharge flow? 49,999 gallons/day
49,999 gallons/day is the maximum combined industrial wastewater daily flow, which includes the Industrial Wastewater Treatment Plant (IWTP) at Sample Point (SP)001 and Otto Fuel Reclamation System (OFRS) at SP003.

What is the maximum average monthly wastewater discharge flow (daily flows averaged over a month)? N/A gallons/day

Per WA State Dept. of Ecology guidance, average daily wastewater flows for the IWTP at SP001 and OFRS at SP003 are not included here since they are batch discharges and are typically only discharged every few months. Typical volume and frequency for SP001 and SP003 batch discharges are listed in Attachments C.1 and C.2. However, total wastewater flow is measured at SP002 and represents the total combined industrial and domestic wastewater that flows from NUWC Keyport sewer to Kitsap County sewer system. 78,989 gallons/day is the maximum average monthly wastewater discharge flow from SP002.

4. Describe any planned wastewater treatment improvements or changes in wastewater disposal methods, and the schedule for these improvements. (Use additional sheets, if necessary and label as attachment C4.)

The new Otto Fuel Reclamation System (OFRS) and associated discharge is expected to commence late summer 2023. This process and discharge is already approved on our current permit. However, we have not yet started utilizing the system since it is still under construction. Waste that should be treated with the OFRS and discharged to sewer is currently disposed off site via our permitted Treatment, Storage, and Disposal Facility (TSDF) ever since the old OFRS was taken offline.

5. If production processes are subject to seasonal variations, provide the following information. The combined value for each month should equal the estimated total monthly flow. Please indicate the proper flow unit by checking one of the following boxes:

gallons per day

gallons per month

million gallons per month

Waste Stream ID#	MONTHS											
	J	F	M	A	M	J	J	A	S	O	N	D
Estimated Total Monthly Flow (GPD)												

6. How many hours a day does this facility typically operate? 10

How many days a week does this facility typically operate? 5

How many weeks per year does this facility typically operate? 52

7. List all incidental materials, such as oil, paint, grease, solvents, and cleaners, that are used or stored on site (*list only those with quantities greater than 10 gallons for liquids and 50 pounds for solids*). For solvents and solvent-based cleaners, include a copy of the material safety data sheet and estimate the quantity used. (*Use additional sheets, if necessary, and label as attachment C.7.*)

Materials/Quantity Stored: See Attachment C.7

- | 8. | Some types of facilities are required to have spill or waste control plans. Does this facility have: | Yes | No |
|----|---|-------------------------------------|-------------------------------------|
| a. | A spill prevention, control, and countermeasure plan (40 CFR 112)? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. | An Oil Spill Contingency Plan (chapter 173-182 WAC)? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c. | An emergency response plan (per WAC 173-303-350)? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d. | A runoff, spillage, or leak control plan (per WAC 173-216-110(f))? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e. | Any spill or pollution prevention plan required by local, state or federal authorities? If yes specify: <u>Pollution Prevention plan per 40 CFR 264.73 and 264.75</u> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| f. | A solid waste control plan? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| g. | A Slug Discharge Control Plan (40 CFR 403.8(f)(2)(v))? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

SECTION D. WATER CONSUMPTION AND WATER LOSS

1. Potable water source(s):

Public System (Specify) Kitsap Public Utilities District

Private Well Surface Water

a. Water Right Permit Number: 90520E

b. Legal Description of Water Source

38550/Keyport Water-West Intertie, WRIA: Kitsap, Township 25, Range 01E, Section 02, Qtr/Qtr Section NWNE

2. Potable water use

a. Indicate total water use_____

Gallons per day (average) 67,394 - Water usage information is for entire base usage

Gallons per day (maximum) Information not available

b. Is water metered?

YES NO

SECTION E. WASTEWATER INFORMATION

1. How are the water intake and effluent flows measured?

Intake: Tank Level Indicators

Effluent Metered at the IWTP Outfall

2. Describe the collection method for the samples analyzed below. (*i.e.*, grab, 24-hour composite). Applicants must collect grab samples (not composites) for analysis of pH, temperature, cyanide, total phenols, residual chlorine, oil and grease, fecal coliform (including *E. coli*), and Enterococci (previously known as fecal streptococcus at § 122.26 (d)(2)(iii)(A)(3)), or volatile organics.

A grab sample is drawn from IWTP prior to discharge for Sample Point (SP) 001. Oil and grease grab samples at SP 002 are drawn at Bldg. 94 manhole, while Total Suspended Solids and Ammonia (monthly) and metals (quarterly) are drawn via 24-hour composite sample. Propylene Glycol Dinitrate (PGDN) grab samples will be taken prior to discharge at SP 003.

3. Has the effluent been analyzed for any other parameters than those identified in question E.4.? YES NO
If yes, attach results and label as attachment E.4. This data must clearly show the date, method and location of sampling. (*Note: Ecology may require additional testing.*)
4. Provide measurements or range of measurements for treated wastewater prior to discharge to the POTW for the parameters with an “X” in the left column. If you obtain the application from the internet, contact Ecology’s regional office to see if testing for a subset of these parameters is permissible. All analyses (except pH) must be conducted by a laboratory registered or accredited by Ecology (WAC 173-216-125). If this is an application for permit renewal, provide data for the last year for those parameters that are routinely measured. For parameters measured only for this application, place the values under “Maximum.” Report the values with units as specified in the parameter name or in the detection level.

The Permittee must use the specified analytical methods, detection limits (DLs) and quantitation levels (QLs) in the following table unless Ecology approves an alternate method **or the method used produces measurable results in the sample and EPA has listed it as an EPA approved method in 40 CFR Part 136. If the Permittee uses an alternative method as allowed above, it must report the test method, DL, and QL on the discharge monitoring report or in the required report.**

X	Parameter	Measurement Values			Number of Analyses	Analytical Method Std. Methods 19 th ,20 th edition or EPA	Detection Limit/Quantitation Level
		Minimum	Maximum	Average			
	BOD (5 day)					SM 5210 B	/2 mg/l
	COD					SM 5220 D	/10 mg/l
X	Total suspended solids	77 mg/L	226 mg/L	148 mg/L	12	SM 2540 D	/5 mg/l
	Fixed Dissolved Solids					SM 2540 E	
	Total dissolved solids					SM 2540 C	
	Conductivity (micromhos/cm)					SM 2510 B	
X	Ammonia-N as N	15 mg/L	49 mg/L	32 mg/L	12	SM 4500-NH ₃ C	/0.3 mg/L
	pH					SM 4500-H	0.1 standard units
	Fecal coliform (organisms/100 mL)					SM 9221 E or 9222 D	
	Total coliform (organisms/100 mL)					SM 9221 B or 9222 B	
	Dissolved oxygen					SM 4500-O C/G	
	Nitrate + nitrite-N as N					SM 4500-NO ₃ E	100 µg/L
	Total kjeldahl N as N					SM 4500-N _{org} C/E/FG	300 µg/l
	Ortho-phosphate-P as P					SM 4500-P E/F	10 µg/l
	Total-phosphorous-P as P					SM 4500-P E/P/F	10 µg/l
X	Total Oil & grease	2 mg/L	14 mg/L	7.3 mg/L	12	EPA 1664A	1.4/5 mg/l
	NWTPH - Dx					Ecology NWTPH Dx	250/250 µg/l
	NWTPH - Gx					Ecology NWTPH Gx	250/250 µg/l
	Calcium					EPA 200.7	10 µg/l
	Chloride					SM 4500-Cl C	0.15 µg/l
	Fluoride					SM 4500-F E	.025/0.1 mg/l
	Magnesium					EPA 200.7	10/50 µg/l
	Potassium					EPA 200.7	700/ µg/l
	Sodium					EPA 200.7	29/ µg/l

X	Parameter	Measurement Values			Number of Analyses	Analytical Method Std. Methods 19 th ,20 th edition or EPA	Detection Limit/Quantitation Level
		Minimum	Maximum	Average			
	Sulfate					SM 4500-SO ₄ C/D	/200 µg/l
	Arsenic(total)					EPA 200.8	0.1/0.5 µg/l
	Barium (total)					EPA 200.8	0.5/2 µg/l
	Cadmium (total)					EPA 200.8	.05/.25 µg/l
X	Chromium (total)	<0.1 mg/L	<0.1 mg/L	<0.1 mg/L	4	EPA 200.8	0.2/1 µg/l
X	Copper (total)	<0.1 mg/L	<0.1 mg/L	<0.1 mg/L	4	EPA 200.8	0.4/2 µg/l
X	Lead (total)	<0.1 mg/L	<0.1 mg/L	<0.1 mg/L	4	EPA 200.8	0.1/.5 µg/l
X	Mercury (total) pg/L	<200,000pg/ L	<200,000pg/ L	<200,000pg/L	4	EPA 1631E	0.2/0.5 pg/l
	Molybdenum(total)					EPA 200.8	0.1/0.5 µg/l
	Nickel(total)					EPA 200.8	0.1/0.5 µg/l
	Selenium (total)					EPA 200.8	1/1 µg/l
	Silver (total)					EPA 200.8	.04/.2 µg/l
X	Zinc (total)	0.11 mg/L	0.27 mg/L	0.18 mg/L	4	EPA 200.8	0.5/2.5 µg/l

6. Does this facility use any of the following chemicals as raw materials or produce them as part of the manufacturing process, or are they present in the wastewater? YES NO

(The number in the column next to the chemical name is the Chemical Abstract Service (CAS) reference number to aid in identifying the compound.)

If yes, specify how the chemical is used and the quantity used or produced: See Attachment E.6

METALS, CYANIDE & TOTAL PHENOLS			
Antimony, Total	7440-36-0	Nickel, Total	7440-02-0
Arsenic, Total	7440-38-2	Selenium, Total	7782-49-2
Beryllium, Total	7440-41-7	Silver, Total	7440-22-4
Cadmium, Total	7440-43-9	Thallium, Total	7440-28-0
Chromium (hex) dissolved	18540-29-9	Zinc, Total	7440-66-6
Chromium, Total	7440-47-3		
Copper, Total	7440-50-8	Cyanide, Total	57-12-5
Lead, Total	7439-92-1	Cyanide, Weak Acid Dissociable	
Mercury, Total	7439-97-6)	Phenols, Total	

PESTICIDES			
Aldrin	309-00-2	Endrin	72-20-8
alpha-BHC	319-84-6	Endrin Aldehyde	7421-93-4
beta-BHC	319-85-7	Heptachlor	76-44-8
gamma-BHC	58-89-9	Heptachlor Epoxide	1024-57-3
delta-BHC	319-86-8	PCB-1242	53469-21-9
Chlordane	57-74-9	PCB-1254	11097-69-1
4,4'-DDT	50-29-3	PCB-1221	11104-28-2
4,4'-DDE	72-55-9	PCB-1232	11141-16-5
4,4' DDD	72-54-8	PCB-1248	12672-29-6
Dieldrin	60-57-1	PCB-1260	11096-82-5
alpha-Endosulfan	959-98-8	PCB-1016	12674-11-2
beta-Endosulfan	33213-65-9	Toxaphene	8001-35-2
Endosulfan Sulfate	1031-07-8		

VOLATILE COMPOUNDS			
Acrolein	107-02-8		
Acrylonitrile	107-13-1	1,1-Dichloroethylene	75-35-4
Benzene	71-43-2	1,2-Dichloropropane	78-87-5
Bromoform	75-25-2	1,3-dichloropropene (mixed isomers) (1,2-dichloropropylene)	542-75-6
Carbon tetrachloride	56-23-5	Ethylbenzene	100-41-4
Chlorobenzene	108-90-7	Methyl bromide (Bromomethane)	74-83-9
Chloroethane	75-00-3	Methyl chloride (Chloromethane)	74-87-3
2-Chloroethylvinyl Ether	110-75-8	Methylene chloride)	75-09-2
Chloroform	67-66-3	1,1,2,2-Tetrachloroethane	79-34-5
Dibromochloromethane	124-48-1	Tetrachloroethylene	127-18-4
1,2-Dichlorobenzene	95-50-1	Toluene (108-88-3)	
1,3-Dichlorobenzene	(541-73-1)	1,2-Trans-Dichloroethylene (Ethylene dichloride)	156-60-5
1,4-Dichlorobenzene	106-46-7	1,1,1-Trichloroethane	71-55-6
Dichlorobromomethane	75-27-4	1,1,2-Trichloroethane	79-00-5
1,1-Dichloroethane	75-34-3	Trichloroethylene	79-01-6
1,2-Dichloroethane	107-06-2	Vinyl chloride	75-01-4

ACID COMPOUNDS			
2-Chlorophenol	95-57-8	4-nitrophenol	100-02-7
2,4-Dichlorophenol	120-83-2	Parachlorometa cresol (4-chloro-3-methylphenol)	59-50-7
2,4-Dimethylphenol	105-67-9	Pentachlorophenol	87-86-5
4,6-dinitro-o-cresol (2-methyl-4,6,-dinitrophenol)	534-52-1	Phenol	108-95-2
2,4 dinitrophenol	51-28-5	2,4,6-Trichlorophenol	88-06-2
2-Nitrophenol	88-75-5		

BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
Acenaphthene	83-32-9	3,3-Dichlorobenzidine	91-94-1
Acenaphthylene	208-96-8	Diethyl phthalate	84-66-2
Anthracene	120-12-7	Dimethyl phthalate	131-11-3
Benzidine	92-87-5	Di-n-butyl phthalate)	84-74-2
Benzyl butyl phthalate	85-68-7	2,4-dinitrotoluene	121-14-2
Benzo(a)anthracene	56-55-3	2,6-dinitrotoluene	606-20-2
Benzo(b)fluoranthene (3,4-benzofluoranthene)	205-99-2	Di-n-octyl phthalate	117-84-0
Benzo(j)fluoranthene	205-82-3	1,2-Diphenylhydrazine (as <i>Azobenzene</i>)	122-66-7
Benzo(k)fluoranthene (11,12-benzofluoranthene)	207-08-9	Fluoranthene	206-44-0
Benzo(r,s,t)pentaphene	189-55-9	Fluorene	86-73-7
Benzo(a)pyrene	50-32-8	Hexachlorobenzene	118-74-1
Benzo(ghi)Perylene	191-24-2	Hexachlorobutadiene	87-68-3
Bis(2-chloroethoxy)methane	111-91-1	Hexachlorocyclopentadiene	77-47-4
Bis(2-chloroethyl)ether	111-44-4	Hexachloroethane	67-72-1
Bis(2-chloroisopropyl)ether	39638-32-9	Indeno(1,2,3-cd)Pyrene	193-39-5
Bis(2-ethylhexyl)phthalate	117-81-7	Isophorone	78-59-1
4-Bromophenyl phenyl ether	101-55-3	3-Methyl cholanthrene	56-49-5
2-Chloronaphthalene	91-58-7	Naphthalene	91-20-3
4-Chlorophenyl phenyl ether	7005-72-3	Nitrobenzene	98-95-3
Chrysene	218-01-9	N-Nitrosodimethylamine	62-75-9
Dibenzo (a,j)acridine	224-42-0	N-Nitrosodi-n-propylamine	621-64-7
Dibenzo (a,h)acridine	226-36-8	N-Nitrosodiphenylamine	86-30-6
Dibenzo(a-h)anthracene (1,2,5,6-dibenzanthracene)	53-70-3	Perylene	198-55-0
Dibenzo(a,e)pyrene	192-65-4	Phenanthrene	85-01-8
Dibenzo(a,h)pyrene	189-64-0	Pyrene	129-00-0
		1,2,4-Trichlorobenzene	120-82-1

7. Are any other pesticides, herbicides or fungicides used at this facility? YES NO

If yes, specify the material and quantity used:

PT Wasp Freeze II (Prallethrin) - 17 fluid oz. annually, Range Pro (Glyphosate) - 186 fluid oz. annually, Tempo 1% Dust (Cyfluthrin) - 4 fluid oz. annually

8. Are there other pollutants that you know of or believe to be present? YES NO

If yes, specify the pollutants and their concentration if known
(attach laboratory analyses if available as Attachment E8):

9. Is the wastewater being discharged, or proposed for discharge, to the POTW designated as a dangerous waste according to the procedures in Chapter 173-303 WAC?

YES NO DON'T KNOW

10. If the answer to question 9 above is yes, how did the waste designate as a dangerous waste (check appropriate box)?

For Listed and TCLP Characteristic Wastes only, also provide the Dangerous Waste Number(s).

Listed Waste Dangerous Waste Number(s) _____

Characteristic Wastes Dangerous Waste Number(s) _____

Ignitable

Reactive

Corrosive

TCLP

State Only Dangerous Wastes Dangerous Waste Number(s) _____

Toxicity

Persistent

For questions about waste designation under the *Dangerous Waste Regulations*, Chapter 173-303 WAC, contact Ecology's Hazardous Waste and Toxics Program at:

Northwest Regional Office - Bellevue	(425) 649-7000
Southwest Regional Office - Lacey	(360) 407-6300
Central Regional Office - Yakima	(509) 575-2490
Eastern Regional Office - Spokane	(509) 329-3400

SECTION F. SEWER INFORMATION

1. Is an inspection and sampling manhole or similar structure available on-site? YES NO
*If yes, attach a map or hand drawing of the facility that shows the location of these structures
(Label as attachment F1 or this may be combined with map in H8, if H8 is applicable to your
facility.)*

See Attachment F.1

SECTION G. OTHER PERMITS

1. List all environmental control permits or approvals needed for this facility; for example, air emission permits.

PSCAA Air Permit

EPA Multi-Sector General Permit for Industrial Activities Municipal

Separate Storm Sewer System (MS4) Permit Permit For The Storage And

Treatment Of Dangerous Waste

SECTION H. STORMWATER

1. Do you have coverage under the Washington State Industrial Stormwater NPDES General Permit? YES NO

If yes, please list the permit number here. WAR-05F003

If no, have you applied for a Washington State Stormwater Industrial Stormwater General Permit? YES NO

If you answered no to both questions above, complete the following questions 2 through 5.

2. Does your facility discharge stormwater: *(Check all that apply)*

To storm sewer system *(provide name of storm sewer system operator: _____)*

Directly to any surface waters of Washington State *(e.g., river, lake, creek, estuary, ocean).*

Specify waterbody name(s) _____

Indirectly to surface waters of Washington State *(i.e., flows over adjacent properties first).*

To a Sanitary Sewer

Directly to ground waters of Washington State via:

Dry well

Drainfield

Other

3. Areas with industrial activities at facility: *(check all that apply)*

Manufacturing Building

Material Handling

Material Storage

Hazardous Waste Treatment, Storage, or Disposal *(Refers to RCRA, Subtitle C Facilities Only)*

Waste Treatment, Storage, or Disposal

Application or Disposal of Wastewaters

Storage and Maintenance of Material Handling Equipment

Vehicle Maintenance

Areas Where Significant Materials Remain

Access Roads and Rail Lines for Shipping and Receiving

Other (please specify): _____

4. Material handling/management practices

a. Types of materials handled and/or stored outdoors: *(check all that apply)*

- | | |
|--|---|
| <input type="checkbox"/> Solvents | <input type="checkbox"/> Hazardous Wastes |
| <input type="checkbox"/> Scrap Metal | <input type="checkbox"/> Acids or Alkalies |
| <input type="checkbox"/> Petroleum or Petrochemical Products | <input type="checkbox"/> Paints/Coatings |
| <input type="checkbox"/> Plating Products | <input type="checkbox"/> Woodtreating Products |
| <input type="checkbox"/> Pesticides | <input type="checkbox"/> Other <i>(please list)</i> : _____ |

b. Identify existing management practices employed to reduce pollutants in industrial stormwater discharges: *(check all that apply)*

- | | |
|--|---|
| <input type="checkbox"/> Oil/Water Separator | <input type="checkbox"/> Detention Facilities |
| <input type="checkbox"/> Containment | <input type="checkbox"/> Infiltration Basins |
| <input type="checkbox"/> Spill Prevention | <input type="checkbox"/> Operational BMPs |
| <input type="checkbox"/> Surface Leachate Collection | <input type="checkbox"/> Vegetation Management |
| <input type="checkbox"/> Overhead Coverage | <input type="checkbox"/> Other <i>(please list)</i> : _____ |

5. Attach a facility site map showing stormwater drainage/collection areas, disposal areas and discharge points. This may be a hand-drawn map if no other site map is available *(See example on page 16 of this application)*. Label this as attachment H.5.

SECTION I. OTHER INFORMATION

1. Describe liquid wastes or sludges being generated by your facility that are not disposed of in the waste stream(s) and how they are being disposed of. For each type of waste, provide type of waste and the name, address, and phone number of the hauler.

See Attachment I.1

2. Describe storage areas for raw materials, products, and wastes.

Most hazardous materials are stored in Building 1006, specifically designed and operated as a hazardous material storage building. HM at the Industrial Wastewater Treatment Plant (IWTP) is stored along the west interior wall of the IWTP IAW applicable labeling and storage requirements. Dangerous wastes generated on base are stored in Central Accumulation Areas (< 90 day sites) before being transferred to Building 1051, the Treatment, Storage, and Disposal Facility (TSDF) for storage and disposal. NUWC Keyport follows NUWCDIVKPTINST 5090.3 Haz. Material Control and Management Program, the TSDF Permit, and NUWCDIVKPTINST 5090.11 Haz. Waste Management Plan to ensure compliance.

3. Have you designated the wastes described above according to the applicable YES NO procedures of Dangerous Waste Regulations, Chapter 173-303 WAC?

SECTION J. CERTIFICATIONS

1. Approval by Publicly-Owned Treatment Works [required by WAC 173-216-070(4)(b)]

I approve of the discharge as described in this application. The applicant is:

(Please check the appropriate box below.)

A Significant Industrial User (see Definitions at the end of this Section)

A Categorical Industrial User

Neither of the above

Name and location of sewer system to which this project will be tributary:

Central Kitsap Wastewater Treatment Plant

12351 Brownsville Hwy E. / Poulsbo, WA 98370

Treatment Works Owner: Kitsap County Public Works

Street: 614 Division Street, MS-26

City/State: Port Orchard, WA Zip: 98366

 April 12, 2023 Sewer Utility Division Manager
Signature of Treatment Works Authority Date Title

Stella Vakarcs
Printed Name

2. Application review by Intermediate Sewer Owner at point of discharge (if applicable)

I hereby acknowledge that I have reviewed the application for discharge to this sewer system.

Name and location of sewer system to which this project will be tributary:

N/A

Sewer System Owner: _____

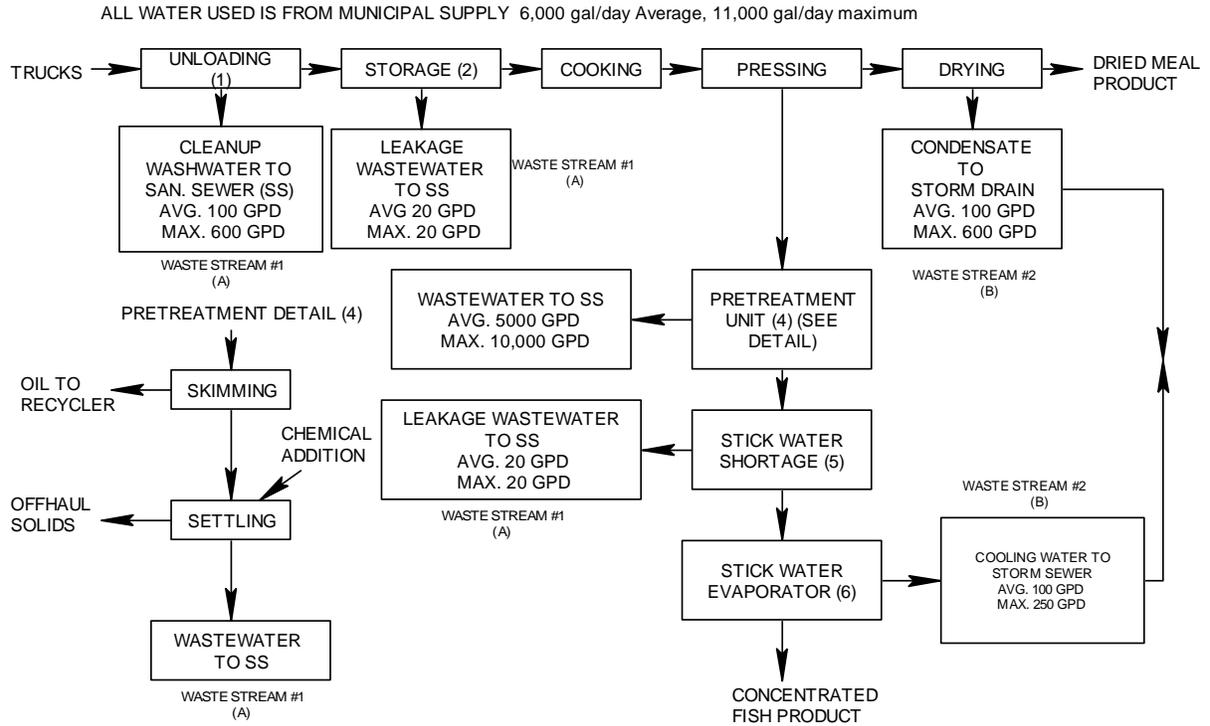
Street: _____

City/State: _____ Zip: _____

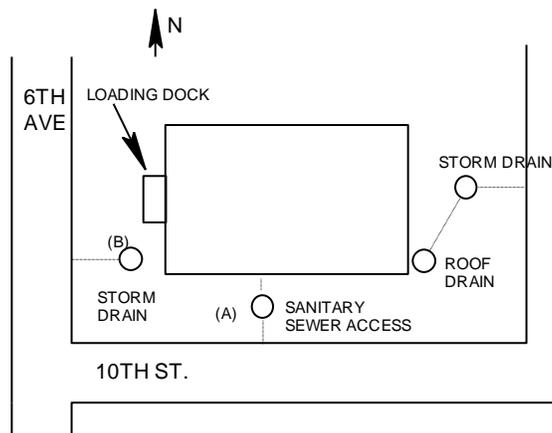
Signature of Sewer System Authority Date Title

Printed Name

Example 1 for application section C.2. (SCHEMATIC DIAGRAM)



Example 2 for application section F1 or H8 (FACILITY SITE MAP)



DEFINITIONS

Significant Industrial User (SIU)--

- 1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N; and
- 2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

Control Authority - means the Washington State Department of Ecology in the case of non-delegated POTWs or means the POTW in the case of delegated POTWs.

Categoric Industrial User (CIU): An industrial user subject to national categorical pretreatment standards promulgated by EPA (40 CFR 403.6 and 40 CFR parts 405-471).

Summary of Attachments That May be Required for This Application:

(Please check those attachments that are included)

- | | | | |
|-------------------------------------|--------------------------|------|---|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | C.2. | Production schematic flow diagram and water balance |
| <input type="checkbox"/> | <input type="checkbox"/> | C.4. | Wastewater treatment improvements |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | C.7. | Additional incidental materials |
| <input type="checkbox"/> | <input type="checkbox"/> | E.8. | Additional results of effluent testing |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | F.1. | Facility site map |
| <input type="checkbox"/> | <input type="checkbox"/> | H.5. | Stormwater drainage map |

If you need this document in a format for the visually impaired, call the Water Quality Program at 360-407-6600. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

ATTACHMENT B.1

APPLICATION TO RENEW NUWCDIVKPT PERMIT NO. ST0007353 TO DISCHARGE INDUSTRIAL WASTEWATER TO A POTW

Briefly describe all the manufacturing processes and products, and/or commercial activities at this facility.

SIC Code: 3479

NAICS Code: 332813

The Naval Undersea Warfare Center (NUWC) Division, Keyport performs testing and evaluation, engineering assembly, maintenance and repair, and fleet and industrial base support for undersea warfare systems, countermeasures and sonar systems.

The 340-acre facility has numerous industrial buildings, 21 single-family housing units, a barracks, and supporting utility systems and facilities. General industrial activities include metal working, metal finishing, machining, electrical assembly, electronic and mechanical systems maintenance and repair, depainting and painting, undersea systems teardown and refurbishment, components testing, and Naval vessel operation and maintenance. NUWC Division, Keyport support activities include utility shops, chemistry and non-destructive test laboratories, and a hazardous waste Treatment, Storage, and Disposal Facility (TSDF).

The most significant industrial wastewater discharge source at NUWC Keyport is the Industrial Wastewater Treatment Plant (IWTP), where facility personnel perform permit-by-rule treatment of hazardous waste and industrial wastewater prior to discharge to the sanitary sewer. Waste from metal finishing operations constitutes the majority of the wastewater treated at the IWTP. The IWTP accomplishes standard metal removal on contaminated industrial wastewaters by chromium reduction, flocculation, filtration and solids dewatering. All permit-by-rule discharges from the facility are authorized by State Waste Discharge Permit (SWDP) No. ST-0007353.

A new Otto Fuel Reclamation System (OFRS) at B. 514 will utilize a settling tank and carbon filtration to separate Otto Fuel II from seawater in order to retain Otto Fuel II for future use. The wastewater will be sampled to ensure wastewater effluent limits are met, then discharged directly to the sanitary sewer. This process was incorporated into the current version of SWDP No. ST-0007353, however installation of the system is not yet complete. At the time of this application submittal it is estimated that the system will be online late summer 2023. This waste stream is currently being processed via the NUWC TSDF and is not being discharged to the sanitary sewer until the new system is operation.

In addition to the IWTP and OFRS, there are a number of other industrial wastewater discharge sources to the sanitary sewer system from the installation. These discharges include, boiler and cooling tower discharges, washdown water for components returning from seawater testing, aquarium salinity test tank water, hydro-testing water, and assorted other facility processes associated with facility operations and maintenance. A complete list of industrial discharges to the sanitary sewer is included in Attachment C.1.

ATTACHMENT B.2

APPLICATION TO RENEW NUWCDIVKPT PERMIT NO. ST0007353
TO DISCHARGE INDUSTRIAL WASTEWATER TO A POTW

List the raw materials and products used at the facility.

NUWC Division, Keyport receives, stores and transports hundreds of types of products each week to support various system programs, command support requirements, maintenance tasks, and fleet repair and reissue requirements.

Therefore, the information listed in this attachment is limited to products and quantities used for processes that discharge to the Industrial Wastewater Treatment Plant or directly to sewer. No raw materials are used in these processes.

B. 825 Industrial Wastewater Treatment Plant

Product	Quantity	Purpose
Sulfuric Acid	30 gallons / year	Wastewater Treatment: pH adjustment
Sodium Sulfide	50 gallons / year	Wastewater Treatment: Metal removal, hexavalent chrome reduction, and flocculation
Sodium Hydroxide	50 gallons / year	Wastewater Treatment: pH adjustment
Ferrous Sulfate	50 gallons / year	Wastewater Treatment: Metal removal and hexavalent chrome reduction
Cationic Polymer	<1 lbs. / year	Wastewater Treatment: flocculation

B. 514 Otto Fuel Reclamation System

Product	Quantity	Purpose
Activated Carbon	7,000 lbs. / year	Wastewater Treatment: Otto Fuel II Removal
Otto Fuel II	3,000 gallons / year	Propellant

B. 38 Machine Shop

Product	Quantity	Purpose
Garnet Excel Cut 80	33,000 lbs. / year	Water Jet Cutter Media
Ceramic Tumbling Media	1 lbs. / year	Metal Part Deburring

B. 82 Battery Shop

Product	Quantity	Purpose
Potassium Hydroxide	2,000 gallons / year	Battery electrolyte

B. 98, 478, 820 Test Tanks

Product	Quantity	Purpose
Instant Ocean Aquarium Salt Mix	12,000 gallons / year	Creating seawater for testing seawater components

B. 84 Torpedo Shell Repair Shop

Product	Quantity	Purpose
Bonderite M-CR 871 Aero	< 1 gallon / year	Chromate conversion for corrosion control (non-hexavalent)
Bonderite M-CR 1132 Aero	< 1 gallon / year	Chromate conversion for corrosion control (hexavalent)
Bonderite M-CR 1201 Aero	< 1 gallon / year	Chromate conversion for corrosion control (hexavalent)
Bonderite C-IC 33 Aero	5 gallons / year	Aluminum surface preparation

Various

Product	Quantity	Purpose
Calcium Carbonate	20 lbs. / year	Wastewater Treatment: pH neutralization of boiler condensate

B. 1058 Metal Finishing Facility

Product	Quantity	Purpose
Sifco No. 3 Etching and Desmutting 1023	< 1 gallon / year	Selective Plating
Sifco Gold, Hard Alloy Plating Solution 5370	< 1 gallon / year	Selective Plating
Sifco Nickel Special 5630 (Nickel Sulfate Solution)	2 gallons / year	Selective Plating
Sifco No. 2 Etching Code 1022	< 1 gallon / year	Selective Plating
Sifco Activator #3 Code SCM 4350	< 1 gallon / year	Selective Plating
Sifco Copper Alkaline, Heavy Build 5280	< 1 gallon / year	Selective Plating
Sifco Electrocleaning 1010/4100	< 1 gallon / year	Selective Plating
Sifco Nickel Acid 2080/5600	< 1 gallon / year	Selective Plating
Sifco Copper Acid 2050	< 1 gallon / year	Selective Plating
Sifco Tin (Alkaline B) Code 5951	< 1 gallon / year	Selective Plating
Sifco No. 7 Activating Solution Cod 1027	< 1 gallon / year	Selective Plating
Sifco No. 4 Etching and Activating 1024/4250	< 1 gallon / year	Selective Plating
Bonderite M-CR 1201 Aero	< 1 gallon / year	Selective Plating

Product	Quantity	Purpose
Sifco No. 1 Etching and Activating Code 1021/4200	< 1 gallon / year	Selective Plating
Sifco No. 3 Etching and Desmutting Metal Cleaner	< 1 gallon / year	Selective Plating
Potassium Fluoride (40%)	< 1 gallon / year	Selective Plating
Specialty Sealant MTL	< 1 gallon / year	Selective Plating
Potassium Iodine Solution (10%)	< 1 gallon / year	Selective Plating
Ricca Starch Indicator (Mercury Free)	< 1 gallon / year	Titration
Sodium Thiosulfate	< 1 gallon / year	Titration
D-Sorbitol	< 1 gallon / year	Selective Plating
Ammonium Bifluoride Flake	< 1 gallon / year	Selective Plating
Potassium Hydroxide P250-500	< 1 gallon / year	Selective Plating
Bromocresol Green Indicator 1%	< 1 gallon / year	Selective Plating
Nickel LDC-2801	< 1 gallon / year	Selective Plating
Potassium Permanganate	< 1 gallon / year	Selective Plating
Sifco SHC Hard Coating Solution Type III Code 5025	< 1 gallon / year	Selective Plating
Sodium Dichromate	100 gallons / year	Dichromate Sealing
Sulfuric Acid	100 gallons / year	Anodizing
Iridite 14-2	100 gallons / year	Chromate Conversion Coating
Nitric Acid Solution (50%)	100 gallons / year	Desmutting
Sodium Hydroxide (50%)	100 gallons / year	Etching
Alkaline Aluminum Cleaner 166	100 gallons / year	Metal Cleaning
Daraclean 282	100 gallons / year	Aqueous Degreaser
Anodizing Strip	100 gallons / year	Anodizing
Anodizing Dye Seal	100 gallons / year	Metal Dye
Black Anodizing Dye Seal	100 gallons / year	Metal Dye

ATTACHMENT C.1

APPLICATION TO RENEW NUWCDIVKPT PERMIT NO. ST0007353 TO DISCHARGE INDUSTRIAL WASTEWATER TO A POTW

Table C-1 included in this attachment lists all processes that generate wastewater at NUWC Keyport. Any new process or changes that are not already approved via our current permit, are highlighted. All other processes outlined in Table C-1 have been previously approved and reviewed via the permitting process with no significant changes since the time of approval.

The two industrial treatment processes at NUWC Keyport are the industrial wastewater treatment plant (IWTP) at B. 825, and the Otto Fuel Reclamation System (OFRS) at B. 514. Further details about the treatment processes for these two systems is provided below.

Building 825 IWTP: The IWTP (Industrial Wastewater Treatment Plant), located in Building 825, was originally designed and built to treat the wastewater from the extensive plating shop, which was operated at this site prior to centralization of metal finishing operations to the Puget Sound Naval Shipyard. The design capacity for the Industrial Wastewater Treatment Plant is 144,000 gpd. NUWC Division, Keyport routes most of the industrial process wastewater generated on the base to Building 825 (IWTP). The IWTP performs wastewater treatment on a batch basis, resulting in an average discharge of approximately 35,000 gallons per day (gpd), on those days in which a batch is discharged. Due to the reduced scale of metal finishing activities conducted at this time, only one to two discharges have been performed annually over the past several years. However, historically, discharges typically occur every 3-4 months. NUWC Keyport anticipates that one batch discharge of 35,000 gallons every 3-4 months will be the typical discharge frequency moving forward.

The following wastes are treated at the IWTP: Metal Bearing Wastewaters, Hexavalent Chromium-Bearing Wastewaters.

The IWTP performs wastewater treatment on a batch basis. Most of the wastewater comes from Building 1058, the regional metal finishing facility via waste stream 1058-1. Other routine sources of wastewater processed at the IWTP come from waste streams 38-1, 82-3, and 84-1.

A tank yard outside B. 825 contains the tanks necessary for treatment and storage of the wastewater. Due to the outdoor location, a significant amount of rainwater is introduced into the wastewater as it accumulates within the outdoor tanks.

The following three sumps are in this building: acid, caustic, and neutral sumps. The acid sump is for acid-metal bearing wastes, the caustic sump was used for Otto Fuel II, however is not currently in use since the new OFRS system at B. 514 will be discharged directly to the sanitary sewer. The neutral sump is for the treated wastewater conveyance to the clear water storage tanks outside the building.

Hexavalent chromium-bearing wastewaters, are treated in the 40,000-gallon Chromium Reactor tank, T-8 (located at the IWTP) to reduce the chromium to its trivalent state, using sulfuric acid in conjunction with sodium sulfide. Treatment chemicals are added based on lab results of the waste stream for chromium reduction. The operator uses a table with corresponding treatment chemicals to be added based on the concentration of hexavalent chromium. Sulfuric acid, ferrous sulfate, sodium sulfide or sodium hydroxide are added as necessary.

Metal-bearing acid waste is conveyed to a 40,000-gallon acid storage tank, T-5. From there, it is transferred to T-8, after the hexavalent chromium has been reduced to its trivalent form. From T-8, the wastewater is conveyed to tank T-10, a 50,000-gallon intermediate storage tank.

Any Caustic waste stream may also be pumped to tank T-10 via a 7000-gallon caustic waste storage tank and a 7000-gallon cyanide reactor tank designed for cyanide destruction, however there is no cyanide waste in this base. This part of the system is no longer in use because otto fuel II waste from B. 514 was the only caustic waste stream and will now be discharged directly to sewer via the new OFRS.

The pH is adjusted to 8-9 in the intermediate tank and polymers are then added to aid settling suspended solids. The treated wastewater is flash mixed and goes to a flocculation tank. From there, the wastewater goes to a 6300-gallon clarifier tank, T-11, which is used to separate the sludge slurry and the water. Water from the clarifier is transferred to a 1000-gallon clarifier overflow tank. Four sand filters are used to remove any residual suspended solids. Two of the units are online in parallel and two are in backwash. The filters are backwashed every 168 hours. The backwash water goes to tank T-10. A 1500-gallon tank, T-13, is used for sludge storage after clarification in the 6300-gallon clarifier tank, T-11. Sludge presses are used to dewater the sludge for transfer to the Treatment, Storage, and Disposal Facility (TSDF) on-site. The treated and filtered wastewater is conveyed to and stored in two 20,000-gallon clear water storage tanks outside the building. These tanks are designated as T-14A and T-14B clear water storage tanks. Samples are taken from a sample port inside the building as the water is conveyed into the holding tanks. The water is tested and results are reviewed. If the sample meets permit requirements, the operator is informed to discharge the effluent to the sanitary sewer.

See Attachment C.2b for the IWTP flowchart outlining this process.

Building 514 OFRS: The Otto Fuel Reclamation System (OFRS) is designed to extract reusable otto fuel II from torpedoes after they have been run and returned to the shop for maintenance. The primary component of otto fuel II is propylene glycol dinitrate (PGDN). The system pumps a mixture of seawater and otto fuel II from the weapon into a 3,150 gallon double-walled separation tank (ST-1) where the water and fuel gravity separate over time. Once separated, the fuel at the bottom of ST-1 is pumped into a 2,000 gallon holding tank (CBT-1) from which it can be pumped back into a new torpedo. This tank is called the Code B Otto Fuel Tank since reclaimed otto fuel is referred to as Code B otto fuel.

The water from the separation tank is then pumped through a series of two activated carbon filter columns aligned in series to remove any traces of contaminants that may still remain. The now clean water is pumped into a processing tank (WST-1) where the water can be tested for PGDN to determine if it is suitable to be sent to the sanitary sewer. If the water tested does not meet requirements, it will be circulated back through the carbon filters again. If the water meets requirements, the contents of the processing tank will be discharged to the sanitary sewer. The discharge volume of each batch discharge will be logged by recording WST-1 tank level prior to and following discharge.

See Attachment C.2c for the OFRS flowchart outlining this process.

Table C-1 – List of Industrial Wastewater Discharges at NUWC Keyport. Newly proposed discharges or changes for existing discharges are highlighted and italicized.

Process Location	Waste Stream Name	Waste Stream ID #	Process Description	Batch or Continuous
B. 38	Deburring Wastewater	38-1	Building 38 contains two deburring machines that discharge wastewater with low metal levels into a collection sump that is pumped directly to Building 825, the industrial wastewater pretreatment plant. Less than 20 gallons/year.	Continuous
B. 38	Water Jet Cutter	38-2	The water jet cutter discharges to a dedicated solids settling treatment and filtrations system that discharges directly to the sanitary sewer. Less than 1,000 gallons/day. Typically runs 3-4 days per week.	Continuous
B. 80	Boiler/Cooling Tower Discharge	80-1	A high-efficiency condensing boiler generates a very small wastestream of acidic condensate. The condensate is pumped through calcium carbonate to buffer the wastewater and to ensure that the pH is within the discharge limits prior to being discharged to the sanitary sewer. The calcium carbonate is changed out annually.	Continuous
B. 81	Hydro-Testing Water	81-1	In this shop, connectors are molded to electrical cables and hydro-tested in a 50 gallon and 100 gallon pressure vessels. A combined volume of approximately 75 gallons of hydro-test water is drained from the two tanks during each test event (weekly).	Batch
B. 82	Hydro-Testing Water	82-1	Hydro-test water is recycled and stored in an adjacent 300-gallon storage tank. Approximately once each year, the test water is disposed of to the sanitary sewer via pumping to a utility sink within the building.	Batch
B. 82	Washdown Wastewater	82-2	Components returning from open water testing are washed down on a covered patio east of Building 82. Wash water is collected in a 600-gallon underground tank. When the tank nears capacity (approximately once a year), the wash water is disposed of at a nearby sewer lift station.	Batch
B. 82	Battery Fluid Wastewater	82-3	Wet cell batteries are washed down, recharged, and reissued at a battery maintenance shop within B. 82. Liquid potassium hydroxide solution from expired batteries and wash water from recycled batteries is collected in a sink that discharges into a 330-gallon portable tank located outside and adjacent to Building 82. The tank is transported to B. 825 (IWTP) for pretreatment. Approximately 2,100 gallons per year.	Batch

Process Location	Waste Stream Name	Waste Stream ID #	Process Description	Batch or Continuous
B. 82	Non-destructive Testing Laboratory Solid Settling Treatment System Water	82-4	Waste water from polishing and grinding of metallurgical samples at the Failure Analysis Laboratory is discharged into the sanitary sewer after it passes through the solids settling treatment system. The volume of wastewater generated is approximately 100 gallons per month.	Continuous
B. 84	Torpedo Shell Repair Wastewater	84-1	This waste stream consists of primarily rinse water with small amounts of phosphoric acid and trace amounts of chromic acid. This wastewater is generated from aluminum surface preparation and chromium conversion coating. It is transported in five-gallon containers to Building 825 for pretreatment prior to discharge to the sanitary sewer. The old process which utilized hexavalent chromium conversion coating is being phased out in favor of a non-hexavalent chromium conversion coating. The use of pen application devices has significantly reduced the volume of wastewater generated. This waste stream produces less than 20 gallons per year.	Batch
B. 98	Hydro-Testing Water	98-1	A 2,500 gallon potable water makeup tank located outside the north wall of B. 98 feeds an 800 gallon and 400 gallon hydro test tank. The test tanks are located in the northern section of B. 98 and are used to test torpedo sealing surfaces. The holding tank is drained to sanitary sewer twice per year. Daily operations from the hydro tanks vent approximately 10 gallons per test event to the sanitary sewer via the floor drain. Total estimated discharge volume is 3,000 gallons per year.	Batch
B. 98	Test Tank Water	98-2	Aquarium salinity is added to potable water to test flowmeters in a closed loop system which contains a 1,090 gallon tank. The only component exposed to saltwater is the rubber lining of the flowmeter. The saltwater tank is drained once per year and approximately 50 gallons of potable water is used to flush the system. Approximately 1,140 gallons is discharged to sanitary sewer during this annual event. Kitsap County requires this discharge to be at a rate of 100 gpm or less.	Batch

Process Location	Waste Stream Name	Waste Stream ID #	Process Description	Batch or Continuous
B. 108	Noncontact Cooling Water	108-1	Potable Water is used in a single-pass, non-contact cooling water system for a centrifugal testing unit. System use varies, but is infrequent (less than once per month), with only periodic discharges to sanitary sewer of less than 200 gallons per event.	Batch
B. 206	Boiler/Cooling Tower Discharge	206-1	Steam boilers blowdown water discharges to sanitary sewer after passing through a cooler in order to reduce water temperatures prior to entering sewer.	Continuous
B. 478	Washdown Water	478-1	Potable water used to wash down undersea vehicles returning from open water testing. Washing takes place several times per week, at about 200 gallons per event with discharge to the sanitary sewer. Washing occurs above the 8,300 gallon test tank.	Continuous
B. 478	Test Tank Water	478-2	Aquarium salinity added to potable water to test small vehicles in an 8,300 gallon tank. The tank is located inside the west side of B. 478 and is fed by a 10,000 gallon makeup water tank. This tank is drained 1-2 times per year. Kitsap County requires this discharge to be at a rate of 100 gpm or less. Discharge is direct to sanitary sewer.	Batch

Process Location	Waste Stream Name	Waste Stream ID #	Process Description	Batch or Continuous
B. 478	Test Tank Washdown Water	478-3	<i>NEW PROPOSED WASTE STREAM: 10,000 gallon tank located outside the west side of B. 478 supplies makeup aquarium salinity water to the interior test tank. Unlike the interior test tank, the exterior tank cannot be completely drained due to location of drainage piping. Therefore the bottom 800 gallons of the tank remains stagnant and accumulates algae over time. For system cleanliness, it must be pumped out and pressure washed every two years or as required. No detergents are used for this process. The discharge wastewater consists of aquarium salinity water, potable water, and algae. Kitsap County requires this discharge to be at a rate of 100 gpm or less. NUWC Keyport has sampled the effluent for BOD5, pH, and TSS with all results being below state and local limits. NUWC Keyport requests to add the discharge to section S.11 of the permit as a direct discharge to sanitary sewer. Maximum daily flow anticipated is 1,200 gallons per day. Expected frequency of discharge is once every two years.</i>	<i>Proposed Discharge is Batch</i>
B. 478	Boiler/Cooling Tower Discharge	478-4	A high-efficiency condensing boiler generates a very small wastestream of acidic condensate. The condensate is pumped through calcium carbonate to buffer the wastewater and to ensure that the pH is within the discharge limits prior to being discharged to the sanitary sewer. The calcium carbonate is changed out annually.	Continuous
B. 489	Boiler/Cooling Tower Discharge	489-1	Two high-efficiency condensing boilers generate a very small wastestream of acidic condensate. The condensate is pumped through calcium carbonate to buffer the wastewater and to ensure that the pH is within the discharge limits prior to being discharged to the sanitary sewer. The calcium carbonate is changed out annually. Additionally, B. 489 utilizes cooling towers which periodically blowdown to sewer as required via an automated system.	Continuous

Process Location	Waste Stream Name	Waste Stream ID #	Process Description	Batch or Continuous
B. 514	Otto Fuel II Recovery Wastewater	514-1	The OFRS at B. 514 will utilize a settling tank and carbon filtration to separate Otto Fuel II from seawater in order to retain Otto Fuel II for future use. The wastewater will be sampled to ensure wastewater effluent limits are met, then discharged directly to the sanitary sewer. The volume of each batch discharge will be logged prior to discharge. The volume of each batch discharge will typically be 800-1,500 gallons with 5-10 batch discharges annually. Anticipated annual discharge volume is 7,560 gallons per year.	Batch
B. 514	Noncontact Cooling Water	514-2	Potable water is used for chill water as part of a closed-loop, single-pass, noncontact cooling system. This system is used to cool four torpedo test sets. Cooling water passes through the test sets at four separate stations via the cooling system piping. The cooling system at each station includes a discharge to sanitary sewer. Small amounts of water are discharged from the system during use (approx. 10 gallons per day during heavy use). After cooling the test sets, heated water is sent back to the chiller for cooling.	Continuous
B. 514	Boiler/Cooling Tower Discharge	514-3	Three high-efficiency condensing boilers generate a very small wastestream of acidic condensate. The condensate is pumped through calcium carbonate to buffer the wastewater and to ensure that the pH is within the discharge limits prior to being discharged to the sanitary sewer. The calcium carbonate is changed out annually.	Continuous
B. 514	Buoyancy Subsystem Washwater	514-4	<i>NEW PROPOSED WASTE STREAM: Buoyancy subsystems (BSS) are collected for reuse following open water testing and washed in a deep sink using small amounts of General Purpose Liquid Detergent (Nonionic). Internal Navy procedures ensure only this specific soap is utilized as part of this process. A BSS consists of an electrical initiator, a gas generator, a CO2 container, a buoyancy bag, and relief valves inside of a hull section. The CO2 container is a stainless steel container that houses the electrical initiator and the gas generator and is filled with 9.2 pounds of liquid CO2. When triggered, the electrical initiator ignites boron/potassium nitrate ignition pellets which in turn ignite the ammonium nitrate grain of the gas</i>	<i>Proposed Discharge is Continuous</i>

Process Location	Waste Stream Name	Waste Stream ID #	Process Description	Batch or Continuous
			<p>generator, turning the liquid CO₂ to gas and causing the bag to inflate and carry the tested component to the water surface. Combustion products from the reaction that causes the bag to inflate, and mild corrosion of the bronze relief valve within the BSS, cause low levels of metals in the wastewater. Also present in the wastewater are small amounts of sea water, soap, and potable water. The wastewater from this washing process is collected in a 250 gallon intermediate bulk container, until it can be sampled, designated, and disposed via the NUWC Keyport permitted Treatment, Storage, and Disposal Facility as a non-regulated waste. The tank is typically emptied every 3-4 months. Total annual discharge volume is approximately 1,000 gallons. Due to the small quantity of wastewater and relatively low levels of metals, NUWC Keyport is requesting this waste stream be added to section S.11 Minor and intermittent industrial discharges for direct discharge to the sanitary sewer. This waste stream cannot be treated at the Industrial Wastewater Treatment Plant because the soap would interfere with the treatment process.</p> <p>The SDS for the detergent used to clean the bags, bioassay results showing this wastewater is non-toxic, and sample results for this waste stream are included in Attachment E.4</p>	
B. 820	Test Tank Water	820-1	<p>Aquarium salinity added to potable water to test small vehicles in tank. Kitsap County requires this discharge to be at a rate of 100 gpm or less. Discharge is direct to sanitary sewer. This wastestream no longer exists at this facility. Request this wastestream be removed from the permit.</p>	Batch
B. 820	Washdown Water	820-1	<p>NEW PROPOSED WASTE STREAM: Potable water used to wash down undersea vehicles returning from open water testing. Washing takes place several times per week, at about 200 gallons per event with discharge to the sanitary sewer. Washing occurs in the south shop of the building. This washing station is not currently in use as the building is undergoing renovation. However, once renovations are complete, facility personnel</p>	Proposed Discharge is Continuous

Process Location	Waste Stream Name	Waste Stream ID #	Process Description	Batch or Continuous
			<i>would like to begin using the washing station. Wastewater characteristics should be identical to other washdown water waste streams at NUWC Keyport.</i>	
B. 825	IWTP Discharge Wastewater	825-1	B.825 is the Industrial Wastewater Treatment Plant (IWTP). The IWTP accomplishes standard metal removal on contaminated industrial wastewaters by chromium reduction, flocculation, filtration and solids dewatering. The IWTP discharges to the sanitary sewer. Each batch discharge is approximately 35,000 gallons. There are typically 3-4 batch discharges per year.	Batch
B. 894	Washdown Water	894-1	Potable water is used to wash down components returning from open water testing. Washdown takes place in a designated area inside the building and discharge is plumbed directly to sanitary sewer. This facility is currently under construction, but is expected to be in use beginning early summer 2023. Total expected frequency and volume of discharge will depend on mission requirements, however will be comparable to other washdown discharges (200 gallons per washing event, with several washing events per week).	Continuous
B. 894	Boiler/Cooling Tower Discharge	894-2	A high-efficiency condensing boiler generates a very small wastestream of acidic condensate. The condensate is pumped through calcium carbonate to buffer the wastewater and to ensure that the pH is within the discharge limits prior to being discharged to the sanitary sewer. The calcium carbonate is changed out annually. Additionally, B. 894 utilizes cooling towers which periodically blowdown to sewer as required via an automated system.	Continuous
B. 1003	Boiler/Cooling Tower Discharge	1003-1	Two high-efficiency condensing boilers generate a very small wastestream of acidic condensate. The condensate is pumped through calcium carbonate to buffer the wastewater and to ensure that the pH is within the discharge limits prior to being discharged to the sanitary sewer. The calcium carbonate is changed out annually. Additionally, B. 1003 utilizes cooling towers which periodically blowdown to sewer as required via an automated system.	Continuous

Process Location	Waste Stream Name	Waste Stream ID #	Process Description	Batch or Continuous
B. 1050	Boiler/Cooling Tower Discharge	1050-1	A high-efficiency condensing boiler generates a very small wastestream of acidic condensate. The condensate is pumped through calcium carbonate to buffer the wastewater and to ensure that the pH is within the discharge limits prior to being discharged to the sanitary sewer. The calcium carbonate is changed out annually. Additionally, B. 1050 utilizes cooling towers which periodically blowdown to sewer as required via an automated system.	Continuous
B. 1058	Plating Wastewater	1058-1	Metal anodizing and metal coating operations are performed at the facility. The anodizing process for aluminum includes standard and hard-coat anodizing employing sulfuric acid solutions. The coating and sealing processes include chromate conversion coating of aluminum, as well as applications of dye and sealing solutions in the anodizing process. Wastewater from the rinse tanks drains to a 1000-gallon acid-waste storage tank in the basement of the building. Wastewater from this tank is automatically pumped from this tank to a 10,000-gallon tank located outside the NE corner of the building. Wastewater from this tank is pumped to the industrial wastewater lift station outside the northeast corner of Building 233, and pumped to Building 825 for pretreatment. Anticipated volume of this waste stream is approximately 32,700 gallons per year.	Batch
B. 1058	Boiler/Cooling Tower Discharge	1058-2	Steam boilers blowdown water discharges to sanitary sewer after passing through a cooler in order to reduce water temperatures prior to entering sewer.	Continuous
B. 1059	Furnace Condensate Wastewater	1059-1	A high-efficiency furnace generates a very small wastestream of acidic concentrate. The condensate is pumped through a 30-gallon container of calcium carbonate to buffer the wastewater and to ensure that the pH is within the discharge limits prior to being discharged to the sanitary sewer. The container is checked twice each year, in order to replenish the calcium carbonate. This system has been replaced with heat pumps with no sewer discharge. Request this wastestream be removed from the permit.	Continuous

Process Location	Waste Stream Name	Waste Stream ID #	Process Description	Batch or Continuous
P-386 B. 1086	Treatment of Oily Wastewater	P386-1086-1	There are two undersea vehicle wash racks of identical design on the north and south side of B. 1086, each serviced by an Oil Water Separator for oil removal. Trench drains under the covered wash rack area flow into a sediment trap, and then through a VortClarex VCL30 oil water separator with a design flow rate of 110 gpm. After oil separation, remaining water discharges to sanitary sewer. B. 1086 was formerly named P-386. Construction is still ongoing and the oil water separator is not yet in use. Expected construction completion timeframe is summer 2023. Anticipated discharge volume is approximately 1,000 gallons per day.	Continuous
Various	Mop Wastewater	KYPT-1	Discharge for mop water from janitorial activities at various locations within the installation direct to the sanitary sewer.	Batch
Various	Eyewash Stations	KYPT-2	Discharge of emergency eyewash stations at various locations throughout the facility. Wastewater goes direct to sanitary sewer.	Continuous
Various	Concrete Cutting and Slurry Water	KYPT-3	Discharge for concrete cutting and slurry water from concrete activities at the facility. This is common general wastestream that may occur at multiple sites throughout the installation. Any chemical additives from concrete activities will need Base Environmental Office approval prior to discharge. Additionally, wastewater will be neutralized (pH adjusted), settled, and filtered prior to discharge into sanitary sewer.	Batch
Various	Utility potable water line flushing	KYPT-4	Discharge of chlorinated water from installation potable water line flushing for disinfection. This is a general waste stream that occasionally occurs at multiple sites throughout the installation. Kitsap County Publically Owned Treatment Works guidance requires flow be metered at less than 150 gpm, and any volume greater than 5,000 gallons be de-chlorinated to less than 50 ppm prior to discharge.	Continuous

ATTACHMENT C.2

APPLICATION TO RENEW NUWCDIVKPT PERMIT NO. ST0007353 TO DISCHARGE INDUSTRIAL WASTEWATER TO A POTW

Produce a schematic drawing showing production processes, water flow through the facility, wastewater treatment devices and waste streams.

The following flow diagrams are included in this attachment:

Figure C.2.a – Industrial Waste Stream Flowchart

This figure shows the flow path of all waste streams listed in Attachment C.1. Flow values are averages in gallons per day, based on annual use data from 2022.

Figure C.2.b – IWTP Flowchart

This figure shows the wastewater treatment process at the IWTP. Flow values are based on average flow for a typical batch discharge of 35,000 gallons from the IWTP.

Figure C.2.c – Waste Stream 514-1 OFRS Flowchart

This figure shows the flow path for wastewater treatment via the OFRS. Flow data is in gallons per year. Flow values are based on historical data for this waste stream.

Figure C.2.a - Industrial Waste Stream Flowchart

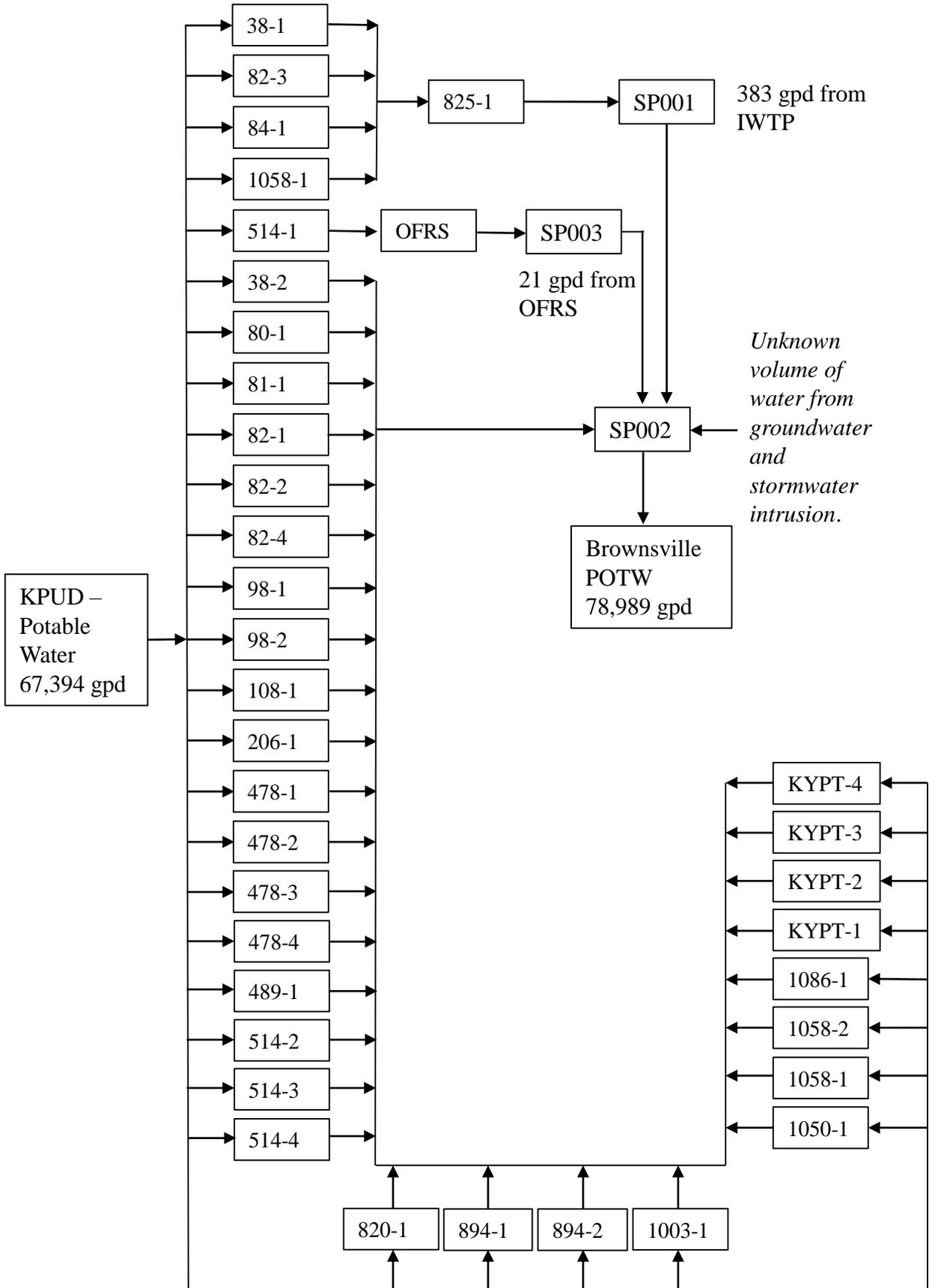
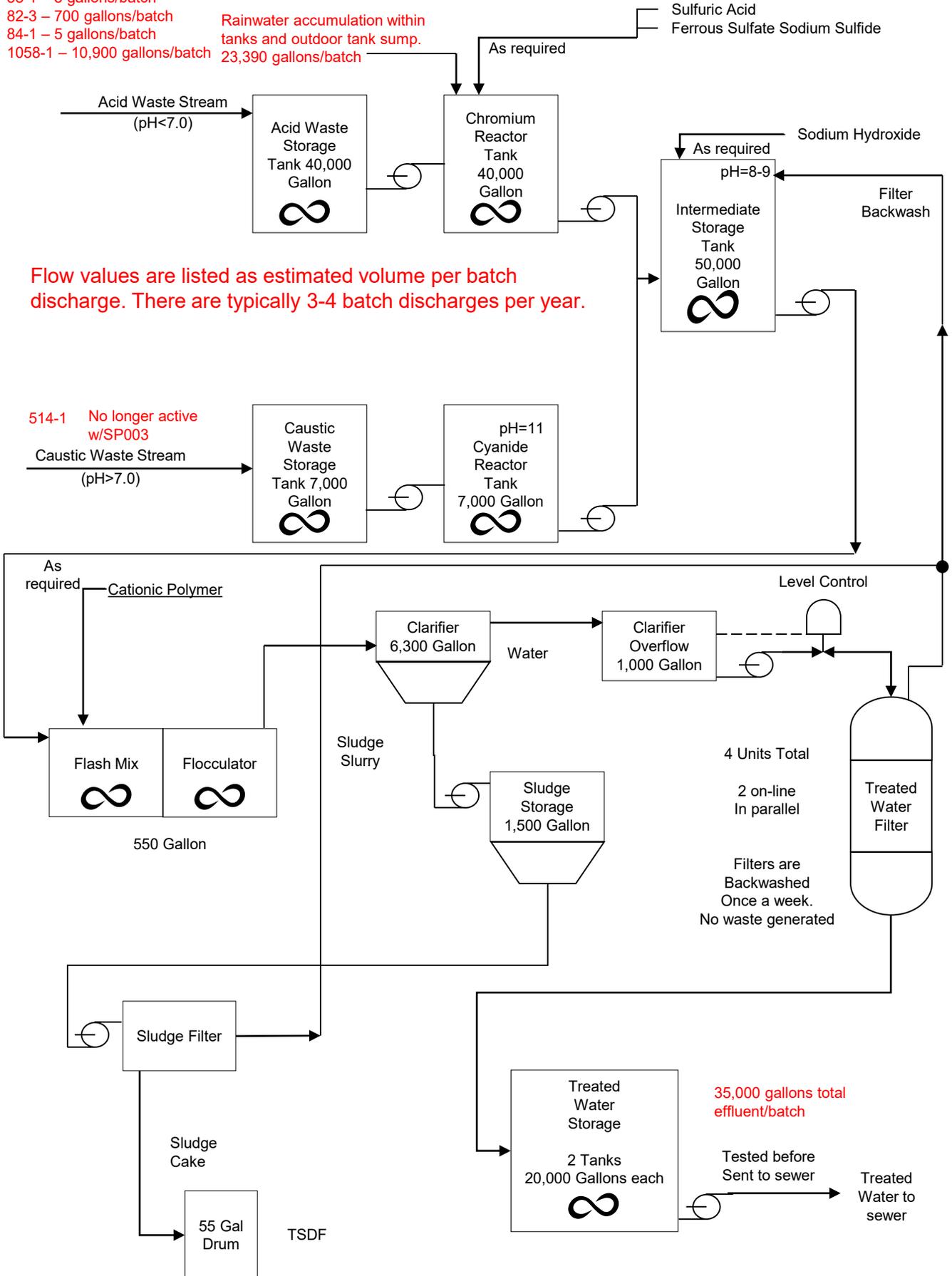


Figure C.2.b - IWTP Flowchart

38-1 – 5 gallons/batch
 82-3 – 700 gallons/batch
 84-1 – 5 gallons/batch
 1058-1 – 10,900 gallons/batch

Rainwater accumulation within tanks and outdoor tank sump. 23,390 gallons/batch

Sulfuric Acid
 Ferrous Sulfate Sodium Sulfide



Flow values are listed as estimated volume per batch discharge. There are typically 3-4 batch discharges per year.

514-1 No longer active w/SP003

4 Units Total

2 on-line In parallel

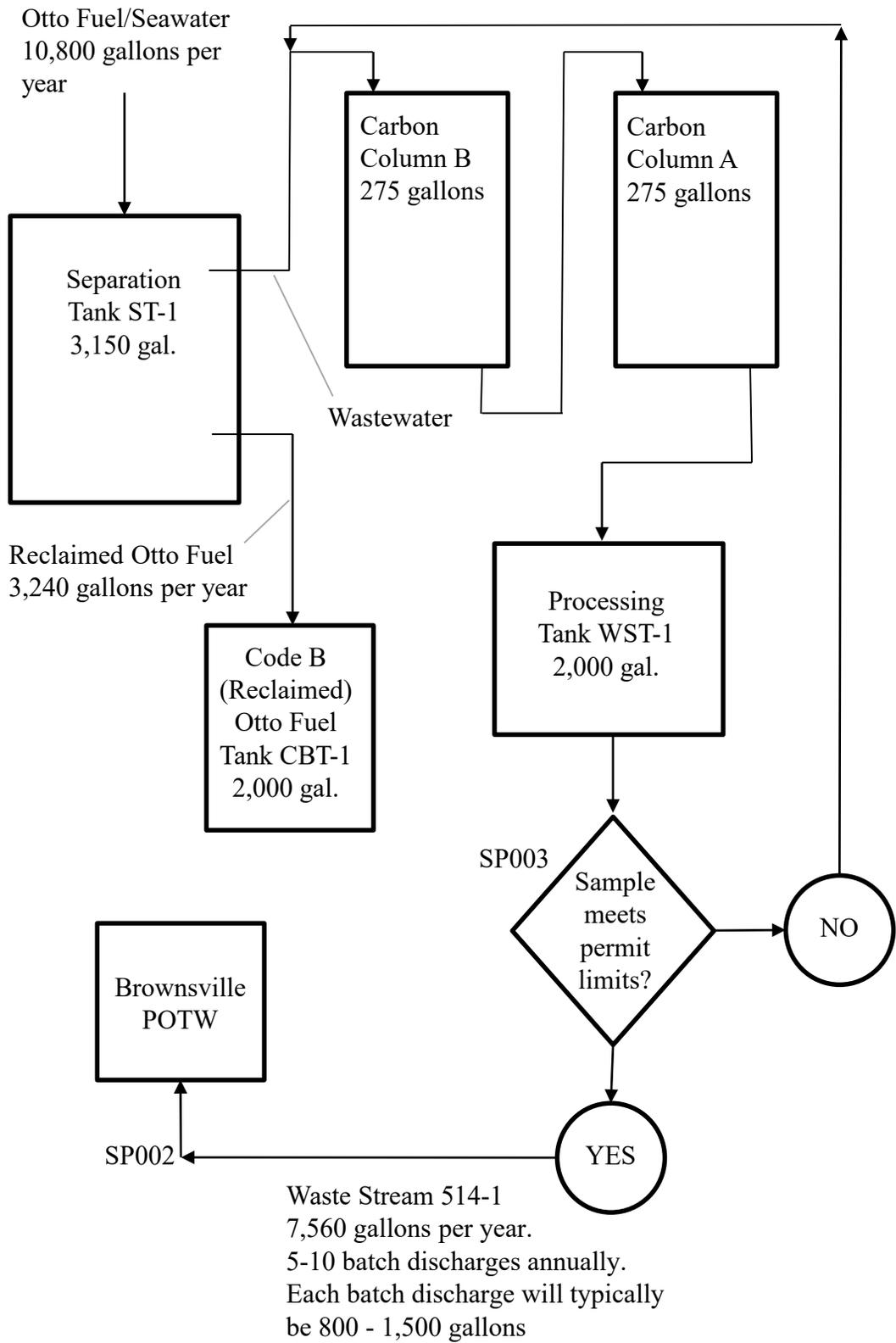
Filters are Backwashed Once a week. No waste generated

35,000 gallons total effluent/batch

Tested before Sent to sewer

TSD

Figure C.2.c - Waste Stream 514-1 OFRS Flowchart



ATTACHMENT C.7

APPLICATION TO RENEW NUWCDIVKPT PERMIT NO. ST0007353
TO DISCHARGE INDUSTRIAL WASTEWATER TO A POTW

List of all incidental materials, such as paint, grease, solvents, and cleaners that are used or stored on site.

The following list includes only materials used/stored on sites conducting operations that create discharges to the Industrial Wastewater Treatment Plant, Otto Fuel Reclamation System, or directly to sewer. SDSs for solvents and solvent-based cleaners are also attached.

Table C.7 – Incidental materials stored on sites associated with industrial wastewater discharges.
Materials with quantities less than 10 gallons or 50 lbs. are not included in this table.

SDS	PRODUCT NAME	SOLVENT (Y/N)	QUANTITY	LOCATION
HCXNYG	DENATURED ALCOHOL (55 GL DR)	Y	55 gallons	Various
HDCMNH	METHYL ETHYL KETONE	Y	10 gallons	84
HCXHBX, HFBTTT, HFSBPW	ISOPROPYL ALCOHOL	Y	200 gallons	Various
HCZQNW	SUPER AGITENE	Y	100 gallons	489, 514
HFNKFH, HFNQSF	MIL-PRF-680 TY II	Y	800 gallons	489, 514
HFGKSN	DARACLEAN 282	Y	100 gallons	1058
HFRJLY	ALUMINUM CLEANER 166	Y	100 gallons	1058
HDGCQH	SHEILDED METAL ARC WELDING (SMAW) ELECTRODES	N	50 lbs	233
HCSTTY	DESICCANT ACTIVATED	N	200 lbs	489
HCXYGW, HDHWPG	BALLOTINI IMPACT BEADS	N	50 lbs	478
HCXBMQ	BEL-RAY TERMALENE GREASE 2	N	10 gallons	478
HCYPBS	CHEVRON TURBINE OIL SYMBOL 2190 TEP	N	10 gallons	478
HCZBBQ	ARPOLUBE 629 SHC SYNTHETIC GEAR & BEARING OIL	N	10 gallons	489
HCTLGW	MOBIL DELVAC 1 5W-40	N	55 gallons	489, 514
HFRWVM, HCVVMQ	MOBIL DELVAC MX 15W-40	N	400 gallons	489, 514
KDFRYD	EPOXY KIT SA1600/SB1609	N	300 lbs	489, 514
HDFYXM	SPECIALTY COPPER PCN38	N	50 lbs	1058
HDBMJK	INSTANT OCEAN SYSTHETIC SEA SALT	N	1000 gallons	98, 478

SDS	PRODUCT NAME	SOLVENT (Y/N)	QUANTITY	LOCATION
HCZMBJ	BENGAL BAY GARNET ABRASIVE GRAINS AND POWDERS #80	N	1000 lbs	233/38
HCZXYH	SEMI GLOSS ENAMEL, COLOR #26622 GRAY	N	25 gallons	478
HCZXYH	SEMI GLOSS ENAMEL, COLOR #26622 GRAY	N	50 gallons	489, 514
HDDDNM	SODIUM CHLORIDE (SALT)	N	200 lbs	Various
HDBNQX	NYLON POWDER	N	800 lbs	233/38
HFJWDF	NON-IONIC MIL-D-16791 (DETERGENT)	N	20 gallons	514
HCXDDC	A-1 BLEACH, COMMERCIAL DISINFECTANT	N	20 gallons	Various

55 gal. DR

Case: 4N766

6810-00-201-0904

HCXNYG

COMPANY IDENTITY: CSD/STARTEX
PRODUCT IDENTITY: DENATURED ALCOHOL
NEW MSDS DATE: 11/03/2009

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MATERIAL SAFETY DATA SHEET

This Material Safety Data Sheet conforms to the requirements of ANSI Z400.1.
THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (HAZARD COMMUNICATION STANDARD)
IMPORTANT: Read this MSDS before handling & disposing of this product.
Pass this information on to employees, customers, & users of this product.

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

PRODUCT IDENTITY: DENATURED ALCOHOL
COMPANY IDENTITY: CSD/STARTEX
COMPANY ADDRESS: P O BOX 3087
COMPANY CITY: CONROE, TX 77305
COMPANY PHONE: 1-936-228-0865
CHEMTREC PHONE: 1-800-424-9300

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

CONTAINS: 65-75% ETHANOL (64-17-5) [200-578-6],
15-25% METHANOL (67-56-1) [200-659-6],
0- 5% ETHYL ACETATE (141-78-6) [205-500-4],
0- 1% HEPTANE (142-82-5) [205-563-8]

Number in parentheses is CAS #, number in brackets is European EC #.

SECTION 3. HAZARDS IDENTIFICATION

RISK STATEMENTS:

R11 Highly Flammable.
R18 In use, may form flammable/explosive vapor-air mixture.
R41 Risk of serious damage to eyes.
R65 Harmful: may cause lung damage if swallowed.
R36/37/38 Irritating to eyes, respiratory system and skin.
R39/25 Toxic: danger of very serious irreversible effects if swallowed.

SAFETY STATEMENTS:

S7 Keep container tightly closed.
S9 Keep container in a well-ventilated place.
S16 Keep away from sources of ignition. No smoking.
S23 Do not breathe gas, fumes, vapor, or spray.
S24 Avoid contact with skin.
S29 Do not empty into drains.
S33 Take precautionary measures against static discharges.
S45 In case of accident, or if you feel unwell, seek medical advice immediately. (Show the label where possible).

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SECTION 4. FIRST AID MEASURES

EYE CONTACT:

For eyes, flush with plenty of water for 15 minutes & get medical attention.

SKIN CONTACT:

In case of contact with skin immediately remove contaminated clothing.
Wash thoroughly with soap & water. Wash contaminated clothing before reuse.

INHALATION:

After high vapor exposure, remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped give artificial respiration.

SWALLOWING:

Induce vomiting promptly using physician's instructions or by having patient stick finger down throat. After vomiting has been induced, give two teaspoonsful of baking soda in a glass of water. CALL A PHYSICIAN. Never give anything by mouth to an unconscious person. Have patient lie down & keep warm. Cover eyes to exclude light.

SECTION 5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

NFPA Class B extinguishers (Carbon Dioxide or foam) for Class I B liquid fires.

SPECIAL FIRE FIGHTING PROCEDURES

Water spray may be ineffective on fire but can protect fire-fighters & cool closed containers. Use fog nozzles if water is used.
Do not enter confined fire-space without full bunker gear.
(Helmet with face shield, bunker coats, gloves & rubber boots).
Use NIOSH approved positive-pressure self-contained breathing apparatus.

UNUSUAL EXPLOSION AND FIRE PROCEDURES

HIGHLY FLAMMABLE!! VAPORS CAN CAUSE FLASH FIRE

Keep container tightly closed.
Isolate from oxidizers, heat, sparks, electric equipment & open flame.
Closed containers may explode if exposed to extreme heat.
Applying to hot surfaces requires special precautions.
Empty container very hazardous! Continue all label precautions!

SECTION 6. ACCIDENTAL RELEASE MEASURES

CONTAINMENT TECHNIQUES

Stop spill at source. Dike area & contain.

CLEAN-UP PROCEDURES:

Clean up remainder with absorbent materials. Mop up & dispose of. Persons without proper protection should be kept from area until cleaned up.

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PRODUCT IDENTITY: DENATURED ALCOHOL
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SECTION 7. HANDLING AND STORAGE

HANDLING

Isolate from oxidizers, heat, sparks, electric equipment & open flame.
Use only with adequate ventilation. Avoid breathing of vapor or spray mist.
Avoid contact with skin & eyes.
Wear OSHA Standard goggles or face shield. Consult Safety Equipment Supplier.
Wear gloves, apron & footwear impervious to this material. Wash clothing before reuse.
Avoid free fall of liquid. Ground containers when transferring. Do not flame cut, saw, drill, braze, or weld. Empty container very hazardous! Continue all label precautions!

STORAGE

Do not store above 49 C/120 F. Store large amounts in structures made for OSHA Class I B liquids. Keep container tightly closed & upright when not in use to prevent leakage.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

RESPIRATORY EXPOSURE CONTROLS

A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z86.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

VENTILATION

LOCAL EXHAUST	: Necessary
MECHANICAL (GENERAL)	: Acceptable
SPECIAL	: None
OTHER	: None

PERSONAL PROTECTIONS:

Wear OSHA Standard goggles or face shield. Consult Safety Equipment Supplier.
Wear gloves, apron & footwear impervious to this material. Wash clothing before reuse.

WORK & HYGIENIC PRACTICES:

Provide readily accessible eye wash stations & safety showers.
Wash at end of each workshift & before eating, smoking or using the toilet.
Promptly remove clothing that becomes contaminated. Destroy contaminated leather articles. Launder or discard contaminated clothing.

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SECTION 9. PHYSICAL DATA

APPEARANCE : Liquid, Water-White
ODOR : Ester
BOILING RANGE : 63 75 79 C / 147 167 175 F
AUTO IGNITION TEMPERATURE : 293 C / 560 F (Lowest Component)
LOWER FLAMMABLE LIMIT IN AIR (% by vol): 4.9
FLASH POINT (TEST METHOD): -1 C / 29 F (TCC) (Lowest Component)
FLAMMABILITY CLASSIFICATION: Class I B
GRAVITY @ 68/68 F / 20/20 C :
API : 46.0
SPECIFIC GRAVITY (Water=1) : 0.797
POUNDS/GALLON : 6.639
VOC'S (>0.44 Lbs/Sq In) : 100.0 Vol. % / 797.0 g/L / 6.638 Lbs/Gal
TOTAL VOC'S (TVOC) : 100.0 Vol. % / 797.0 g/L / 6.638 Lbs/Gal
NONEXEMPT VOC'S (CVOC) : 100.0 Vol. % / 797.0 g/L / 6.638 Lbs/Gal
HAZARDOUS AIR POLLUTANTS (HAPS) : 23.7 Wt. % / 188.5 g/L / 1.570 Lbs/Gal
VAPOR PRESSURE (mm of Hg)@20 C 61.3
NONEXEMPT VOC PARTIAL PRESSURE (mm of Hg @ 20 C) 61.3
VAPOR DENSITY (air=1) : 1.5
WATER ABSORPTION : Appreciable
REFRACTIVE INDEX : 1.355

SECTION 10. STABILITY & REACTIVITY

STABILITY

Stable under normal conditions.

CONDITIONS TO AVOID

Isolate from oxidizers, heat, sparks, electric equipment & open flame.

MATERIALS TO AVOID

Isolate from strong oxidizers such as permanganates, chromates & peroxides.

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon Monoxide, Carbon Dioxide from burning.

HAZARDOUS POLYMERIZATION

Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

MATERIAL	CAS #	TWA (OSHA)	TLV (ACGIH)	HAP
Ethanol	64-17-5	1000 ppm	1000 ppm A4	No
Methanol	67-56-1	200 ppm S	200 ppm S	Yes
Ethyl Acetate	141-78-6	400 ppm	400 ppm	No
Heptane	142-82-5	500 ppm	400 ppm	No

In addition to EPA Hazardous Air Pollutants showing 'Yes' under "HAP" above, using manufacturers' data, based on EPA Method 311, the following EPA Hazardous Air Pollutants may be present in trace amounts (less than 0.1%):
Benzene

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SECTION 11. TOXICOLOGICAL INFORMATION (CONTINUED)

MATERIAL	CAS #	CEILING	STEL (OSHA/ACGIH)
Methanol	67-56-1	None Known	250 ppm
Heptane	142-82-5	None Known	500 ppm

ACUTE HAZARDS

EYE & SKIN CONTACT:

Primary irritation to skin, defatting, dermatitis.
Primary irritation to eyes, redness, tearing, blurred vision.
Liquid can cause eye irritation. Wash thoroughly after handling.

INHALATION:

Anesthetic. Irritates respiratory tract. Acute overexposure can cause serious nervous system depression. Vapor harmful. Breathing vapor can cause irritation.
Acute overexposure can cause damage to kidneys, blood, nerves, liver & lungs.
Repeated exposure over TLV can cause blindness.

SWALLOWING:

Can be fatal or cause blindness if swallowed. Cannot be made non-poisonous.
POISON ! Can cause irreversible nervous system damage & death.
Harmful or fatal if swallowed.
Swallowing can cause abdominal irritation, nausea, vomiting & diarrhea.

SUBCHRONIC HAZARDS/CONDITIONS AGGREGATED

CONDITIONS AGGREGATED

Chronic overexposure can cause damage to kidneys, blood, nerves, liver & lungs.
Persons with severe skin, liver or kidney problems should avoid use.

CHRONIC HAZARDS

CANCER, REPRODUCTIVE & OTHER CHRONIC HAZARDS:

Leukemia been reported in humans from Benzene.
This product contains less than 1 ppm of Benzene.
Not considered hazardous in such low concentrations.
Absorption thru skin may be harmful. Studies with laboratory animals indicate this product can cause damage to fetus.

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SECTION 12. ECOLOGICAL INFORMATION

MAMMALIAN INFORMATION:

MATERIAL	CAS #	LOWEST KNOWN LETHAL DOSE DATA
Methanol	67-56-1	LOWEST KNOWN LD50 (ORAL) 1000.0 mg/kg (Man)
Ethyl Acetate	141-78-6	LOWEST KNOWN LC50 (VAPORS) 1600 ppm (Rats)
Methanol	67-56-1	LOWEST KNOWN LD50 (SKIN) 20000.0 mg/kg (Rabbits)

AQUATIC ANIMAL INFORMATION:

The most sensitive known aquatic group to any component of this product is:
Goldfish 250 ppm/mg/L (24 hours). Keep out of sewers and natural water supplies.

MOBILITY

This material is a mobile liquid.

DEGRADABILITY

This product is partially biodegradable.

ACCUMULATION

This product does not accumulate or biomagnify in the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Recycle / dispose of observing national, regional, state, provincial and local health, safety & pollution laws.

If questions exist, contact the appropriate agencies.

SECTION 14. TRANSPORT INFORMATION

IF CONTAINER HAS > PRODUCT RQ (SEE SECTION 15) PUT "RQ," BEFORE SHIPPING NAME.

DOT SHIPPING NAME: Alcohols, n.o.s.

(Ethyl Alcohol, Methanol), 3, UN1987, PG-II

DRUM LABEL: (FLAMMABLE LIQUID)

IATA / ICAO: Alcohols, toxic, n.o.s.

(Ethyl Alcohol, Methanol), 3, UN1986, PG-II, POISON

IMO / IMDG: Alcohols, toxic, n.o.s.

(Ethyl Alcohol, Methanol), 3, UN1986, PG-II, POISON

EMERGENCY RESPONSE GUIDEBOOK NUMBER: 127

SECTION 15. REGULATORY INFORMATION

EPA REGULATION:

SARA SECTION 311/312 HAZARDS: Acute Health, Fire

All components of this product are on the TSCA list.

SARA Title III Section 313 Supplier Notification

This product contains the indicated <*> toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning & Community Right-To-Know Act of 1986 & of 40 CFR 372. This information must be included in all MSDSs that are copied and distributed for this material.

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SECTION 15. REGULATORY INFORMATION (CONTINUED)

SARA TITLE III INGREDIENTS	CAS#	WT. % (REG. SECTION)	RQ(LBS)
Ethanol	64-17-5	71 (311,312)	None
*Methanol	67-56-1	23 (311,312,313,RCRA)	5000
Ethyl Acetate	141-78-6	< 5 (311,312)	5000
Heptane	142-82-5	< 1 (311,312)	None

> 21140 LB / 9609 KG OF THIS PRODUCT IN 1 CONTAINER EXCEEDS THE "RQ" OF METHANOL.

Any release equal to or exceeding the RQ must be reported to the National Response Center (800-424-8802) and appropriate state and local regulatory agencies as described in 40 CFR 302.6 and 40 CFR 355.40 respectively. Failure to report may result in substantial civil and criminal penalties. State & local regulations may be more restrictive than federal regulations.

STATE REGULATIONS:

THIS PRODUCT MEETS REQUIREMENTS OF SOUTHERN CALIFORNIA AQMD RULE 443.1 & SIMILAR REGULATIONS

INTERNATIONAL REGULATIONS

The components of this product are listed on the chemical inventories of the following countries:
Australia, Canada, Europe (EINECS), Japan, Korea, United Kingdom.

SECTION 16. OTHER INFORMATION

HAZARD RATINGS:

HEALTH (NFPA): 1, HEALTH (HMIS): 3, FLAMMABILITY: 3, REACTIVITY: 0
This information is intended solely for the use of individuals trained in the NFPA & HMIS hazard rating systems.

EMPLOYEE TRAINING

Employees should be made aware of all hazards of this material (as stated in this MSDS) before handling it.

NOTICE

The supplier disclaims all expressed or implied warranties of merchantability or fitness for a specific use, with respect to the product or the information provided herein, except for conformation to contracted specifications. All information appearing herein is based upon data obtained from manufacturers and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency. Conditions of use are beyond our control, and therefore users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product. Users also assume all risks in regards to the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process.

**SAFETY DATA SHEET**

Science Applications International Corp.
155 Passaic Ave. Fairfield NJ 07004
Contract Number: SPW4AR-07-D-0003
Cage Code: 79343

Page: 1

Revision Date: 06/16/2011

Print Date: 8/17/2011

MSDS Number: R0000017

Version: 1.10

METHYL ETHYL KETONE
20023

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING
--

Nexeo Solutions	Regulatory Information Number	1-800-325-3751
PO Box 2458	Telephone	1-800-531-7106
Columbus, OH 43216	Emergency telephone number	1-855-639-3648

Product name	METHYL ETHYL KETONE
--------------	---------------------

Product code	20023
Product Use Description	No data

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: liquid, Colorless

CAUTION! FLAMMABLE LIQUID AND VAPOR. MAY AFFECT THE CENTRAL NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. MAY CAUSE EYE IRRITATION. MAY CAUSE SKIN AND RESPIRATORY TRACT IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE DERMATITIS AND BURNS.

Potential Health Effects**Exposure routes**

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion

Eye contact

Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin contact

Can cause skin irritation. Symptoms may include redness and burning of skin, and other skin damage. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, skin burns, and other skin damage.

Ingestion

SAFETY DATA SHEET

Revision Date: 06/16/2011

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MSDS Number: R0000017

Version: 1.10

METHYL ETHYL KETONE
20023

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

Inhalation

Breathing of vapor or mist is possible. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

Aggravated Medical Condition

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material:, Skin, lung (for example, asthma-like conditions)

Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:, stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness)

Target Organs

Based on animal studies, exposure to methyl ethyl ketone (MEK) increases the onset of peripheral neuropathy caused by exposure to methyl butyl ketone (MBK), and/or n-hexane, and/or ethyl butylketone. MEK alone has not been shown to cause peripheral neuropathy., Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals:, mild, reversible liver effects, mild, reversible kidney effects

Carcinogenicity

This material is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA).

Reproductive hazard

This material (or a component) has been shown to cause harm to the fetus in laboratory animal studies. Harm to the fetus occurs only at exposure levels that harm the pregnant animal. The relevance of these findings to humans is uncertain.

SAFETY DATA SHEET

Revision Date: 06/16/2011

Print Date: 8/17/2011

MSDS Number: R0000017

Version: 1.10

METHYL ETHYL KETONE
20023

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components	CAS-No.	Concentration
METHYL ETHYL KETONE	78-93-3	<=100%

4. FIRST AID MEASURES

Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Skin

Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is damaged, seek immediate medical attention. If skin is not damaged and symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Inhalation

If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

Notes to physician

Hazards: No information available.

Treatment: No information available.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

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Dry chemical, Carbon dioxide (CO2), Water spray

Hazardous combustion products

carbon dioxide and carbon monoxide

Precautions for fire-fighting

Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Water may be ineffective for extinguishment unless used under favorable conditions by experienced fire fighters. Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes.

NFPA Flammable and Combustible Liquids Classification

Flammable Liquid Class IB

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Ensure adequate ventilation.

Environmental precautions

Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not let product enter drains. Do not flush into surface water or sanitary sewer system. Local authorities should be advised if significant spillages cannot be contained.

Methods for cleaning up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Other information

Comply with all applicable federal, state, and local regulations.

7. HANDLING AND STORAGE

Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be

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observed. Warning. Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources. Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions.

Storage

Store in a cool, dry, ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

METHYL ETHYL KETONE		78-93-3
ACGIH	time weighted average	200 ppm
ACGIH	Short term exposure limit	300 ppm
NIOSH	Recommended exposure limit (REL):	200 ppm
NIOSH	Recommended exposure limit (REL):	590 mg/m3
NIOSH	Short term exposure limit	300 ppm
NIOSH	Short term exposure limit	885 mg/m3
OSHA Z1	Permissible exposure limit	200 ppm
OSHA Z1	Permissible exposure limit	590 mg/m3

General advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Eye protection

Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

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Skin and body protection

Wear normal work clothing including long pants, long-sleeved shirts and foot covering to prevent direct contact of the product with the skin. Launder clothing before reuse. If skin irritation develops, contact your facility health and safety professional or your local safety equipment supplier to determine the proper personal protective equipment for your use.

Wear resistant gloves (consult your safety equipment supplier).

Discard gloves that show tears, pinholes, or signs of wear.

Respiratory protection

A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	liquid
Form	no data available
Colour	Colorless
Odour	characteristic, pleasant, acetone-like
Boiling point/boiling range	175.26 °F / 79.59 °C
Melting point/range	-123.95 °F / -86.64 °C
Sublimation point	no data available
pH	no data available
Flash point	24.1 °F / -4.4 °C Tag closed cup
Ignition temperature	no data available
Evaporation rate	5.70 n-Butyl Acetate
Lower explosion limit/Upper explosion limit	1.8 %(V) / 10 %(V)
Particle size	no data available
Vapour pressure	12.132 kPa @ 77 °F / 25 °C
Relative vapour density	2.41 AIR=1
Density	0.806 g/cm ³ @ 68.00 °F / 20.00 °C 6.71 lb/gal @ 68 °F / 20 °C

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Bulk density	No data
Water solubility	partly soluble
Solubility(ies)	no data available
Partition coefficient: n-octanol/water	no data available
log Pow	0.29
Autoignition temperature	759 °F / 404 °C
Viscosity, dynamic	0.4 mPa.s
Viscosity, kinematic	no data available
Solids in Solution	no data available
Decomposition temperature	no data available
Burning number	no data available
Dust explosion constant	no data available
Minimum ignition energy	no data available

10. STABILITY AND REACTIVITY

Stability

Stable.

Conditions to avoid

Heat, flames and sparks.

Incompatible products

Amines, Copper, Copper alloys, strong alkalis, strong mineral acids, Strong oxidizing agents

Hazardous decomposition products

carbon dioxide and carbon monoxide

Hazardous reactions

Product will not undergo hazardous polymerization.

Thermal decomposition

No data

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity : LD 50 Rat : 2,300 - 3,500 mg/kg

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Acute inhalation toxicity : LC 50 Rat: 11,700 mg/l; 4 h

Acute dermal toxicity : LD 50 Rabbit:
> 5 g/kg

12. ECOLOGICAL INFORMATION

Biodegradability

METHYL ETHYL KETONE : no data available

Bioaccumulation

METHYL ETHYL KETONE : no data available

Ecotoxicity effects

Toxicity to fish

METHYL ETHYL KETONE : 96 h flow-through test LC 50 Fathead minnow
(Pimephales promelas): 3,130.00 - 3,320.00 mg/l ;
Mortality

Toxicity to daphnia and other aquatic invertebrates.

METHYL ETHYL KETONE : 48 h static test EC 50 Water flea (Daphnia magna):
4,025.00 - 6,440.00 mg/l Intoxication

Toxicity to algae

METHYL ETHYL KETONE : no data available

Toxicity to bacteria

METHYL ETHYL KETONE : no data available

Biochemical Oxygen Demand (BOD)

METHYL ETHYL KETONE : no data available

Chemical Oxygen Demand (COD)

METHYL ETHYL KETONE : no data available

Additional ecological information

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METHYL ETHYL KETONE : no data available

13. DISPOSAL CONSIDERATIONS

Waste disposal methods

Dispose of in accordance with all applicable local, state and federal regulations. Do not discharge effluent containing this product into lakes, streams, ponds or estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit, and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA. For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact NEXEO's Environmental Services Group at 800-637-7922.

14. TRANSPORT INFORMATION

REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT /LTD. QTY.
-----------	----------------------	---------------	--------------------	---------------	-----------------------------

U.S. DOT - ROAD

UN 1193	Methyl ethyl ketone	3		II	
---------	---------------------	---	--	----	--

U.S. DOT - RAIL

UN 1193	Methyl ethyl ketone	3		II	
---------	---------------------	---	--	----	--

U.S. DOT - INLAND WATERWAYS

UN 1193	Methyl ethyl ketone	3		II	
---------	---------------------	---	--	----	--

TRANSPORT CANADA - ROAD

UN 1193	Methyl ethyl ketone	3		II	
---------	---------------------	---	--	----	--

TRANSPORT CANADA - RAIL

UN 1193	Methyl ethyl ketone	3		II	
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TRANSPORT CANADA - INLAND WATERWAYS

UN	1193	Methyl ethyl ketone	3	II
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INTERNATIONAL MARITIME DANGEROUS GOODS

UN	1193	Methyl ethyl ketone	3	II
----	------	---------------------	---	----

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

UN	1193	Methyl ethyl ketone	3	II
----	------	---------------------	---	----

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

UN	1193	Methyl ethyl ketone	3	II
----	------	---------------------	---	----

MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

UN	1193	METILETILCETONA	3	II
----	------	-----------------	---	----

*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

15. REGULATORY INFORMATION

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.	
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SARA Hazard Classification

Fire Hazard
Acute Health Hazard

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

New Jersey RTK Label Information

METHYL ETHYL KETONE

78-93-3

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Pennsylvania RTK Label Information

METHYL ETHYL KETONE

78-93-3

Notification status

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 133)	y (positive listing)
China. Inventory of Existing Chemical Substances	y (positive listing)
Japan. Kashin-Hou Law List	y (positive listing)
US. Toxic Substances Control Act	y (positive listing)
Japan. Industrial Safety & Health Law (ISHL) List	y (positive listing)
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand	y (positive listing)
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	y (positive listing)
Australia. Industrial Chemical (Notification and Assessment) Act	y (positive listing)
Korea. Toxic Chemical Control Law (TCCL) List	y (positive listing)

Reportable quantity - Product

US. EPA CERCLA Hazardous Substances (40 CFR 302) 5000 lbs

Reportable quantity-Components

METHYL ETHYL KETONE 78-93-3 5000 lbs

	HMIS	NFPA
Health	2	1
Flammability	3	3
Physical hazards	0	
Instability		0
Specific Hazard	--	--

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the

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information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by NEXEO's Environmental Health and Safety Department (1-800-325-3751).

P/N: TT-735A

6810-008556160

HCXHBX

COMPANY IDENTITY: CSD/STARTEX
PRODUCT IDENTITY: ISOPROPYL ALCOHOL

(TT-I-735A)

DATE: 1/20/10
PAGE 1 OF 7

5 gal. CN

MATERIAL SAFETY DATA SHEET

This Material Safety Data Sheet conforms to the requirements of ANSI Z400.1.

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (HAZARD COMMUNICATION STANDARD)

IMPORTANT: Read this MSDS before handling & disposing of this product.

Pass this information on to employees, customers, & users of this product.

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

PRODUCT IDENTITY: ISOPROPYL ALCOHOL (TT-I-735A)
COMPANY IDENTITY: CSD/STARTEX
COMPANY ADDRESS: P O BOX 3087
COMPANY CITY: CONROE, TX 77305
COMPANY PHONE: 1-936-228-0865
CHEMTREC PHONE: 1-800-424-9300

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

CONTAINS: 99-100% ISOPROPANOL (67-63-0) [200-661-7]
Number in parentheses is CAS #, number in brackets is European EC #.

SECTION 3. HAZARDS IDENTIFICATION

RISK STATEMENTS:

R36/37/38 Irritating to eyes, respiratory system and skin.
R11 Highly Flammable.
R67 Vapors may cause drowsiness and dizziness.

SAFETY STATEMENTS:

S24/25 Avoid contact with skin and eyes.
S7 Keep container tightly closed.
S16 Keep away from sources of ignition. No smoking.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

SECTION 4. FIRST AID MEASURES

EYE CONTACT:

For eyes, flush with plenty of water for 15 minutes & get medical attention.

SKIN CONTACT:

In case of contact with skin immediately remove contaminated clothing.
Wash thoroughly with soap & water. Wash contaminated clothing before reuse.

INHALATION:

After high vapor exposure, remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, trained personnel should immediately begin artificial respiration. If the heart has stopped, trained personnel should immediately begin cardiopulmonary resuscitation (CPR).

SWALLOWING:

Rinse mouth. Do NOT induce vomiting. GET MEDICAL ATTENTION IMMEDIATELY.
Do NOT give liquids to an unconscious or convulsing person.

SECTION 5. FIRE FIGHTING MEASURES

FIRE & EXPLOSION PREVENTIVE MEASURES

NO open flames, NO sparks, & NO smoking. Above flash point, use a closed system, ventilation, explosion-proof electrical equipment, lighting.

EXTINGUISHING MEDIA

Use dry powder, alcohol-resistant foam, water in large amounts, carbon dioxide.

SPECIAL FIRE FIGHTING PROCEDURES

Water spray may be ineffective on fire but can protect fire-fighters & cool closed containers. Use fog nozzles if water is used.
Do not enter confined fire-space without full bunker gear.
(Helmet with face shield, bunker coats, gloves & rubber boots).
Use NIOSH approved positive-pressure self-contained breathing apparatus.

UNUSUAL EXPLOSION AND FIRE PROCEDURES

HIGHLY FLAMMABLE!! VAPORS CAN CAUSE FLASH FIRE

Keep container tightly closed.
Isolate from oxidizers, heat, sparks, electric equipment & open flame.
Closed containers may explode if exposed to extreme heat.
Applying to hot surfaces requires special precautions.
Empty container very hazardous! Continue all label precautions!

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE MEASURES:

Vapors may ignite explosively & spread long distances. Prevent vapor buildup.
Keep unprotected personnel away.
Remove all ignition sources.
Filter respirator for organic vapors.

CONTAINMENT AND CLEAN-UP MEASURES:

Stop spill at source. Dike and contain.
Collect leaking liquid in sealable containers.
Absorb remaining liquid in sand or inert absorbent.
Wash away remainder with plenty of water.

SECTION 7. HANDLING AND STORAGE

HANDLING

Isolate from oxidizers, heat, sparks, electric equipment & open flame.
Use only with adequate ventilation. Avoid breathing of vapor or spray mist.
Avoid contact with skin & eyes.
Wear OSHA Standard goggles or face shield. Consult Safety Equipment Supplier.
Wear gloves, apron & footwear impervious to this material. Wash clothing before reuse.
Avoid free fall of liquid. Ground containers when transferring. Do not flame cut, saw, drill, braze, or weld. Empty container very hazardous! Continue all label precautions!

STORAGE

Keep in fireproof surroundings. Keep separated from strong oxidants. Keep cool. Do not store above 49 C/120 F. Keep container tightly closed & upright when not in use to prevent leakage.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

RESPIRATORY EXPOSURE CONTROLS

A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z86.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

VENTILATION

LOCAL EXHAUST : Necessary
MECHANICAL (GENERAL) : Acceptable
SPECIAL : None
OTHER : None

Please refer to ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

PERSONAL PROTECTIONS:

Wear OSHA Standard goggles or face shield. Consult Safety Equipment Supplier.
Wear gloves, apron & footwear impervious to this material. Wash clothing before reuse.

WORK & HYGIENIC PRACTICES:

Provide readily accessible eye wash stations & safety showers.
Wash at end of each workshift & before eating, smoking or using the toilet.
Promptly remove clothing that becomes contaminated. Destroy contaminated leather articles. Launder or discard contaminated clothing.

SECTION 9. PHYSICAL DATA

APPEARANCE :				Liquid, Water-White
ODOR :				Alcohol
BOILING RANGE :		80 81 83 C /	177 179 182 F	
AUTO IGNITION TEMPERATURE :		398 C /	750 F	(Lowest Component)
LOWER FLAMMABLE LIMIT IN AIR (% by vol):				2.0
FLASH POINT (TEST METHOD):				13 C / 56 F (TCC)
FLAMMABILITY CLASSIFICATION:				Class I B
GRAVITY @ 68/68 F / 20/20 C :				
API :				48.3
SPECIFIC GRAVITY (Water=1) :				0.787
POUNDS/GALLON :				6.556
VOC'S (>0.44 Lbs/Sq In) :	100.0 Vol. % /	787.0 g/L /		6.555 Lbs/Gal
TOTAL VOC'S (TVOC) :	100.0 Vol. % /	787.0 g/L /		6.555 Lbs/Gal
NONEXEMPT VOC'S (CVOC) :	100.0 Vol. % /	787.0 g/L /		6.555 Lbs/Gal
HAZARDOUS AIR POLLUTANTS (HAPS) :	0.0 Wt. % /	0.0 g/L /		0.000 Lbs/Gal
VAPOR PRESSURE (mm of Hg)@20 C				33.0
NONEXEMPT VOC PARTIAL PRESSURE (mm of Hg @ 20 C)				33.0
VAPOR DENSITY (air=1) :				2.1
WATER ABSORPTION :				Complete
REFRACTIVE INDEX :				1.378

SECTION 10. STABILITY & REACTIVITY

STABILITY

Stable under normal conditions.

CONDITIONS TO AVOID

Isolate from oxidizers, heat, sparks, electric equipment & open flame.

MATERIALS TO AVOID

Reacts with strong oxidants, causing fire & explosion hazard.

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon Monoxide, Carbon Dioxide from burning.

HAZARDOUS POLYMERIZATION

Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

MATERIAL	CAS #	TWA (OSHA)	TLV (ACGIH)	HAP
Isopropanol	67-63-0	400 ppm	200 ppm A4	No

This product contains no EPA Hazardous Air Pollutants (HAP) in amounts > 0.1%.

SECTION 11. TOXICOLOGICAL INFORMATION (CONTINUED)

MATERIAL	CAS #	CEILING	STEL (OSHA/ACGIH)
Isopropanol	67-63-0	None Known	400 ppm

ACUTE HAZARDS

EYE & SKIN CONTACT:

Primary irritation to skin, defatting, dermatitis.
Primary irritation to eyes, redness, tearing, blurred vision.
Liquid can cause eye irritation. Wash thoroughly after handling.

INHALATION:

Anesthetic. Irritates respiratory tract. Acute overexposure can cause serious nervous system depression. Vapor harmful. Breathing vapor can cause irritation. Acute overexposure can cause harm to kidneys, blood, nerves, liver, lungs.

SWALLOWING:

Swallowing can cause abdominal irritation, nausea, vomiting & diarrhea.

SUBCHRONIC HAZARDS/CONDITIONS AGGRAVATED

CONDITIONS AGGRAVATED

Chronic overexposure can cause harm to kidneys, blood, nerves, liver, lungs. Persons with severe skin, liver or kidney problems should avoid use.

CHRONIC HAZARDS

CANCER, REPRODUCTIVE & OTHER CHRONIC HAZARDS:

This product has no carcinogens listed by IARC, NTP, NIOSH, OSHA or ACGIH, as of this date, greater or equal to 0.1%.

SECTION 12. ECOLOGICAL INFORMATION

MAMMALIAN INFORMATION:

MATERIAL	CAS #	LOWEST KNOWN LETHAL DOSE DATA
Isopropanol	67-63-0	LOWEST KNOWN LD50 (ORAL) 5840.0 mg/kg (Rats)
Isopropanol	67-63-0	LOWEST KNOWN LC50 (VAPORS) 16000 ppm (Rats)
Isopropanol	67-63-0	LOWEST KNOWN LD50 (SKIN) 16400.0 mg/kg (Rabbits)

AQUATIC ANIMAL INFORMATION:

The most sensitive known aquatic group to any component of this product is:
Chub 1000 ppm or mg/L (24 hour exposure).
Keep out of sewers and natural water supplies.

MOBILITY

This material is a mobile liquid.

DEGRADABILITY

This product is completely biodegradable.

ACCUMULATION

This product does not accumulate or biomagnify in the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Processing, use or contamination may change the waste management options.
Recycle / dispose of observing national, regional, state, provincial and local
health, safety & pollution laws. If in doubt, contact appropriate agencies.

SECTION 14. TRANSPORT INFORMATION

DOT SHIPPING NAME: Isopropyl alcohol, 3, UN1219, PG-II
DRUM LABEL: (FLAMMABLE LIQUID)
IATA / ICAO: Isopropyl alcohol, 3, UN1219, PG-II
IMO / IMDG: Isopropyl alcohol, 3, UN1219, PG-II
EMERGENCY RESPONSE GUIDEBOOK NUMBER: 129

SECTION 15. REGULATORY INFORMATION

EPA REGULATION:

SARA SECTION 311/312 HAZARDS: Acute Health, Fire

All components of this product are on the TSCA list.
This material contains no known products restricted under SARA Title III,
Section 313 in amounts greater or equal to 1%.

COMPANY IDENTITY: CSD/STARTEX
PRODUCT IDENTITY: ISOPROPYL ALCOHOL

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DATE: 1/20/10
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SECTION 15. REGULATORY INFORMATION (CONTINUED)

STATE REGULATIONS:

THIS PRODUCT MEETS REQUIREMENTS OF SOUTHERN
CALIFORNIA AQMD RULE 443.1 & SIMILAR REGULATIONS

INTERNATIONAL REGULATIONS

The components of this product are listed on the chemical
inventories of the following countries:
Australia, Canada, Europe (EINECS), Japan, Korea, United Kingdom.

SECTION 16. OTHER INFORMATION

HAZARD RATINGS:

HEALTH (NFPA): 1, HEALTH (HMIS): 2, FLAMMABILITY: 3, REACTIVITY: 0
This information is intended solely for the use of individuals
trained in the NFPA & HMIS hazard rating systems.

EMPLOYEE TRAINING

See Section 3 for Risk & Safety Statements. Employees should be made aware
of all hazards of this material (as stated in this MSDS) before handling it.

NOTICE

The supplier disclaims all expressed or implied warranties of merchantability
or fitness for a specific use, with respect to the product or the information
provided herein, except for conformation to contracted specifications.
All information appearing herein is based upon data obtained from manufacturers
and/or recognized technical sources. While the information is believed to be
accurate, we make no representations as to its accuracy or sufficiency.
Conditions of use are beyond our control, and therefore users are responsible
for verifying the data under their own operating conditions to determine
whether the product is suitable for their particular purposes and they assume
all risks of their use, handling, and disposal of the product. Users also
assume all risks in regards to the publication or use of, or reliance upon,
information contained herein.
This information relates only to the product designated herein, and does not
relate to its use in combination with any other material or process.

ISOPROPYL ALCOHOL (ANHYDROUS)

Gen. Variant: SDS_AMER

Version 1.5

Revision Date 23.11.2021

Print Date 25.01.2022

SDS No.: BE104

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Trade name : ISOPROPYL ALCOHOL (ANHYDROUS)
CAS Number: : 67-63-0
Chemical characterization : C3 Alcohol
Chemical name : Isopropyl Alcohol
Synonyms : IPA, Isopropanol, 2-Propanol, Secondary propyl alcohol

Identified uses : Solvent; Additive
De-icing and anti-icing applications; Antifreeze/coolant.;
Cosmetics, personal care products

Prohibited uses : Pharmaceutical excipient; Active pharmaceutical ingredient
(API); Tobacco; Electronic cigarettes (E-cigarettes); Cannabis
Direct Food additives

Company Address

Lyondell Chemical Company
LyondellBasell Tower, Suite 300
1221 McKinney St.
P.O. Box 2583
Houston Texas 77252-2583

Company Telephone

Customer Service 888 777-0232
product.safety@lyb.com

Emergency telephone number

LYONDELL 800-245-4532

E-mail address : product.safety@lyb.com
Responsible/issuing person

2. HAZARDS IDENTIFICATION

GHS-Classification

Flammable liquids	Category 2
Acute toxicity	Category 5
Aspiration hazard	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity - single exposure	Category 3

GHS-Labeling

Symbol(s) :



ISOPROPYL ALCOHOL (ANHYDROUS)

Gen. Variant: SDS_AMER

Version 1.5

Revision Date 23.11.2021

Print Date 25.01.2022

SDS No.: BE104

- Signal word : Danger
- Hazard Statements : H225 Highly flammable liquid and vapour.
H303 May be harmful if swallowed.
H305 May be harmful if swallowed and enters airways.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
- Precautionary Statements : **Prevention:**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- Response:**
P370 + P378 In case of fire: Use dry chemical, carbon dioxide, water spray, or alcohol-resistant foam.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P330 Rinse mouth.
- Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

Repeated contact with neat product may dry the skin causing cracking and/or fissuring.

3. COMPOSITION/INFORMATION ON INGREDIENTS**Substances****Components**

Chemical name	CAS-No. EC-No.	Weight %	Component Type
Isopropyl Alcohol	67-63-0	>= 99.8 %	A
Ethyl alcohol	64-17-5	<=0.15 %	C

Key:

(A) Substance

(C) Impurity

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4. FIRST AID MEASURES

- General advice : Consult a physician/doctor if necessary.
Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid.
Show this material safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If overcome by exposure, remove victim to fresh air immediately.
Give oxygen or artificial respiration as needed.
Seek medical attention if discomfort persists.
- In case of skin contact : Take off contaminated clothing and wash before reuse.
Wash skin thoroughly with mild soap and water.
Flush with lukewarm water for 15 minutes.
If sticky, use waterless cleaner first.
Seek medical attention if ill effect or irritation develops.
- In case of eye contact : Immediately flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower lids. If pain or irritation persists, promptly obtain medical attention.
- If swallowed : If product is ingested, do not induce vomiting and contact a physician or Poison Control Center.

Notes to physician

- Symptoms : Inhalation of very high concentrations may cause asphyxia, anesthesia, CNS depression (primarily fatigue, dizziness and loss of concentration, with collapse, coma and death in cases of severe overexposure), and possible cardiac sensitization.
- Hazards : May be harmful if swallowed.
May be harmful if swallowed and enters airways.
Causes serious eye irritation.
May cause drowsiness or dizziness.
- Treatment : Treat symptomatically.
Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

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5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : SMALL FIRE: Use dry chemicals, CO₂, water spray or alcohol-resistant foam. LARGE FIRE: Use water spray, water fog or alcohol-resistant foam.
- Unsuitable extinguishing media : WARNING - Water may be ineffective unless used under favorable conditions by experienced fire fighters trained in fighting all types of flammable liquid fires. Water can be used to cool and protect exposed material.
- Specific hazards during fire fighting : Releases flammable vapors below normal ambient temperatures.
Fine sprays/mists may be combustible at temperatures below normal flash point.
Vapors may be heavier than air.
May travel long distances along the ground before igniting and flashing back to vapor source.
When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined.
Diluting with water may not suffice to raise flash point above ambient temperatures.
Water may be ineffective in firefighting due to low flash point. Although water soluble, may not be practical to extinguish fire by water dilution.
Move containers from fire area if it can be done without risk.
Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
Cool containers with flooding quantities of water until well after fire is out.
Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
Always stay away from tanks engulfed in fire.
For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.
- Special protective equipment for fire-fighters : Wear positive pressure self-contained breathing apparatus (SCBA).
Structural firefighter's protective clothing will only provide limited protection.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Avoid direct contact with released material. Stay upwind.
Eliminate all sources of ignition.

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Evacuate personnel to safe areas.
Prevent further leakage or spillage if safe to do so.

Environmental precautions : Do not allow contact with soil, surface or ground water.
Do not flush into surface water or sanitary sewer system.

Methods for containment /
Methods for cleaning up : Extremely flammable liquid.
Release causes immediate fire/explosion hazard.
Liquids/vapors may ignite.
Extinguish all ignition sources.
All equipment used when handling this product must be grounded.
Do not touch or walk through spilled material.
Stop leak if you can do it without risk.
Prevent entry into waterways, sewers, basements or confined areas.
A vapor suppressing foam may be used to reduce vapors.
Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
Use clean non-sparking tools to collect absorbed material.
Dike large spills and place materials in salvage containers.
Water spray may reduce vapor; but may not prevent ignition in closed spaces.

7. Handling and storage**Precautions for safe handling**

Advice on safe handling : For industrial use only.
Keep container tightly closed when not in use.
Check atmosphere for explosiveness and oxygen deficiencies.
Extinguish all ignition sources.
Containers must be properly grounded before beginning transfer.
Use only non-sparking tools.
Carefully vent any internal pressure before removing closure.
Wear recommended personal protective equipment.
All equipment must conform to applicable electrical code.
Isolate, vent, drain, wash and purge systems or equipment before maintenance or repair.
Handle empty containers with care; vapor residue may be flammable/explosive.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Steel drums are recommended for packaging.
Store only in tightly closed, properly vented containers away

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from heat, sparks, open flame and strong oxidizing agents.
Store closed drums with bung in up position.
Do not store this material in aluminum containers.
Material may attack some forms of plastic, aluminum, rubber
and coatings.

Specific end use(s)

: See Section 1.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters****Ingredients with workplace control parameters****Occupational Exposure Limits**

Components	CAS-No.	Type	Limit Value	Basis Revision Date	Additional Information
Isopropyl Alcohol	67-63-0	STEL	400 ppm	US (ACGIH) 2012	
Isopropyl Alcohol	67-63-0	TWA	200 ppm	US (ACGIH) 2012	
Ethyl alcohol	64-17-5	STEL	1,000 ppm	US (ACGIH) 2012	

Consult local authorities for acceptable exposure limits.

Biological Exposure Indices

Components	CAS- No.	Control parameters	Biological specimen	Sampling time	Concentration	Basis
Isopropyl Alcohol	67-63-0	Acetone	urine	end of shift at end of workweek	40 mg/l	ACGIH_BEI S
Remarks: background, nonspecific.						

Exposure controls**Engineering measures**

No special ventilation is recommended under anticipated conditions of normal use beyond that needed for normal comfort control.

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Personal protective equipment

Respiratory protection : If exposure can potentially exceed the exposure limit(s), respiratory protection recommended or approved by appropriate local, state or international agency must be used.

Hand protection : Wear chemical resistant gloves such as:
Butyl rubber.
Nitrile.
or
Viton(TM).

Eye and face protection : Eye protection such as chemical splash goggles and/or face shield must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor.

Skin and body protection : Not normally considered a skin hazard.
Where use can result in skin contact, practice good personal hygiene.
The equipment must be cleaned thoroughly after each use.

Hygiene measures : Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use.
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Use good personal hygiene practices.
Wash hands before eating, drinking, smoking, or using toilet facilities.
Take off contaminated clothing and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid
Color : Clear, colorless.
Odor : Medicinal odor analogous to rubbing alcohol.
Odor Threshold : ~ 200 ppm
Flash point : 12 °C
Method: (TCC)
Ignition temperature : 399 °C

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Lower explosion limit	: 2 vol%
Upper explosion limit	: 12 vol%
Flammability (solid, gas)	: Not applicable
Oxidizing properties	: Not considered an oxidizing agent.
Autoignition temperature	: ~ 399 °C
Molecular weight	: 60.09 g/mol
Decomposition temperature	: not determined
Melting point/freezing point	: -88 °C
Boiling point/boiling range	: 82 °C at 1,013 hPa
Vapor pressure	: 44 hPa at 20 °C
Density	: 0.79 g/cm ³ at 20 °C (Water = 1.0 at 4°C (39.2°F))
Water solubility	: Miscible
Partition coefficient: n-octanol/water	: log Pow: 0.05 at 25 °C
Viscosity, dynamic	: 2.4 mPa.s at 20 °C
Viscosity, kinematic	: 2.6 mm ² /s at 25 °C
Relative vapor density	: 2.07 at 15 - 20 °C (Air = 1.0)
Explosive properties	: Not explosive
Other Information	: No additional information available.

10. STABILITY AND REACTIVITY

Reactivity : Will not occur.

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Chemical stability	: Stable under recommended storage conditions.
Hazardous reactions	: Will not occur.
Conditions to avoid	: Heat, sparks, open flame, other ignition sources, and oxidizing conditions.
Materials to avoid	: Strong oxidizing agents. Acetaldehyde. Chlorine. Ethylene Oxide. Acids Isocyanates.
Hazardous decomposition products	: Not expected to decompose under normal conditions.
Thermal decomposition	: Incomplete combustion will form carbon monoxide and other toxic vapors.

11. TOXICOLOGICAL INFORMATION

Product Summary : The below given information is based on the assessment of the product including impurities.

Acute toxicity

Acute oral toxicity : Classified
May be harmful if swallowed.

: LD50: 4,396 mg/kg
Species: Rat

: Ingestion may cause gastrointestinal effects (pain, nausea, vomiting, hemorrhage), hypothermia, cardiac effects (low blood pressure, shock and cardiac arrest), liver changes, kidney damage, and CNS effects (headache, dizziness, sleepiness, coma and death).

Acute inhalation toxicity : Based on acute toxicity values, not classified.

: LC50: 46.6 mg/l
Exposure time: 8 HOURS
Species: Rat

: High vapor concentrations may cause irritation of the eyes, nose, and/or throat, changes to the liver, lung, spleen, and brain, and central nervous system depression (ataxia, dizziness, narcosis, and muscle relaxation, with respiratory

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arrest and death in cases of severe over exposure).

Acute dermal toxicity

: Based on acute toxicity values, not classified.

: LD50: 12,870 mg/kg
Species: Rabbit.

: High exposures may cause systemic toxicity (CNS depression and death).

Skin corrosion/irritation

: Based on skin irritation values, not classified.

Liquid may cause slight skin irritation.

Exposure of liquid to the underdeveloped skin of premature infants may cause severe irritation.

Serious eye damage/eye irritation

: Classified

Causes serious eye irritation.

Respiratory or skin sensitization

: Respiratory sensitization

Not classified

No study available.

: Skin sensitization

Not classified

No adverse effect observed.

Chronic toxicity**Carcinogenicity**

: Not classified

Ethanol possesses properties that indicate a carcinogenicity hazard for human health but these are manifest only at doses associated with consumption of alcoholic beverages.

In the context of an industrial chemical, these hazards do not warrant concern as these are not likely to result from the manufacture and use of ethanol and ethanol containing products.

Germ cell mutagenicity

: Not classified

No adverse effect observed.

Reproductive toxicity**Effects on fertility /**

: Not classified

Effects on or via lactation

Ethanol possesses properties that indicate a lactation hazard

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for human health but these are manifest only at doses associated with consumption of alcoholic beverages. In the context of an industrial chemical, these hazards do not warrant concern as these are not likely to result from the manufacture and use of ethanol and ethanol containing products.

- Effects on Development** : Not classified
Ethanol possesses properties that indicate a developmental hazard for human health but these are manifest only at doses associated with consumption of alcoholic beverages. In the context of an industrial chemical, these hazards do not warrant concern as these are not likely to result from the manufacture and use of ethanol and ethanol containing products.
- Target Organ Systemic Toxicant - Single exposure** : Classified, May cause drowsiness or dizziness.
: Exposure routes: Inhalation, Oral, Dermal
Target Organs: Central nervous system
- Target Organ Systemic Toxicant - Repeated exposure** : Based on repeated exposure toxicity values, not classified.
- Aspiration hazard** : Classified
May be harmful if swallowed and enters airways.

12. Ecological information**Ecotoxicology Assessment**

- Short-term (acute) aquatic hazard** : Based on acute aquatic toxicity values, not classified.
- Long-term (chronic) aquatic hazard** : Not classified, based on readily biodegradability and low acute toxicity.
- Toxicity to fish** : Low acute toxicity to fish
- Toxicity to daphnia and other aquatic invertebrates** : Low acute toxicity to aquatic invertebrates.
- Toxicity to algae** : Low toxicity to algae.
- Toxicity to bacteria** : Low toxicity to sewage microbes.

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Toxicity to fish (Chronic toxicity) : Chronic toxicity to fish is expected to be low.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Chronic toxicity expected to be low.

Persistence and degradability

Biodegradability : Biodegradation: 86 - 94 %
Exposure time: 14 d
Rapidly degradable.
(After two weeks in a ready biodegradability test)

Stability in soil ethyl alcohol : Low potential for soil adsorption expected

Bioaccumulative potential

Bioaccumulation : Bioconcentration factor (BCF): 3.16
This material is not expected to bioaccumulate.

Mobility in soil

Distribution among environmental compartments : Type: Stability in water
Initially partitioning mainly to water and air.

: Type: Stability in soil
Volatilization from water or soil surfaces is expected to be limited.

Other adverse effects

Environmental fate and pathways : No additional information available.

Other information

Additional ecological information : No additional information available.

13. Disposal considerations**Waste treatment methods**

Product : Contaminated product, soil, water, container residues and spill cleanup materials may be hazardous wastes.

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Comply with applicable local, state or international regulations concerning solid or hazardous waste disposal and/or container disposal.

14. TRANSPORT INFORMATION**IMDG**

UN number : 1219
 Description of the goods : ISOPROPANOL
 Class : 3
 Packing group : II
 Labels : 3
 EmS Number 1 : F-E
 EmS Number 2 : S-D
 Marine pollutant : no

BLG (MARPOL Annex II)

Description of the goods : ISOPROPYL ALCOHOL
 Pollution category : Z
 Ship type : NONE

IATA

UN number : 1219
 Description of the goods : ISOPROPANOL
 Class : 3
 Packing group : II
 Labels : 3
 Environmentally hazardous : no

15. REGULATORY INFORMATION**Other international regulations****Global Inventory Status**

The ingredients of this product are compliant with the following chemical inventory requirements or exemptions.

*Additional Explanatory Status Statements follow the table, as necessary.

Country/Region	Inventory	Status Description
Australia	AICS	Compliant
Canada	DSL	Compliant
China	IECSC	Compliant
Europe	REACH	See REACH Compliance Statement
Japan	ENCS	Compliant

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Korea	KECI	Compliant
New Zealand	NZIoC	Compliant
Philippines	PICCS	Compliant
United States of America	TSCA	Compliant
Taiwan	TCSCA	Compliant

REACH status

If the product has been purchased from any company of the LyondellBasell group of companies registered in the European Union, we confirm that the chemical substance in this product has been registered under REACH, in accordance with the deadlines set forth in REACH. (Regulation (EU) No. 1907/2006)

Contact product.safety@lyb.com for additional global inventory information.

16. OTHER INFORMATION**Material safety datasheet sections which have been updated:**

Revised Section(s): 1

Disclaimer

Information in this document is accurate to the best of our knowledge at the date of publication. The document is designed to provide users general information for safe handling, use, processing, storage, transportation, disposal and release and does not constitute any warranty or quality specification, either express or implied, including any warranty of merchantability or fitness for any particular purpose. Users shall determine whether the product is suitable for their use and can be used safely and legally.

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The Trade Name referenced in section 1 is a trademark owned or used by the LyondellBasell family of companies.

Numerical Data Presentation

The presentation of numerical data, such as that used for physical and chemical properties and toxicological values, is expressed using a comma (,) to separate digits into groups of three and a period (.) as the decimal marker. For example, 1,234.56 mg/kg = 1 234,56 mg/kg.

Language Translations

The information presented in this document has been translated from English by a vendor LyondellBasell believes to be reliable. LyondellBasell and its vendor have made a good-faith

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effort to verify the accuracy of the translation, but assume no liability or other responsibility for any errors that may have occurred. Please refer to our web site (www.lyondellbasell.com) for the original document written in English.

End of Material Safety Data Sheet

Safety Data Sheet

Isopropanol TT-I-735A NOT.4 Grade A

Version 1.7

Revision Date: 11/23/2020

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Isopropanol TT-I-735A NOT.4 Grade A
CAS Name : 67-63-0

Recommended use of the chemical and restrictions on use

Recommended use : Alcohol solvent

Manufacturer or supplier's details

Company : Univar Solutions USA, Inc.
Address : 3075 Highland Pkwy Suite 200
 Downers Grove, IL 60515
 United States of America (USA)

Cage Code: : 4N760
NSN : 6810-00-543-7915, 6810-00-983-8551, 6810-00-286-5435,
 6810-01-454-9527

Emergency telephone number:
 Transport North America: CHEMTREC (1-800-424-9300)
 CHEMTREC INTERNATIONAL Tel # 703-527-3887

Additional Information: : Responsible Party: Product Compliance Department
 E-mail: SDSNA@univarsolutions.com
 SDS Requests: 1-855-429-2661
 Website: www.univarsolutions.com

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 2
 Eye irritation : Category 2A
 Specific target organ toxicity - single exposure : Category 3 (Central nervous system)

GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H225 Highly flammable liquid and vapour.
 H319 Causes serious eye irritation.
 H336 May cause drowsiness or dizziness.

Precautionary statements : **Prevention:**
 P210 Keep away from heat/sparks/open flames/hot surfaces.
 No smoking.
 P233 Keep container tightly closed.
 P240 Ground/bond container and receiving equipment.
 P241 Use explosion-proof electrical/ ventilating/ lighting equip-
 ment.

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P242 Use only non-sparking tools.
 P243 Take precautionary measures against static discharge.
 P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
 P264 Wash skin thoroughly after handling.
 P271 Use only outdoors or in a well-ventilated area.
 P280 Wear protective gloves/ eye protection/ face protection.
Response:
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P337 + P313 If eye irritation persists: Get medical advice/ attention.
 P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Storage:
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
 P403 + P235 Store in a well-ventilated place. Keep cool.
 P405 Store locked up.
Disposal:
 P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Hazardous components

CAS-No.	Chemical name	Weight percent
67-63-0	Isopropyl alcohol	90 - 100

Any Concentration shown as a range is due to batch variation.

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
 Show this safety data sheet to the doctor in attendance.
 Do not leave the victim unattended.

If inhaled : Consult a physician after significant exposure.
 If unconscious, place in recovery position and seek medical advice.

In case of skin contact : If on skin, rinse well with water.
 If on clothes, remove clothes.

In case of eye contact : Immediately flush eye(s) with plenty of water.
 Remove contact lenses.

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If swallowed	Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist. : Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Do not induce vomiting without medical advice.
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SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Alcohol-resistant foam Carbon dioxide (CO ₂) Dry chemical
Unsuitable extinguishing media	: High volume water jet
Specific hazards during fire-fighting	: Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	: Carbon oxides formaldehyde corrosive vapors Nitrogen oxides (NO _x)
Further information	: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
Special protective equipment for firefighters	: Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Environmental precautions	: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

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SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.
- Advice on safe handling : Avoid formation of aerosol. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Container may be opened only under exhaust ventilation hood. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

CAS-No.	Components	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
67-63-0	Isopropyl alcohol	TWA	200 ppm	ACGIH
		STEL	400 ppm	ACGIH
		TWA	400 ppm 980 mg/m ³	NIOSH REL
		ST	500 ppm 1,225 mg/m ³	NIOSH REL
		TWA	400 ppm 980 mg/m ³	OSHA Z-1
		TWA	400 ppm 980 mg/m ³	OSHA P0
		STEL	500 ppm 1,225 mg/m ³	OSHA P0

Personal protective equipment

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Respiratory protection	:	General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.
Hand protection		
Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection	:	Eye wash bottle with pure water Tightly fitting safety goggles Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	Clear, Colorless
Odour	:	alcohol-like, characteristic
Odour Threshold	:	200 ppm
pH	:	No data available
Freezing Point (Melting point/freezing point)	:	-88 °C (-126 °F)
Boiling Point (Boiling point/boiling range)	:	82 - 83 °C (180 - 181 °F) (1013 hPa)
Flash point	:	12 °C (54 °F) Method: Tag closed cup
Evaporation rate	:	< 3.9 (Butyl Acetate = 1)
Flammability (solid, gas)	:	No data available
Upper explosion limit	:	13 %(V)
Lower explosion limit	:	2 %(V)
Vapour pressure	:	33 mmHg @ 20 °C (68 °F)
Relative vapour density	:	< 2.1 @ 15 - 20 °C (59 - 68 °F)

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	(Air = 1.0)
Relative density	: 0.785 - 0.787 @ 20 °C (68 °F) Reference substance: (water = 1)
Density	: 0.785 - 0.787 g/cm ³ @ 20 °C (68 °F)
Solubility(ies)	
Water solubility	: completely miscible
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: log Pow: 0.05 @ 25 °C (77 °F)
Auto-ignition temperature	: 399 - 425 °C
Thermal decomposition	: No data available
Viscosity	
Viscosity, dynamic	: 2.4 mPa.s @ 20 °C (68 °F)
Viscosity, kinematic	: 2.66 mm ² /s @ 25 °C (77 °F)
Surface tension	: 22.7 mN/m, 20 °C

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Vapours may form explosive mixture with air.
Conditions to avoid	: Keep away from heat, flame, sparks and other ignition sources.
Incompatible materials	: Strong acids Aldehydes Oxidizing agents Rubber Oils Plastics Amines Metals Halogenated compounds Peroxides Bases
Hazardous decomposition products	: Carbon oxides Sulphur oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Skin corrosion/irritation

Components:

67-63-0:

Safety Data Sheet

Isopropanol TT-I-735A NOT.4 Grade A

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Species: Rabbit
Result: Irritating to skin.

Serious eye damage/eye irritation

Components:

67-63-0:

Species: Rabbit
Result: Irritating to eyes.

Carcinogenicity

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH

Confirmed animal carcinogen with unknown relevance to humans

64-17-5

Ethanol

STOT - single exposure

Components:

67-63-0:

Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

Further information

Product:

Remarks: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Concentrations substantially above the TLV value may cause narcotic effects.

Solvents may degrease the skin.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available

Persistence and degradability

No data available

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Isopropanol TT-I-735A NOT.4 Grade A

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Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

DOT (Department of Transportation):

UN1219, ISOPROPANOL, 3, II

IATA (International Air Transport Association):

UN1219, ISOPROPANOL, 3, II

IMDG (International Maritime Dangerous Goods):

UN1219, ISOPROPANOL, 3, II, Flash Point:12 °C(54 °F)

SECTION 15. REGULATORY INFORMATION

WHMIS Classification : B2: Flammable liquid
D2B: Toxic Material Causing Other Toxic Effects

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

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Isopropanol TT-I-735A NOT.4 Grade A

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- SARA 311/312 Hazards** : Fire Hazard
Acute Health Hazard
- SARA 302** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
- SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:
- | | |
|---------|-------------------|
| 67-63-0 | Isopropyl alcohol |
|---------|-------------------|

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

67-63-0	Isopropyl alcohol
---------	-------------------

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

67-63-0	Isopropyl alcohol	90 - 100 %
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Pennsylvania Right To Know

67-63-0	Isopropyl alcohol	90 - 100 %
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New Jersey Right To Know

67-63-0	Isopropyl alcohol	90 - 100 %
64-17-5	Ethanol	0.1 - 1 %

California Prop 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

- TSCA : On TSCA Inventory
- DSL : All components of this product are on the Canadian DSL
- AICS : On the inventory, or in compliance with the inventory
- NZIoC : On the inventory, or in compliance with the inventory
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory

Safety Data Sheet

Isopropanol TT-I-735A NOT.4 Grade A

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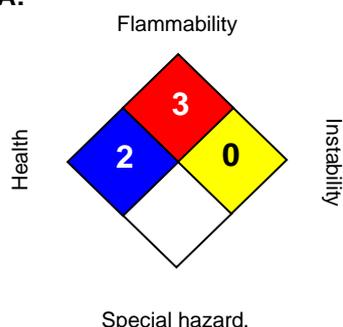
Revision Date: 11/23/2020

PHIL : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	3
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

The information accumulated is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made become available subsequently to the date hereof, we do not assume any responsibility for the results of its use. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Univar Solutions Product Compliance Department (1-855-429-2661) SDSNA@univarsolutions.com.

Revision Date : 11/23/2020

Material number:

16171207, 16056242, 16129124, 16056247, 16056246, 16056245, 16056244, 16056243, 16056241

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level

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Isopropanol TT-I-735A NOT.4 Grade A

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Revision Date: 11/23/2020

EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		

HCZQNW

GRAYMILLS CORPORATION
MATERIAL SAFETY DATA SHEET

NFPA HAZARD RATING	
HEALTH	1
FLAMMABILITY	2
REACTIVITY	0

Conforms to OSHA form No. 1218-0072
 Complies with OSHA hazard communication
 standard, 29CFR1910.1200

50 GL DR

IDENTITY:	Super Agitene 141	
CHEMICAL FAMILY:	Cleaning compound (Combustible Liquid)	6850-01-098-0264

SECTION I

MANUFACTURERS NAME:	Graymills Corporation	EMERGENCY #:	1-800-424-9300 (CHEMTREC)
ADDRESS:	3705 North Lincoln Ave. Chicago, Illinois 60613	DATE PREPARED:	July 1, 2008
		PREPARED BY:	Robert E. Schmalz, Jr.
		PREPARERS SIGNATURE:	<i>Robert E. Schmalz, Jr.</i>

SECTION II - INGREDIENTS/IDENTITY INFORMATION

SPECIFIC CHEMICAL IDENTITY/COMMON NAME(S):	OSHA PEL	ACGIH TLV	CAS# (*see note)	CONCENTRATION RANGE %
Aliphatic Petroleum Distillate	100 ppm	100 ppm	64742-88-7*	>97%
DPM (Dipropylene Glycol Methyl Ether)	100 ppm	100 ppm	34590-94-8	<1%

SECTION III- PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING RANGE (FAHRENHEIT):	360°- 410°F/182°-210°C	SPECIFIC GRAVITY (WATER=1):	.8
VAPOR PRESSURE (mm Hg @ 68°F/20°C):	.23	MELTING POINT:	N/A
VOC CONTENT:	800 g/l	EVAPORATION RATE (n-Butyl acetate=1):	.04
		pH:	N/A

SOLUBILITY IN WATER:	Insoluble
APPEARANCE & ODOR:	Clear green liquid, mild mineral spirits odor.

SECTION IV- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED):	142°F-145°F/61.1°C-62.8°C (Tag CC ASTM D56)
FLAMMABLE LIMITS:	
LEL:	0.9%
UEL:	7.0%
EXTINGUISHING MEDIA:	CO ₂ foam, dry chemicals, water spray (fog)
SPECIAL FIRE FIGHTING PROCEDURES:	Cool sealed drums with water to lessen chance of rupture. Wear self-contained breathing gear. Minimize breathing of gases, vapors or decomposition products.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Combustible liquid, drums could fracture if heated. Auto ignition temperature approximately 450°F (232°C).

SECTION V- REACTIVITY DATA

STABILITY:	Unstable <input type="checkbox"/>	Stable <input checked="" type="checkbox"/>
CONDITIONS TO AVOID:	Keep away from heat, sparks, and open flame.	
INCOMPATIBILITY (MATERIAL TO AVOID):	Acids, strong oxidizers such as liquid chlorine, concentrated oxygen, sodium	
HAZARDOUS DECOMPOSITION OF BYPRODUCTS:	Carbon dioxide, carbon monoxide, fumes, smoke, and aldehydes upon incomplete combustion.	
HAZARDOUS POLYMERIZATION:	May Occur <input type="checkbox"/>	Will not Occur <input checked="" type="checkbox"/>
CONDITIONS TO AVOID:	None	

*CAS # for component could vary from different suppliers due to different manufacturing processes. Specs are per Shell MSDS 7.653-.1T

SECTION VI - HEALTH HAZARD DATA

ROUTE(S) OF ENTRY:	INHALATION <input checked="" type="checkbox"/>	SKIN <input checked="" type="checkbox"/>	INGESTION <input checked="" type="checkbox"/>
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HEALTH HAZARDS (ACUTE & CHRONIC):	Skin irritation	Oral: LD ₅₀ > 25 ml/kg - Rat
	Dermal: LD ₅₀ > 4 ml/kg - Rabbit	Inhalation: LC ₅₀ > 700 ppm /4H - Rat

CARCINOGENICITY:	NTP	IARC MONOGRAPHS	OSHA REGULATED
	<input type="checkbox"/> NO	<input type="checkbox"/> NO	<input type="checkbox"/> NO

SIGNS & SYMPTOMS OF EXPOSURE: Skin or eye irritation, dizziness, or headache.

MEDICAL CONDITIONING GENERALLY AGGRAVATED BY EXPOSURE: Skin or respiratory allergies.

EMERGENCY & FIRST AID PROCEDURES:

Eye Contact: High vapor concentration may be irritating. If liquid gets into eye, irrigate eye with water for 15 minutes with lid open. See doctor.

Skin contact: Prolonged & repeated exposure may dry the skin. If clothing gets wet, remove and wash exposed area with water. Apply skin lotion or lanolin cream. If irritation results, see doctor.

Inhalation: Vapors may result in irritation to nose, throat & respiratory tract. High vapor concentration can cause headache & dizziness, and result in central nervous system depression. Remove to fresh air. Use oxygen or artificial respiration if required.

Ingestion: Do not induce vomiting. Call Doctor. If more than 2.0 ml/kg is ingested and vomiting has not occurred, then emesis could be induced with doctors supervision. If vomiting occurs, keep head below hip to prevent aspiration of liquid into lungs.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Use absorbent material or sand. Shovel into waste container. Dispose of properly.

WASTE DISPOSAL METHOD: Reclaim by distillation or have disposal performed by a licensed waste hauler.

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING: Store in cool area away from heat or open flames. All precautions apply to empty container.

OTHER PRECAUTIONS: Not biodegradable. Sufficient ventilation in volume and pattern to keep work area concentration below applicable safety levels.

SECTION VIII - CONTROL MEASURES

RESPIRATORY PROTECTION (SPECIFY TYPE): None

VENTILATION

LOCAL EXHAUST: None. Sufficient ventilation in volume and pattern to keep work area concentration below applicable safety levels.

SPECIAL: None

MECHANICAL (GENERAL): Well ventilated room

PROTECTIVE GLOVES: Nitrile

EYE PROTECTION: Chemical splash goggles

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: For constant use, Nitrile gloves and solvent resistant apron are recommended. Wear goggles as appropriate.

WORK/HYGIENIC PRACTICES: Use skin lotion or cream if gloves are not worn.

SECTION IX - TRANSPORTATION INFORMATION**DOMESTIC (DOT)**

GROUND: Combustible liquid, N.O.S., not regulated under 49 CFR

AIR: Use international regulations

INTERNATIONAL (ICAO/IATA)

Petroleum distillates, N.O.S., Class 3, UN1268, Packaging Group III

THE DATA PRESENTED IS TRUE AND CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF. NEITHER SELLER NOR PREPARER MAKES ANY WARRANTIES, EXPRESSED OR IMPLIED, CONCERNING THE INFORMATION PRESENTED, MERCHANTABILITY OR FITNESS OF PURPOSE.

Safety Data Sheet
Arposolve 680 MIL-PRF-680C NOT.1 Type II

Version 1.2

Revision Date: 09/02/2019

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Arposolve 680 MIL-PRF-680C NOT.1 Type II

Recommended use of the chemical and restrictions on use

Recommended use : Degreasing Solvent

Manufacturer or supplier's details

Company : Univar Solutions USA, Inc.
Address : 3075 Highland Pkwy Suite 200
 Downers Grove, IL 60515
 United States of America (USA)

Cage Code: : 4N760
NSN : 1 GL : 6850-01-474-2319
 5 GL : 6850-01-474-2317
 15 GL : 6850-01-378-0698
 55 GL : 6850-01-474-2316

Emergency telephone number:
 Transport North America: CHEMTREC (1-800-424-9300)
 CHEMTREC INTERNATIONAL Tel # 703-527-3887

Additional Information: : Responsible Party: Product Compliance Department
 E-mail: SDSNA@univarsolutions.com
 SDS Requests: 1-855-429-2661
 Website: www.univarsolutions.com

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 4

Aspiration hazard : Category 1

GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H227 Combustible liquid.
 H304 May be fatal if swallowed and enters airways.

Precautionary statements : **Prevention:**
 P210 Keep away from heat/sparks/open flames/hot surfaces.
 No smoking.
 P280 Wear protective gloves/ eye protection/ face protection.
Response:
 P301 + P310 IF SWALLOWED: Immediately call a POISON

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CENTER/doctor.
 P331 Do NOT induce vomiting.
 P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Storage:
 P403 + P235 Store in a well-ventilated place. Keep cool.
 P405 Store locked up.
Disposal:
 P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Hazardous components

CAS-No.	Chemical name	Weight percent
64742-48-9	Naphtha (petroleum), hydrotreated heavy	90 - 100

Any Concentration shown as a range is due to batch variation.

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
 Show this safety data sheet to the doctor in attendance.
 Symptoms of poisoning may appear several hours later.
 Do not leave the victim unattended.

If inhaled : If unconscious, place in recovery position and seek medical advice.
 If symptoms persist, call a physician.

In case of skin contact : If on skin, rinse well with water.
 If on clothes, remove clothes.

In case of eye contact : Flush eyes with water as a precaution.
 Remove contact lenses.
 Protect unharmed eye.
 Keep eye wide open while rinsing.
 If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.
 Do NOT induce vomiting.
 Do not give milk or alcoholic beverages.
 Never give anything by mouth to an unconscious person.
 If symptoms persist, call a physician.
 Take victim immediately to hospital.

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SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Carbon dioxide (CO₂)
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during fire-fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon oxides
Smoke
Fume
Hazardous decomposition products due to incomplete combustion
- Specific extinguishing methods : Use a water spray to cool fully closed containers.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
For safety reasons in case of fire, cans should be stored separately in closed containments.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material.
Keep away from open flames, hot surfaces and sources of ignition.

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- Advice on safe handling : Avoid formation of aerosol.
Do not breathe vapours/dust.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : No smoking.
Keep in a well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.
- Packaging material : Suitable material: Zinc, Stainless steel, Carbon steel
Unsuitable material: Natural rubber, Butyl rubber

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Personal protective equipment

- Respiratory protection : No personal respiratory protective equipment normally required.
In the case of vapour formation use a respirator with an approved filter.
- Hand protection
- Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
- Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid

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Colour	: Clear, Colorless
Odour	: odourless
Odour Threshold	: No data available
pH	: No data available
Freezing Point (Pour point)	: -69 °C (-92 °F)
Boiling Point (Boiling point/boiling range)	: 189 - 209 °C (372 - 408 °F)
Flash point	: 62 °C (144 °F) Method: ASTM D 93
Evaporation rate	: 0.09 (Butyl Acetate = 1)
Flammability (solid, gas)	: No data available
Upper explosion limit	: 5.3 %(V)
Lower explosion limit	: 0.7 %(V)
Vapour pressure	: 0.31 mmHg @ 20 °C (68 °F)
Relative vapour density	: 5.6(Air = 1.0)
Relative density	: 0.765 @ 15 °C (59 °F) Reference substance: (water = 1)
Density	: 0.7640 g/cm ³ @ 15 °C (59 °F)
Solubility(ies) Water solubility	: negligible
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: 335 °C
Thermal decomposition	: No data available
Viscosity Viscosity, kinematic	: 1.56 mm ² /s @ 40 °C (104 °F)

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.

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Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No hazards to be specially mentioned.
Conditions to avoid	: Keep away from heat, flame, sparks and other ignition sources.
Incompatible materials	: Strong oxidizing agents
Hazardous decomposition products	: Carbon oxides Smoke Hazardous decomposition products due to incomplete combustion

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	: Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	: Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	: Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Product:

Result: No skin irritation

Serious eye damage/eye irritation

Product:

Result: No eye irritation

Carcinogenicity

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No component of this product present at levels greater than or

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equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

STOT - single exposure

Product:

Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

Components:

64742-48-9:

Target Organs: Nervous system

Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

Aspiration toxicity

Components:

64742-48-9:

May be fatal if swallowed and enters airways.

Further information

Product:

Remarks: Solvents may degrease the skin.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Pro-

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tection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.
For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Univar Solutions ChemCare: 1-800-909-4897

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

DOT (Department of Transportation):

UN1268, PETROLEUM DISTILLATES, N.O.S., CBL, III

IATA (International Air Transport Association): Not regulated as a dangerous good

IMDG-Code: Not regulated as a dangerous good

Special Notes: : The flash point for this material is greater than 100 F (38 C). Therefore, in accordance with 49 CFR 173.150(f) non-bulk containers (<450L or <119 gallon capacity) of this material may be shipped as non-regulated when transported solely by land, as long as the material is not a hazardous waste, a marine pollutant, or specifically listed as a hazardous substance.

SECTION 15. REGULATORY INFORMATION

WHMIS Classification : B3: Combustible Liquid

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

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Version 1.2

Revision Date: 09/02/2019

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Fire Hazard
Chronic Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

64742-48-9	Naphtha (petroleum), hydrotreated heavy	90 - 100 %
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New Jersey Right To Know

64742-48-9	Naphtha (petroleum), hydrotreated heavy	90 - 100 %
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California Prop 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory

DSL : All components of this product are on the Canadian DSL

AICS : On the inventory, or in compliance with the inventory

NZIoC : Not in compliance with the inventory

Safety Data Sheet

Arposolve 680 MIL-PRF-680C NOT.1 Type II

Version 1.2

Revision Date: 09/02/2019

ENCS : On the inventory, or in compliance with the inventory

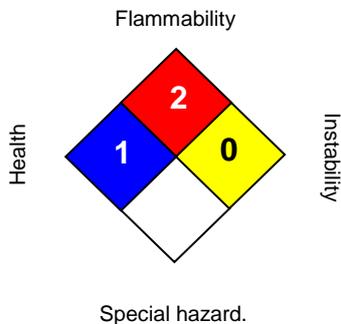
KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	1*
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
 2 = Moderate, 3 = High
 4 = Extreme, * = Chronic

The information accumulated is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made become available subsequently to the date hereof, we do not assume any responsibility for the results of its use. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Univar Solutions Product Compliance Department (1-855-429-2661) SDSNA@univarsolutions.com.

Revision Date : 09/02/2019

Material number:

16104991, 16056272, 16056271, 16056270, 16056269, 16056268

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program

Safety Data Sheet

Arposolve 680 MIL-PRF-680C NOT.1 Type II

Version 1.2

Revision Date: 09/02/2019

CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		



Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 10/09/2018

HFNQSF

6850-01-474-2316

Reviewed on 10/09/2018
55 GL DM

1 Identification

- **Product Identifier**
- **Trade Name:** NEW II
- **CAS Number:**
64742-48-9
- **EC number:**
265-150-3
- **Index number:**
649-327-00-6
- **Relevant identified uses of the substance or mixture and uses advised against:**
- **Product Description:**
Environmentally Preferred Parts Cleaner
Qualified to MIL-PRF-680C, Type II

Name	Part No.	Packaging	National Stock No.
NEW II	1156-55	55 Gal Drum	6850-01-474-2316
NEW II	1156-5	5 Gal Pail	6850-01-474-2317
NEW II	1156-15	15 Gal Drum	6850-01-378-0698
NEW II	1156	1 Gal	6850-01-474-2319

- **Details of the Supplier of the Safety Data Sheet:**
- **Manufacturer/Supplier:**
Ecolink
2177A Flintstone Drive
Tucker, GA 30084
www.ecolink.com
800-886-8240 or 770-621-8240 (8-5 EST)
- **Emergency telephone number:** PERS Emergency response: 1-801-629-0667

email: info@ecolink.com

2 Hazard(s) Identification

- **Classification of the substance or mixture:**



Health hazard

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

Flam. Liq. 4 H227 Combustible liquid.

- **Label elements:**
- **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**



GHS08

- **Signal word:** Danger
- **Hazard-determining components of labeling:**
Naphtha (petroleum), hydrotreated heavy
- **Hazard statements:**
H227 Combustible liquid.

(Contd. on page 2)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 10/09/2018

Reviewed on 10/09/2018

Trade Name: NEW II

H304 May be fatal if swallowed and enters airways.

• **Precautionary statements:**

- P210 Keep away from flames and hot surfaces. – No smoking.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P310 If swallowed: Immediately call a poison center/doctor.
- P331 Do NOT induce vomiting.
- P370+P378 In case of fire: Use for extinction: CO2, powder or water spray.
- P403+P235 Store in a well-ventilated place. Keep cool.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

• **Unknown acute toxicity:**

This value refers to knowledge of known, established toxicological or ecotoxicological values.

- **Classification system:** NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme
- **NFPA ratings (scale 0 - 4)**



• **HMIS-ratings (scale 0 - 4)**

HEALTH	1	Health = 1
FIRE	2	Fire = 2
REACTIVITY	0	Physical Hazard = 0

- **Hazard(s) not otherwise classified (HNOC):** None.

3 Composition/Information on Ingredients

- **Chemical characterization: Substance**
- **CAS No. Description**
64742-48-9 Naphtha (petroleum), hydrotreated heavy
- **Identification number(s)**
- **EC number:** 265-150-3
- **Index number:** 649-327-00-6

* 4 First-Aid Measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Wash contact areas with soap and water. Remove contaminated clothing and launder before reuse.
- **After eye contact:** Rinse opened eye for at least 15 minutes under running water.
- **After swallowing:**
Give large amounts of water. Do NOT induce vomiting. If symptoms persist consult doctor.
- **Information for doctor**
- **Most important symptoms and effects, both acute and delayed:** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed:**
If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

5 Fire-Fighting Measures

- **Extinguishing media**
- **Suitable extinguishing agents:** CO2, foam, dry chemical, or water fog to extinguish flames.
- **For safety reasons unsuitable extinguishing agents:** No further relevant information.

(Contd. on page 3)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 10/09/2018

Reviewed on 10/09/2018

Trade Name: NEW II

• **Special hazards arising from the substance or mixture:**

Combustible liquid. Vapors can travel to a source of ignition and flash back.
Explosive mixtures may occur at temperatures at or above flashpoint.

• **Advice for firefighters**

• **Special protective equipment for firefighters:**

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face piece operated in positive pressure mode.

As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

6 Accidental Release Measures

• **Personal precautions, protective equipment and emergency procedures:** Not required.

• **Environmental precautions:** Do not allow to enter sewers/surface or ground water.

• **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (i.e. sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
Dispose of the collected material according to regulations.

• **Reference to other sections:**

See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

• **Protective Action Criteria for Chemicals**

• PAC-1:	
	350 mg/m ³
• PAC-2:	
	1,800 mg/m ³
• PAC-3:	
	40,000 mg/m ³

* 7 Handling and Storage

• **Handling**

• **Precautions for safe handling:**

Prevent formation of aerosols or spray mists.
Avoid contact with the skin.
Prevent small spills and leakage to avoid slip hazard.

• **Information about protection against explosions and fires:**

Protect from heat. Bond and ground containers when transferring liquid.

• **Conditions for safe storage, including any incompatibilities**

Compatible with: epoxy phenolics, teflon, neoprene, stainless steel, carbon steel.
Incompatible with: vinyl coatings, natural rubber, butyl rubber, ethylene propylene diene monomer (EPDM).

• **Storage**

• **Requirements to be met by storerooms and receptacles:** No special requirements.

• **Information about storage in one common storage facility:** Not required.

• **Further information about storage conditions:**

Keep container closed when not in use. Handle containers with care. Store at room temperature. Protect from heat and direct sunlight. Store in a cool, well ventilated place. Open slowly in order to control possible pressure release.

(Contd. on page 4)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 10/09/2018

Reviewed on 10/09/2018

Trade Name: NEW II

- **Specific end use(s):** No further relevant information available.

8 Exposure Controls/Personal Protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters:**

· **Components with occupational exposure limits:**

64742-48-9 Naphtha (petroleum), hydrotreated heavy

TWA	Short-term value: 600 mg/m ³ , 100 ppm Long-term value: 300 mg/m ³ , 50 ppm
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- **Additional information:** The lists that were valid during the creation of this SDS were used as basis.
- **Exposure controls:**
- **Personal protective equipment**
- **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
- **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure, use respiratory protective device that is independent of circulating air.
- **Protection of hands:** Not required.
- **Material of gloves:** Not applicable.
- **Penetration time of glove material:** Not applicable.
- **Eye protection:** Goggles or safety glasses with side shields recommended.

* 9 Physical and Chemical Properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
 - Form:** Liquid
 - Color:** Clear, colorless
- **Odour:** Odorless
- **Odor threshold:** Not determined.
- **pH-value:** Not determined.
- **Change in condition**
 - Melting point/Melting range:** -25 °C (-13 °F)
 - Boiling point/Boiling range:** 180 °C (356 °F)
- **Flash point:** 62 °C (143.6 °F) (Bulk Liquid (TCC))
- **Flammability (solid, gaseous):** Not applicable.
- **Ignition temperature:** 240 °C (464 °F) (635°F)
- **Decomposition temperature:** Not determined.
- **Auto igniting:** Not determined.
- **Danger of explosion:** Not determined.
- **Explosion limits:**
 - Lower:** 0.6 Vol %

(Contd. on page 5)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 10/09/2018

Reviewed on 10/09/2018

Trade Name: NEW II

- Upper:** 7 Vol %
- **Vapor pressure @ 20 °C (68 °F):** 1 hPa (0.8 mm Hg) (mmHg)
- **Density @ 20 °C (68 °F):** 0.785 g/cm³ (6.5508 lbs/gal)
- **Relative density:** Not determined.
- **Vapor density @ 20 °C (68 °F):** 5.6 (AIR=1)
- **Evaporation rate @ 20 °C (68 °F):** <1 (nBuAc = 1)
- **Solubility in / Miscibility with:**
- Water @ 20 °C (68 °F):** 0.04 g/l
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
- Dynamic:** Not determined.
- Kinematic:** Not determined.
- VOC content:** 0.00 %
- Solids content:** 0.0 %
- **Other information:** VOC: 767 gm/l

10 Stability and Reactivity

- **Reactivity:** No further relevant information available.
- **Chemical stability:** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** Heat, flame and ignition sources.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological Information

- **Information on toxicological effects:**
- **Acute toxicity:**

LD/LC50 values that are relevant for classification:		
64742-48-9 Naphtha (petroleum), hydrotreated heavy		
Oral	LD50	>5,000 mg/kg (Rat)
Dermal	LD50	>3,000 mg/kg (rab)
Inhalative	LC50/4 h	>5,000 mg/l (Rat)
	LC50/96 hours	>100 mg/l (Trout)

- **Primary irritant effect:**
- **On the skin:** No irritating effect.
- **On the eye:** No irritating effect.
- **Additional toxicological information:**
- **Carcinogenic categories:**

IARC (International Agency for Research on Cancer):
Substance is not listed.

NTP (National Toxicology Program):
Substance is not listed.

(Contd. on page 6)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 10/09/2018

Reviewed on 10/09/2018

Trade Name: NEW II

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** Not applicable.
- **Transport/Additional information:**
- **DOT** DOT Packaging Exceptions (49 CFR 173.xxx): 150
DOT Packaging Non Bulk (49 CFR 173.xxx): 203
DOT Packaging Bulk (49 CFR 173.xxx): 242
- **Remarks:** Not DOT regulated in containers less than 119 gallons.
- **UN "Model Regulation":** Non-Regulated Material

15 Regulatory Information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
- **SARA (Superfund Amendments and Reauthorization):**

<ul style="list-style-type: none"> · Section 355 (extremely hazardous substances): 	Substance is not listed.
<ul style="list-style-type: none"> · Section 313 (Specific toxic chemical listings): 	Substance is not listed.
<ul style="list-style-type: none"> · TSCA (Toxic Substances Control Act): 	Substance is listed.
<ul style="list-style-type: none"> · California Proposition 65: 	
<ul style="list-style-type: none"> · Chemicals known to cause cancer: 	Substance is not listed.
<ul style="list-style-type: none"> · Chemicals known to cause reproductive toxicity for females: 	Substance is not listed.
<ul style="list-style-type: none"> · Chemicals known to cause reproductive toxicity for males: 	Substance is not listed.
<ul style="list-style-type: none"> · Chemicals known to cause developmental toxicity: 	Substance is not listed.
<ul style="list-style-type: none"> · New Jersey Right-to-Know List: 	Substance is not listed.
<ul style="list-style-type: none"> · New Jersey Special Hazardous Substance List: 	Substance is not listed.
<ul style="list-style-type: none"> · Pennsylvania Right-to-Know List: 	Substance is not listed.
<ul style="list-style-type: none"> · Pennsylvania Special Hazardous Substance List: 	Substance is not listed.
<ul style="list-style-type: none"> · Carcinogenic categories: 	
<ul style="list-style-type: none"> · EPA (Environmental Protection Agency): 	Substance is not listed.
<ul style="list-style-type: none"> · TLV (Threshold Limit Value established by ACGIH): 	Substance is not listed.
<ul style="list-style-type: none"> · NIOSH-Ca (National Institute for Occupational Safety and Health): 	Substance is not listed.

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 10/09/2018

Reviewed on 10/09/2018

Trade Name: NEW II

• **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

• **Hazard pictograms:**



GHS08

• **Signal word:** Danger

• **Hazard-determining components of labeling:**

Naphtha (petroleum), hydrotreated heavy

• **Hazard statements:**

H227 Combustible liquid.

H304 May be fatal if swallowed and enters airways.

• **Precautionary statements:**

P210 Keep away from flames and hot surfaces. – No smoking.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P310 If swallowed: Immediately call a poison center/doctor.

P331 Do NOT induce vomiting.

P370+P378 In case of fire: Use for extinction: CO₂, powder or water spray.

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

• **National regulations:**

Non-Regulated Material

• **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

• **Date of preparation / last revision:** 10/09/2018 / 3

• **Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road

ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety and Health

OSHA: Occupational Safety & Health Administration

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 10/09/2018

Reviewed on 10/09/2018

Trade Name: NEW II

Flam. Liq. 4: Flammable liquids – Category 4

Asp. Tox. 1: Aspiration hazard – Category 1

· * **Data compared to the previous version altered.**

SDS created by MSDS Authoring Services www.msdsauthoring.com +1-877-204-9106



Safety Data Sheet

Daraclean 282

Prepared according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012 and the Hazardous Products Regulations (HPR) WHMIS 2015

Date of issue: 09/01/2016 Revision date: 09/01/2016 Version: 1.0

SECTION 1: IDENTIFICATION

1.1. PRODUCT IDENTIFIER

Product name : Daraclean 282
Product code : Not available

1.2. RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

Use of the substance/mixture : Non-Destructive Testing

1.3. DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Manufacturer	Distributor
Magnaflux	
155 Harlem Ave.	
Glenview, IL 60025 - USA	
T: 847-657-5300	

1.4. EMERGENCY TELEPHONE NUMBER

Emergency number : CHEMTREC 800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

2.1. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

The hazards given in this SDS apply to the product at full concentration. By diluting the product, the hazards will be reduced. It is up to the employer/user to determine the proper personal protection equipment and safety precautions when using diluted product.

GHS classification

Skin Irrit. 2
Eye Dam. 1
Skin Sens. 1

2.2. LABEL ELEMENTS

GHS labelling

Hazard pictograms (GHS) :



GHS05

GHS07

Signal word (GHS) :

Danger

Hazard statements (GHS) :

Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction.

Precautionary statements (GHS) :

Wash hands thoroughly after handling. Wear protective gloves/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. OTHER HAZARDS

No additional information available

2.4. UNKNOWN ACUTE TOXICITY (GHS)

Not applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. SUBSTANCE

Not applicable

3.2. MIXTURE

Name	Product identifier	%
Diethylene glycol monobutyl ether	(CAS No) 112-34-5	3.00
Triethanolamine	(CAS No) 102-71-6	1.20
Potassium hydroxide	(CAS No) 1310-58-3	0.90
Tolyltriazole, sodium salt	(CAS No) 64665-57-2	0.51
Ethanolamine	(CAS No) 141-43-5	0.50
D-Limonene	(CAS No) 5989-27-5	0.50
Morpholine	(CAS No) 110-91-8	0.40
2-Mercaptobenzothiazole	(CAS No) 149-30-4	0.20

SECTION 4: FIRST AID MEASURES

4.1. DESCRIPTION OF FIRST AID MEASURES

- First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
- First-aid measures after skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. Get medical attention immediately.
- First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

- Symptoms/injuries after inhalation : May cause respiratory tract irritation.
- Symptoms/injuries after skin contact : Causes skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin. May cause an allergic skin reaction.
- Symptoms/injuries after eye contact : Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.
- Symptoms/injuries after ingestion : May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

4.3. INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: FIREFIGHTING MEASURES

5.1. EXTINGUISHING MEDIA

- Suitable extinguishing media : Powder, water spray, foam, carbon dioxide.
- Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

- Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon.

5.3. ADVICE FOR FIREFIGHTERS

- Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Use water spray to keep fire-exposed containers cool.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

- General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Avoid contact with skin and eyes. Spills of this material are a slipping hazard.

6.2. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

- For containment : Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).
- Methods for cleaning up : Scoop up material and place in a disposal container. Provide ventilation.

6.3. REFERENCE TO OTHER SECTIONS

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

Prepared according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012 and the Hazardous Products Regulations (HPR) WHMIS 2015

SECTION 7: HANDLING AND STORAGE

7.1. PRECAUTIONS FOR SAFE HANDLING

Precautions for safe handling : Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke.

Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Storage conditions : Keep out of the reach of children. Keep container tightly closed and in a well-ventilated place.

7.3. SPECIFIC END USE(S)

Not available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. CONTROL PARAMETERS

Diethylene glycol monobutyl ether (112-34-5)		
ACGIH	ACGIH TWA (ppm)	10 ppm (inhalable fraction and vapor)
OSHA	Not applicable	

Triethanolamine (102-71-6)		
ACGIH	ACGIH TWA (mg/m ³)	5 mg/m ³
OSHA	Not applicable	

Potassium hydroxide (1310-58-3)		
ACGIH	ACGIH Ceiling (mg/m ³)	2 mg/m ³
OSHA	Not applicable	
USA - NIOSH	NIOSH REL (ceiling) (mg/m ³)	2 mg/m ³

Tolyltriazole, sodium salt (64665-57-2)		
ACGIH	Not applicable	
OSHA	Not applicable	

Ethanolamine (141-43-5)		
ACGIH	ACGIH TWA (ppm)	3 ppm
ACGIH	ACGIH STEL (ppm)	6 ppm
OSHA	OSHA PEL (TWA) (mg/m ³)	6 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	3 ppm
USA - IDLH	US IDLH (ppm)	30 ppm
USA - NIOSH	NIOSH REL (TWA) (mg/m ³)	8 mg/m ³
USA - NIOSH	NIOSH REL (TWA) (ppm)	3 ppm
USA - NIOSH	NIOSH REL (STEL) (mg/m ³)	15 mg/m ³
USA - NIOSH	NIOSH REL (STEL) (ppm)	6 ppm

D-Limonene (5989-27-5)		
ACGIH	Not applicable	
OSHA	Not applicable	

Morpholine (110-91-8)		
ACGIH	ACGIH TWA (ppm)	20 ppm
OSHA	OSHA PEL (TWA) (mg/m ³)	70 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	20 ppm
USA - IDLH	US IDLH (ppm)	1400 ppm (10% LEL)
USA - NIOSH	NIOSH REL (TWA) (mg/m ³)	70 mg/m ³
USA - NIOSH	NIOSH REL (TWA) (ppm)	20 ppm
USA - NIOSH	NIOSH REL (STEL) (mg/m ³)	105 mg/m ³

Prepared according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012 and the Hazardous Products Regulations (HPR) WHMIS 2015

Morpholine (110-91-8)		
USA - NIOSH	NIOSH REL (STEL) (ppm)	30 ppm
2-Mercaptobenzothiazole (149-30-4)		
ACGIH	Not applicable	
OSHA	Not applicable	

8.2. EXPOSURE CONTROLS

Appropriate engineering controls	: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.
Hand protection	: Wear chemically resistant protective gloves.
Eye protection	: Wear approved eye protection (properly fitted dust- or splash-proof chemical safety goggles) and face protection (face shield).
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Environmental exposure controls	: Maintain levels below Community environmental protection thresholds.
Other information	: Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: Liquid
Appearance	: Thin liquid
Colour	: Yellow
Odour	: Citrus
Odour threshold	: No data available
pH	: 12.5
Melting point	: No data available
Freezing point	: No data available
Boiling point	: Initial: 100 °C (212 °F)
Flash point	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: Not flammable
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Vapour pressure	: No data available
Relative density	: 1.03
Relative vapour density at 20 °C	: No data available
Solubility	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. OTHER INFORMATION

VOC content	: 42.03 g/l
-------------	-------------

Prepared according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012 and the Hazardous Products Regulations (HPR) WHMIS 2015

SECTION 10: STABILITY AND REACTIVITY
10.1. REACTIVITY

No dangerous reaction known under conditions of normal use.

10.2. CHEMICAL STABILITY

Stable under normal storage conditions.

10.3. POSSIBILITY OF HAZARDOUS REACTIONS

No dangerous reaction known under conditions of normal use.

10.4. CONDITIONS TO AVOID

Heat. Incompatible materials.

10.5. INCOMPATIBLE MATERIALS

Strong acids. Strong bases. Strong reducing agents. Strong oxidizing agents.

10.6. HAZARDOUS DECOMPOSITION PRODUCTS

May include, and are not limited to: oxides of carbon.

SECTION 11: TOXICOLOGICAL INFORMATION
11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

Acute toxicity : Not classified.

Daraclean 282	
LD50 oral rat	> 2000 mg/kg (Calculated Acute Toxicity Estimate)
LD50 dermal rabbit	> 2000 mg/kg (Calculated Acute Toxicity Estimate)
LC50 inhalation rat	> 20 mg/l/4h (Calculated Acute Toxicity Estimate)
Diethylene glycol monobutyl ether (112-34-5)	
LD50 oral rat	5660 mg/kg
LD50 dermal rabbit	2700 mg/kg
Triethanolamine (102-71-6)	
LD50 oral rat	4190 mg/kg
LD50 dermal rabbit	> 20 ml/kg
Potassium hydroxide (1310-58-3)	
LD50 oral rat	284 mg/kg
Ethanolamine (141-43-5)	
LD50 oral rat	1720 mg/kg
LD50 dermal rabbit	1000 mg/kg
D-Limonene (5989-27-5)	
LD50 oral rat	4400 mg/kg
LD50 dermal rabbit	> 5 g/kg
Morpholine (110-91-8)	
LD50 oral rat	1050 mg/kg
LD50 dermal rabbit	310 - 810 mg/kg
LC50 inhalation rat	8000 ppm/8h
2-Mercaptobenzothiazole (149-30-4)	
LD50 oral rat	100 mg/kg
LD50 dermal rabbit	> 7940 mg/kg

Skin corrosion/irritation	: Causes skin irritation based on test results.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Based on available data, the classification criteria are not met.
Carcinogenicity	: Based on available data, the classification criteria are not met.

Prepared according to the Hazard Communication Standard (CFR29 1910 1200) HazCom 2012 and the Hazardous Products Regulations (HPR) WHMIS 2015

Triethanolamine (102-71-6)	
IARC group	3 - Not classifiable

D-Limonene (5989-27-5)	
IARC group	3 - Not classifiable
National Toxicology Program (NTP) Status	1 - Evidence of Carcinogenicity

Morpholine (110-91-8)	
IARC group	3 - Not classifiable

2-Mercaptobenzothiazole (149-30-4)	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	1 - Evidence of Carcinogenicity

Reproductive toxicity	: Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure)	: Based on available data, the classification criteria are not met.
Specific target organ toxicity (repeated exposure)	: Based on available data, the classification criteria are not met.
Aspiration hazard	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: May cause respiratory tract irritation.
Symptoms/injuries after skin contact	: Causes skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin. May cause an allergic skin reaction.
Symptoms/injuries after eye contact	: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.
Symptoms/injuries after ingestion	: May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

SECTION 12: ECOLOGICAL INFORMATION

12.1. TOXICITY

Ecology - general : May cause long-term adverse effects in the aquatic environment.

12.2. PERSISTENCE AND DEGRADABILITY

Daraclean 282	
Persistence and degradability	Not established.

12.3. BIOACCUMULATIVE POTENTIAL

Daraclean 282	
Bioaccumulative potential	Not established.

12.4. MOBILITY IN SOIL

No additional information available

12.5. OTHER ADVERSE EFFECTS

Effect on the global warming : No known effects from this product.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. WASTE TREATMENT METHODS

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations. The generation of waste should be avoided or minimized wherever possible.

SECTION 14: TRANSPORT INFORMATION

In accordance with DOT/TDG/IATA/IMDG

DOT (bulk)	: Not regulated for transport
DOT (non-bulk)	: Not regulated for transport
TDG	: Not regulated for transport
IATA	: Not regulated for transport
IMDG	: Not regulated for transport

Prepared according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012 and the Hazardous Products Regulations (HPR) WHMIS 2015

ADDITIONAL INFORMATION

Other information : No supplementary information available.
Special transport precautions : Do not handle until all safety precautions have been read and understood.

SECTION 15: REGULATORY INFORMATION

15.1. FEDERAL REGULATIONS

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

All components of this product are listed, or excluded from listing, on the Canadian DSL (Domestic Substances List) and NDSL (Non-Domestic Substances List) inventories, except for:

LZ-Z 1	RR-10545-3
--------	------------

Diethylene glycol monobutyl ether (112-34-5)

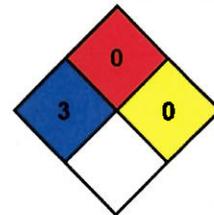
EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA Y2 - Y2 - indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule
--------------------------	--

2-Mercaptobenzothiazole (149-30-4)

Subject to reporting requirements of United States SARA Section 313

SARA Section 313 - Emission Reporting	1.0 %
---------------------------------------	-------

NFPA health hazard : 3
NFPA fire hazard : 0
NFPA reactivity : 0



15.2. US STATE REGULATIONS

Daraclean 282

State or local regulations	This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.
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SECTION 16: OTHER INFORMATION

Date of issue : 09/01/2016
Revision date : 09/01/2016
Other information : None.

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

Safety Data Sheet

Aluminum Cleaner 166

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1. Identification

Product identifier used on the label

Aluminum Cleaner 166

Recommended use of the chemical and restriction on use

Recommended use*: Detergents; Restricted to professional users.
Unsuitable for use: Uses other than recommended

* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY

Contact address:
BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932
USA
Telephone: +1 973 245-6000

Emergency telephone number

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Chemical family: inorganic, organic, aqueous solution

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Eye Dam./Irrit.	2A	Serious eye damage/eye irritation
Repr.	1 (unborn child)	Reproductive toxicity
Repr.	1 (fertility)	Reproductive toxicity
Aquatic Acute	3	Hazardous to the aquatic environment - acute
Aquatic Chronic	3	Hazardous to the aquatic environment - chronic

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Label elements

Pictogram:



Signal Word:
Danger

Hazard Statement:

H319 Causes serious eye irritation.
H412 Harmful to aquatic life with long lasting effects.
H360 May damage fertility. May damage the unborn child.

Precautionary Statements (Prevention):

P201 Obtain special instructions before use.
P273 Avoid release to the environment.
P280 Wear protective gloves, protective clothing and eye protection or face protection.
P202 Do not handle until all safety precautions have been read and understood.
P264 Wash contaminated body parts thoroughly after handling.
P281 Use personal protective equipment as required.

Precautionary Statements (Response):

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical attention.
P337 + P313 If eye irritation persists: Get medical attention.

Precautionary Statements (Storage):

P405 Store locked up.

Precautionary Statements (Disposal):

P501 Dispose of contents and container to hazardous or special waste collection point.

Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Sodium nitrate

CAS Number: 7631-99-4
Content (W/W): >= 1.0 - < 3.0%
Synonym: Nitric acid, sodium salt

Poly(oxy-1,2-ethanediyl), .alpha.-(2-chloroethyl)-.omega.-(decyloxy)-

CAS Number: 61702-77-0
Content (W/W): >= 0.3 - < 1.0%
Synonym: R22-41; H302-318

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Phosphate Ester
Content (W/W): $\geq 0.3 - < 1.0\%$
Synonym: H315-318-335

Amides, coco, N-[3-(dimethylamino)propyl], alkylation products with sodium 3-chloro-2-hydroxypropanesulfonate
CAS Number: 70851-08-0
Content (W/W): $\geq 1.0 - < 3.0\%$
Synonym: No data available.

Zinc sulphate, monohydrate
CAS Number: 7446-19-7
Content (W/W): $\geq 1.0 - < 3.0\%$
Synonym: No data available.

Disodium tetraborate
CAS Number: 1330-43-4
Content (W/W): $\geq 25.0 - < 50.0\%$
Synonym: No data available.

4. First-Aid Measures

Description of first aid measures

General advice:

First aid personnel should pay attention to their own safety. Remove affected person from danger area. Remove contaminated clothing.

If inhaled:

Remove the affected individual into fresh air and keep the person calm. If symptoms persist, seek medical advice.

If on skin:

Wash affected areas thoroughly with soap and water. If symptoms persist, seek medical advice.

If in eyes:

Rinse immediately with plenty of water, also under the eyelids, for at least 30 minutes. Seek medical attention. Remove contact lenses, if present.

If swallowed:

Rinse mouth thoroughly with water, seek medical attention. Do not induce vomiting. Seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.

Information on: Sodium nitrate

Symptoms: Overexposure may cause: vomiting, methaemoglobinaemia, weakness, abdominal cramps, diarrhea, headache

Hazards: No applicable information available.

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Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
carbon dioxide, dry powder, alcohol-resistant foam, water spray

Unsuitable extinguishing media for safety reasons:
water jet

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
carbon oxides, nitrogen oxides, phosphorus oxides, sulfur oxides

Advice for fire-fighters

Protective equipment for fire-fighting:
Appropriate breathing apparatus may be required.

Further information:

Cool endangered containers with water-spray. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Use personal protective clothing. Advice on product handling can be found in sections 7 and 8 of this safety data sheet.

Environmental precautions

Do not discharge into drains/surface waters/groundwater. Do not discharge into the subsoil/soil.

Methods and material for containment and cleaning up

Ensure adequate ventilation. Avoid dust formation. Take up mechanically and collect in suitable container (adequately labelled) for disposal.

7. Handling and Storage

Precautions for safe handling

Do not return residues to the storage containers. Provide good ventilation of working area (local exhaust ventilation if necessary). Avoid dust formation. The workplace should be equipped with an emergency shower and eye-rinsing facility. Avoid contact with the skin, eyes and clothing. Keep away from food, drink and animal feeding stuffs. Warn users about safety measures and precautions to prevent accidents.

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Odour threshold:	No applicable information available.
Colour:	white
pH value:	8.5 - 9.5 (40 g/l)
Melting point:	not determined
Freezing point:	not determined
Boiling point:	not determined
Boiling range:	not determined
Sublimation point:	No applicable information available.
Flash point:	not applicable
Flammability:	not flammable
Lower explosion limit:	not applicable
Upper explosion limit:	not applicable
Autoignition:	not applicable
Vapour pressure:	(20 °C) not determined
Density:	0.971 g/cm3 (20 °C)
Relative density:	No applicable information available.
Bulk density:	60.60 lb/ft3
Vapour density:	No applicable information available.
Partitioning coefficient n-octanol/water (log Pow):	No applicable information available.
Thermal decomposition:	No applicable information available.
Viscosity, dynamic:	No applicable information available.
Viscosity, kinematic:	(20 °C) not applicable
Solubility in water:	65.73 g/l
Miscibility with water:	miscible
Solubility (quantitative):	No applicable information available.
Solubility (qualitative):	No applicable information available.
Molar mass:	No applicable information available.
Evaporation rate:	No applicable information available.

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Oxidizing properties:
not fire-propagating

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

Dust can form an explosive mixture with air.

Conditions to avoid

Avoid humidity.

Incompatible materials

No substances known that should be avoided.

Hazardous decomposition products

Decomposition products:

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Possible decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition:
No applicable information available.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Primary routes of entry

Ingestion

Acute Toxicity/Effects

Irritation / corrosion

Assessment of irritating effects: Eye contact causes irritation.

Chronic Toxicity/Effects

Reproductive toxicity

Assessment of reproduction toxicity: Causes impairment of fertility in laboratory animals. The substance caused malformations/developmental toxicity in laboratory animals. The product has not been tested. The statement has been derived from the properties of the individual components.

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

Harmful to aquatic life. Harmful to aquatic life with long lasting effects. Do not allow to enter drains or waterways. There are no test results available for this product.

Persistence and degradability

Assessment biodegradation and elimination (H2O)

No data available concerning biodegradation and elimination.

Bioaccumulative potential

Bioaccumulation potential

No data available.

Mobility in soil

Assessment transport between environmental compartments

No data available.

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13. Disposal considerations

Waste disposal of substance:

Observe national and local legal requirements.

Container disposal:

Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

14. Transport Information

Land transport

USDOT

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

EPCRA 313:

CAS Number

7631-99-4

7733-02-0

Chemical name

Sodium nitrate

Zinc Sulphate

State regulations

State RTK

NJ

PA

CAS Number

7446-19-7

7631-99-4

1330-43-4

7446-19-7

Trade Secret

7631-99-4

Chemical name

Zinc sulphate, monohydrate

Sodium nitrate

Disodium tetraborate

Zinc sulphate, monohydrate

Trade secret registry

Sodium nitrate

Safe Drinking Water & Toxic Enforcement Act, CA Prop. 65:

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WARNING: This product can expose you to chemicals including 1,4-DIOXANE, which is known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov.

NFPA Hazard codes:

Health: 2 Fire: 0 Reactivity: 0 Special:

HMIS III rating

Health: 2² Flammability: 0 Physical hazard: 0

16. Other Information

SDS Prepared by:

BASF NA Product Regulations
SDS Prepared on: 2020/11/19

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

END OF DATA SHEET

ATTACHMENT E.4

APPLICATION TO RENEW NUWCDIVKPT PERMIT NO. ST0007353
TO DISCHARGE INDUSTRIAL WASTEWATER TO A POTW

Provide results for any other parameters other than those identified in question E.4.

This attachment provides clarification for the results of all sample analysis required by State Waste Discharge Permit ST0007353 over the past year (April 1, 2022 – March 31, 2023).

SP001: B. 825 IWTP – Treated wastewater at the IWTP is sampled at SP001 in order to confirm the wastewater is adequately treated before discharging to the NUWC Keyport sanitary sewer system. Due to reduced operations as a result of COVID19, there was only one discharge from the IWTP between April 1, 2022 – March 31, 2023. See Table E.4 for results. Results are listed in this attachment rather than on the table provided in section E. 4 of the application because certain parameters are measured at both SP001 and SP002. Therefore, the results for each sample point are listed separately for clarity.

Table E.4. – SP001 Sample Results from IWTP, November 2022

Parameter	Result
pH min	7.2
pH max	7.6
Cadmium	<0.1 mg/L
Chromium	0.15 mg/L
Copper	<0.1 mg/L
Lead	<0.1 mg/L
Nickel	0.2 mg/L
Silver	<0.1 mg/L
Zinc	<0.1 mg/L
Cyanide	<0.2 mg/L
PGDN	<0.05 mg/L
Flow	34,207 gallons

SP002: Manholed Outside B. 94 – Combined industrial and domestic wastewater is sampled at SP002 prior to leaving NUWC Keyport sanitary sewer system and entering Kitsap County public sewer system. This monitors overall wastewater quality of all combined waste streams at NUWC Keyport. See E. 4 of the permit application for all SP002 results.

SP003: B. 514 Otto Fuel II Reclamation – This measures the wastewater at the effluent of the OFRS prior to entering the NUWC Keyport sanitary sewer system to ensure the wastewater is below 0.2 mg/L propylene glycol dinitrate (PGDN). Since the OFRS system has been under construction for the past year, there were no discharges from SP003, and therefore no results for SP003 are included in this application.

Also included in this attachment are investigative sample results taken to support the newly proposed discharges for the following waste streams:

478-3 Test Tank Washdown Water – Wastewater from pressure washing saltwater tank
Includes analysis for pH, TSS, and BOD5.

514-4 Buoyancy Bag Washdown Water – Water from washing down bouyancy devices returning from open water testing. Documents included are as follows:

- 1) Fish Bioassay of wastewater showing wastewater is non-toxic
- 2) Full contaminant analysis of wastewater
- 3) SDS for soap utilized in process
- 4) Most recent three sample results for TSS, HEM, Chromium, Copper, Lead, and Zinc

Note that the fish bioassay and full contaminant analysis were performed in 2017. Although these results are dated, the process has not changed since the analysis was performed. Recent sample results were included for contaminants of concern. Due to the small discharge volume expected, NUWC Keyport does not anticipate this waste stream will impact overall wastewater quality measured at SP002.

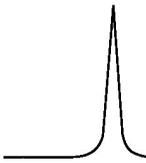
Spectra Labs - Kitsap, LLC (Poulsbo) received samples for NUWC Div. Keyport on Thursday, February 9, 2023 at 9:45 am. Unless otherwise noted, all samples were received in good condition and were tested in accordance with the laboratory's quality control procedures. A summary of the samples received are outlined below.

Sample No.	Description	Location	Sampled
223629-01	Saltwater Tank	1023-3039-478	02/09/2023 8:52

This report package contains laboratory sample results and any attachments listed below. If you have any questions please call (360) 779-5141 or email us at www.spectra-lab.com.

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender immediately at 360-443-7845 and destroy this report promptly.

These results relate only to the items tested and the sample(s) as received by the laboratory. This report shall not be reproduced except in full, without prior express written approval by Spectra Laboratories.



SPECTRA Laboratories - Kitsap

...Where experience matters

Analytical Report

NUWC Div. Keyport
610 Dowell St.
Keyport, WA 98345

Project Saltwater Tank
Sampler Kenneth Eiford
Date Received 02/09/2023

Client ID: 1023-3039-478

Lab No: 223629-01

Sample Date: 02/09/23

Analyte	Method	Result	Qualifiers	Units	PQL	Analysis Date	Analyst
Biochemical Oxygen Demand (BOD)	SM 5210 B	5.3	---	mg/L	2	2/10/2023	KS
pH	SM 4500 H+B	8.61	J1a	pH Units	4.00	2/10/2023	KS
Total Suspended Solids (TSS)	SM 2540 D	36	---	mg/L	4	2/13/2023	ME

Lab Qualifiers Comments:

J1a = Field test - any laboratory testing is considered out of hold.

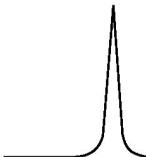
Approved By

Angela Kaelin

Laboratory Manager

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Analytical Report

NUWC Div. Keyport
610 Dowell St.
Keyport, WA 98345

Project Saltwater Tank
Sampler Kenneth Eiford
Date Received 02/09/2023

QC Results Summary

Test	Test Date	Type of QC	Result	
4303	pH	2/10/2023	RPD Standard: LCS	0.9 Pass
4308	Total Suspended Solids (TSS)	2/13/2023	Blank: Blank RPD Standard: LCS	0.1 4.2 Pass
4319	Biochemical Oxygen Demand	2/10/2023	Blank: Blank RPD Standard: LCS	0.1 13.3 Pass
4322	pH	2/10/2023	RPD Standard: LCS	0.9 Pass

Approved By



Angela Kaelin
Laboratory Manager

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These results relate only to the items tested and the sample(s) as received by the laboratory. This report shall not be reproduced except in full, without prior express written approval by Spectra Laboratories.

Sample was received in 1 liter bottle

Client Information

Company/Client: NWUC Keyport
 Address: 610 Dowell Street, Bldg. 1051
 City: Keyport State: WA Zip: 98345
 Project Manager/Report To: Kenneth Eiford
 Project Name: Saltwater Tank Sampled by: Kenneth Eiford
 Telephone No: 360-315-9531 Fax No: _____
 Email address: Kenneth.l.eiford.eiv@us.navy.mil

Project Information

Sample ID	Date	Time	Matrix	Hazard	Lab ID
1023-3039-478	2/9/23	0852	NWUC		223629-01

Test Parameters Required

Number of Containers	1
Metals (Specify):	
BOD	X
CBOD	
COD	
HEM	
SGT	
(Oil & Grease/TPH)	
Solids: TDS	
Turbidity	X
pH	X
Nitrate-N	
Ammonia-N	
Orthophosphate-P	
Nitrate+Nitrite-N	
TKN	
Total Phosphorous	
TTO	
Total Suspended Solids	X
Fecal Coliform: MPN or MF	
Ag Soil: SAP Initial SAP crop:	

- Routine Disposal
- Return to Client
- Hazardous sample disposal (Cost of disposal will be billed to client)

Special Instructions: Payment via gov. purchase card. See attached email for instructions. Investigative

Sample Receipt: 1

Total # of containers: 1

COC seals present? Y Intact? Y

Temp at receipt? 93 °C

Samples Intact? Y

Received Via: Client

Turn-around Time Requirement

Standard (10 Business days)

Rush (specify date needed) ‡

Other (specify) _____

‡ additional charges may apply

Relinquished by: Kenneth Eiford (Signature) Company: NWUC Keyport Date: 2/9/23 Time: 0945

Received by: Angelle Barrows (Signature) Company: Spectra Date: 2/9/23 Time: 945

Relinquished by: _____ (Signature) Company: _____ Date: _____ Time: _____

Received by: _____ (Signature) Company: _____ Date: _____ Time: _____



Dangerous Waste Characterization

Sample ID: 1023-7053-01

Report date: March 1, 2017

Submitted to:

NUWC Keyport
610 Dowell Street
Keyport, WA 98345

Rainier Environmental
5013 Pacific Hwy East
Suite 20
Tacoma, WA 98424

1.0 INTRODUCTION

A dangerous waste characterization using the test organism *Oncorhynchus mykiss* (rainbow trout) was conducted on one sample submitted by NUWC Keyport to Rainier Environmental. Testing was conducted following the Washington State Department of Ecology Publication 80-12.

2.0 METHODS

The sample, identified as 1023-7053-01, was received in the laboratory on February 21, 2017. Upon arrival at the laboratory the sample was inspected and contents verified against information provided on the chain-of-custody form. The sample was stored at 4°C in the dark until use. The test procedure is outlined in Table 1.

Table 1. Summary of Dangerous Waste Characterization Test Conditions

Parameter	Standard Fish Toxicity Test
Test number	1702-044
Sample ID	1023-7053-01
Test initiation date; time	2/24/2017; 1015h
Test termination date; time	2/28/2017; 1045h
Endpoint	Mortality at 96-hours
Test chamber	7.5 L Plastic tank
Test temperature	12 ± 1°C
Dilution water	Moderately hard synthetic water
Test solution volume	6 L
Test concentrations (mg/L)	100, 10, 0
Number of organisms/ chamber	10
Number of replicates	3
Test organism	<i>Oncorhynchus mykiss</i> (rainbow trout)
Feeding	No feeding during test
Photoperiod	16 hours light/ 8 hours dark
Extraction	Rotary agitation (30 +/- 2 rpm) for 18 hours
Reference Toxicant	Copper sulfate
Deviations	None

The test organisms used in the test are outlined in Table 2. The sample was tested using fish received on January 11, 2017.

Table 2. Test organisms (*Oncorhynchus mykiss*)

Test organism age	64 days post swim-up (hatch date 11/21/2016)
Mean weight	0.37 g
Mean length	37 mm
Ratio of longest to shortest	1.3
Loading	0.62 g/L
Test organism source	Trout Lodge; Sumner, WA

3.0 RESULTS

A summary of results for the dangerous waste characterization conducted on sample 1023-7053-01 is contained in Table 3. There was no mortality in the test. Based on these results, the sample does not designate as dangerous or extremely hazardous waste. Copies of the laboratory bench sheets, statistical summaries of reference toxicant tests, and chain-of-custody form are provided in Appendices A through C.

Table 3. Summary of Results

Sample ID	Concentration (mg/L)	Survival (# fish, N=30)	Percent Mortality	Dangerous Waste Designation
Control	0	30	0	NA
1023-7053-01	10	30	0	None
	100	30	0	

4.0 QUALITY ASSURANCE

The most recently completed reference toxicant test was initiated January 25, 2017. The LC₅₀ of 126 µg/L copper fell within the acceptable range of mean ± two standard deviations of historical test results indicating that the test organisms were of an appropriate degree of sensitivity. The coefficient of variation (CV) for the last 21 tests was 27.8 percent, which is considered excellent by the Biomonitoring Science Advisory Board.

5.0 REFERENCES

- WDOE. 2008. Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria. Washington State Department of Ecology. Water Quality Program. Publication number: WQ-R-95-80, Revised December 2008.
- WDOE. 2009. Biological Testing Methods 80-12 for the Designation of Dangerous Waste. Washington State Department of Ecology. Hazardous Waste and Toxics Reduction Program. Publication number: 80-12, Revised June 2009.

Appendix A
***Oncorhynchus mykiss* Dangerous Waste Toxicity Test**
Raw Bench Sheets

Appendix B
Reference Toxicant Test
Control Chart and Statistical Summary

Fish 96-h Acute Survival Test

Rainier Environmental Laboratory

Test Type: Survival (96h)

Organism: Oncorhynchus mykiss (Rainbow Tro

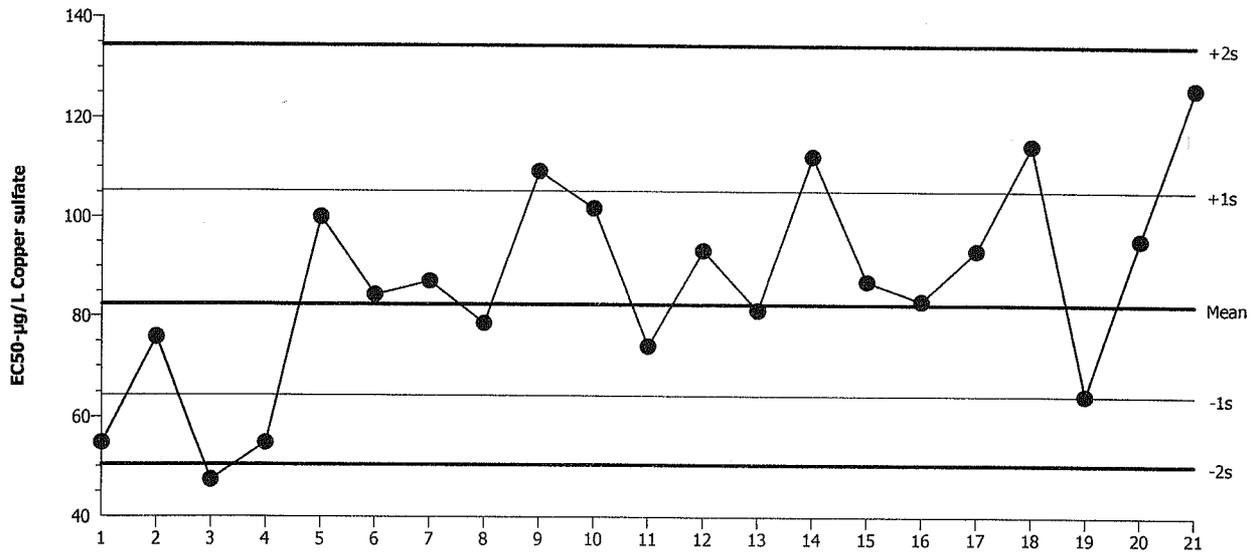
Material: Copper sulfate

Protocol: Not Applicable

Endpoint: 96h Survival Rate

Source: Reference Toxicant-REF

Fish 96-h Acute Survival Test



Mean: 82.35 Count: 20 -1s Warning Limit: 64.43 -2s Action Limit: 50.41
 Sigma: NA CV: 27.80% +1s Warning Limit: 105.3 +2s Action Limit: 134.5

Quality Control Data

Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2015	Apr	3	54.84	-27.51	-1.657	(-)		05-4256-3553	21-3677-7651
2		May	6	75.79	-6.566	-0.3386			17-0309-5731	08-3430-0742
3		Jun	3	47.32	-35.03	-2.257	(-)	(-)	10-2761-8033	20-2414-3583
4			29	54.84	-27.51	-1.657	(-)		20-0524-2368	17-1047-3702
5		Aug	1	100	17.65	0.7912			04-9563-2562	07-9301-1324
6			27	84.34	1.985	0.09707			14-9278-6104	03-1603-2957
7		Oct	2	87.06	4.703	0.2263			07-5049-7357	00-0455-0404
8		Nov	4	78.6	-3.755	-0.1902			15-5309-1620	09-4295-1286
9		Dec	3	109.2	26.86	1.15	(+)		00-4302-0811	06-8646-3269
10	2016	Jan	6	101.8	19.43	0.8631			03-0126-0157	10-2418-7192
11		Feb	12	74.05	-8.297	-0.4327			20-1307-5735	00-6625-2007
12		Mar	11	93.3	10.95	0.5088			04-5855-6937	21-4494-8529
13		Apr	14	81.23	-1.127	-0.05613			12-6392-6480	08-8601-0446
14		May	13	112.2	29.89	1.262	(+)		06-1725-7107	05-5954-7512
15		Jun	28	87.06	4.703	0.2263			17-2019-6071	03-3667-6651
16		Aug	2	83.12	0.772	0.03802			18-3529-7359	04-6169-6946
17		Sep	9	93.3	10.95	0.5088			14-8001-5549	17-5446-1853
18		Oct	13	114.5	32.11	1.342	(+)		01-3356-4134	03-9174-4425
19		Nov	16	64.47	-17.88	-0.9976			00-9981-0415	01-2788-3133
20		Dec	21	95.48	13.13	0.6029			00-4678-3392	07-2943-2050
21	2017	Jan	25	126	43.64	1.733	(+)		00-0066-8952	04-6372-2628

CETIS Summary Report

Report Date: 30 Jan-17 12:38 (p 1 of 1)
 Test Code: RA012517OM | 00-0066-8952

Fish 96-h Acute Survival Test

Rainier Environmental Laboratory

Batch ID: 09-2895-8287	Test Type: Survival (96h)	Analyst: Eric Tollefson
Start Date: 25 Jan-17 15:30	Protocol: Not Applicable	Diluent: Mod-Hard Synthetic Water
Ending Date: 29 Jan-17 15:00	Species: Oncorhynchus mykiss	Brine:
Duration: 95h	Source: Trout Lodge Fish Farm	Age: 72
Sample ID: 00-5424-8071	Code: RA012517OM	Client: Internal Lab
Sample Date: 25 Jan-17	Material: Copper sulfate	Project:
Receive Date: 25 Jan-17	Source: Reference Toxicant	
Sample Age: 16h	Station: In House	

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
00-8236-8237	96h Survival Rate	50	100	70.71	9.06%		Dunnett Multiple Comparison Test

Point Estimate Summary

Analysis ID	Endpoint	Level	µg/L	95% LCL	95% UCL	TU	Method
04-6372-2628	96h Survival Rate	LC50	126	114.7	138.5		Spearman-Kärber

96h Survival Rate Summary

C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	3	1	1	1	1	1	0	0	0.0%	0.0%
25		3	1	1	1	1	1	0	0	0.0%	0.0%
50		3	1	1	1	1	1	0	0	0.0%	0.0%
100		3	0.8333	0.7902	0.8765	0.7	0.9	0.06667	0.1155	13.86%	16.67%
200		3	0	0	0	0	0	0	0		100.0%
400		3	0	0	0	0	0	0	0		100.0%

96h Survival Rate Detail

C-µg/L	Control Type	Rep 1	Rep 2	Rep 3
0	Dilution Water	1	1	1
25		1	1	1
50		1	1	1
100		0.9	0.9	0.7
200		0	0	0
400		0	0	0

96h Survival Rate Binomials

C-µg/L	Control Type	Rep 1	Rep 2	Rep 3
0	Dilution Water	10/10	10/10	10/10
25		10/10	10/10	10/10
50		10/10	10/10	10/10
100		9/10	9/10	7/10
200		0/10	0/10	0/10
400		0/10	0/10	0/10

Appendix C
Chain-of-Custody Form

Sample Collection By: Dale Hunt

Report to:

Company: **NUWC Keyport**
Address: 610 Dowell Street
City/State/zip: Keyport WA 98345
Contact: AUSTINE STULL
Phone: 360-396-7991
Email: christine.stull@navy.mil

Invoice To:

Company: **NUWC Keyport**
Address: 610 Dowell Street
City/State/zip: Keyport WA 98345
Contact: DAVID D. BOOTH
Phone: 360-315-7854
Email: david.d.booth@navy.mil

ANALYSES REQUIRED

Receipt Temperature (°C)

SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	NO. OF CONTAINERS	COMMENTS
1 1033-7053-01	2/21/17	8:00 am		950 ml glass	1	PO# 4521222897 BSS WASTE WATER
2						
3						
4						
5						
6						
7						
8						
9						
10						

PROJECT INFORMATION

SAMPLE RECEIPT

RELINQUISHED BY (CLIENT)

RELINQUISHED BY (COURIER)

Client:	Total No. of Containers	Signature	Signature
PO No.:	Received Good Conditions?	Dale Hunt	ERIC TOLLEFSON
Shipped Via:	Matches Test Schedule?	NUWC Keyport	1037

SPECIAL INSTRUCTIONS/COMMENTS:

RECEIVED BY (COURIER)

RECEIVED BY (LABORATORY)

(Signature)	(Time)	(Signature)	(Time)
(Printed Name)	(Date)	(Printed Name)	(Date)
(Company)		(Company)	



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Certificate of Analysis

NUWC Div. Keyport
610 Dowell St.
Keyport, WA 98345

Date Received: 5/18/2017

Date Reported: 5/25/2017

Sampler:

Project: BSS Water

Test	Result	Units	Method	Test Date	Initials
168444-01	1023-7138-01			Date Sampled: 5/18/2017	
Cadmium	10.8	µg/L	EPA 200.7	5/23/2017	KW
Chromium	140	µg/L	EPA 200.7	5/23/2017	KW
Copper	861	µg/L	EPA 200.7	5/24/2017	KW
Lead	28.8	µg/L	EPA 200.7	5/24/2017	KW
Nickel	42.5	µg/L	EPA 200.7	5/23/2017	KW
Silver	<1.1	µg/L	EPA 200.7	5/23/2017	KW
Zinc	813	µg/L	EPA 200.7	5/24/2017	KW
168444-03	1023-7138-03			Date Sampled: 5/18/2017	
Total Suspended Solids	25	mg/L	SM 2540 D	5/19/2017	BK

Approved For Release


Nancy Parrott, Laboratory Supervisor



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05/31/2017

Spectra Laboratories-Kitsap, LLC *MP*
26276 Twelve Trees Lane
Suite C
Poulsbo, WA 98370

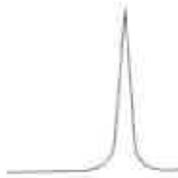
P.O.#: 168444
Project: BSS Water
Client ID: 1023-7138-02
Sample Matrix: Liquid
Date Sampled: 05/18/2017
Date Received: 05/18/2017
Spectra Project: 2017050589
Spectra Number: 1

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>
Total Cyanide	0.02	mg/L	SM 4500-CN ⁻ E

PARTIAL RESULTS
Final report will follow as soon as complete.

SPECTRA LABORATORIES


Tracey Cooper, Laboratory Manager
a6/mlh



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06/05/2017

Spectra Laboratories-Kitsap, LLC *XP*
26276 Twelve Trees Lane
Suite C
Poulsbo, WA 98370

P.O.#: 168444
Project: BSS Water
Client ID: 1023-7138-04
Sample Matrix: Liquid
Date Sampled: 05/18/2017
Date Received: 05/18/2017
Spectra Project: 2017050589
Spectra Number: 2

Analyte
TTO

Result
<1000

Units
µg/L

Method
EPA 624

SPECTRA LABORATORIES


Jeffrey Cooper, Laboratory Manager
a5jac



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May 25, 2017

Gary Simmons
NUWC Div Keyport
610 Dowell St Bldg 825
Keyport, WA 98345

Project: BSS Water
Sample Date: 5/18/17 0730

Lab Work Order#: 168444
Sample Received: 5/18/17 1200

Digested Laboratory Check Standard

Test Parameter	QC Sample ID	True Value ug/L	Result ug/L	% Recovery	Date Analyzed	Method
Cadmium	LCS052217-1	100	98.8	98.8	5/23/17	EPA 200.7
Chromium	LCS052217-1	100	104	104	5/23/17	EPA 200.7
Copper	LCS052217-1	100	97.3	97.3	5/24/17	EPA 200.7
Lead	LCS052217-1	100	108	108	5/24/17	EPA 200.7
Nickel	LCS052217-1	100	104	104	5/23/17	EPA 200.7
Silver	LCS052217-1	100	101	101	5/23/17	EPA 200.7
Zinc	LCS052217-1	100	110	110	5/24/17	EPA 200.7

Digest Blank

Test Parameter	Blank ID	Result mg/L	Date Analyzed	Method
Cadmium	MBLK052217-1	<1	5/23/17	EPA 200.7
Chromium	MBLK052217-1	<1	5/23/17	EPA 200.7
Copper	MBLK052217-1	<3.0	5/24/17	EPA 200.7
Lead	MBLK052217-1	<3.0	5/24/17	EPA 200.7
Nickel	MBLK052217-1	<1	5/23/17	EPA 200.7
Silver	MBLK052217-1	<1.1	5/23/17	EPA 200.7
Zinc	MBLK052217-1	<3.0	5/24/17	EPA 200.7

Laboratory Check Standard

Test Parameter	QC Sample ID	True Value mg/L	Result mg/L	% Recovery	Date Analyzed	Method
Total Suspended Solids	GC 17019	100	92.0	92.0	5/19/17	SM2540 D

Blank

Test Parameter	Result mg/L	Date Analyzed	Method
Total Suspended Solids	<4	5/19/17	SM2540 D

Approved for Release,

Nancy Parrott
Laboratory Supervisor
WDOE Accreditation #C594

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OK per Gary

Client Information				Test Parameters Required													
Company/Client: Naval Undersea Warfare Center Address: 610 Dowell St City: Keyport State: WA Zip: 98345				Circle the desired parameters above if multiple tests are listed on the same line													
Project Information Project Manager/Report To: Gary Simmons Project Name: BSS Water Sampled by: Devin Telephone No: 360-315-8571 Fax No: Email address: gary.d.simmons@navy.mil				Number of Containers TCLP Metals: As Ba Cd Cr Pb Hg Se Ag Metals: As Cd Cr Cu Pb Hg Mo Ni S6 Ag Zn Metals: Cd Cr Cu Pb Ni Ag Zn Cyanide Oil & Grease TSS Ammonia Nitrate+Nitrite TKN pH % Moisture Flash Point TPO													
Sample ID	Date	Time	Matrix	Hazard	Lab ID	Special Instructions											
1023-7138-01	5/18/2017	0730	Liquid		168444-01	<input checked="" type="checkbox"/> Routine Disposal <input type="checkbox"/> Return to Client <input type="checkbox"/> Hazardous sample disposal (Cost of disposal will be billed to client)											
1023-7138-02	5/18/2017	0730	Liquid		-02	<input checked="" type="checkbox"/> Metals: As Cd Cr Cu Pb Hg Mo Ni S6 Ag Zn <input checked="" type="checkbox"/> Cyanide <input checked="" type="checkbox"/> Oil & Grease <input checked="" type="checkbox"/> TSS <input checked="" type="checkbox"/> Ammonia <input checked="" type="checkbox"/> Nitrate+Nitrite <input checked="" type="checkbox"/> TKN <input checked="" type="checkbox"/> pH % Moisture <input checked="" type="checkbox"/> Flash Point <input checked="" type="checkbox"/> TPO											
1023-7138-03	5/18/2017	0730	Liquid		-03	<input checked="" type="checkbox"/> Metals: As Cd Cr Cu Pb Hg Mo Ni S6 Ag Zn <input checked="" type="checkbox"/> Cyanide <input checked="" type="checkbox"/> Oil & Grease <input checked="" type="checkbox"/> TSS <input checked="" type="checkbox"/> Ammonia <input checked="" type="checkbox"/> Nitrate+Nitrite <input checked="" type="checkbox"/> TKN <input checked="" type="checkbox"/> pH % Moisture <input checked="" type="checkbox"/> Flash Point <input checked="" type="checkbox"/> TPO											
1023-7138-04	5/18/2017	0730	Liquid		-04	<input checked="" type="checkbox"/> Metals: As Cd Cr Cu Pb Hg Mo Ni S6 Ag Zn <input checked="" type="checkbox"/> Cyanide <input checked="" type="checkbox"/> Oil & Grease <input checked="" type="checkbox"/> TSS <input checked="" type="checkbox"/> Ammonia <input checked="" type="checkbox"/> Nitrate+Nitrite <input checked="" type="checkbox"/> TKN <input checked="" type="checkbox"/> pH % Moisture <input checked="" type="checkbox"/> Flash Point <input checked="" type="checkbox"/> TPO											
12						<input checked="" type="checkbox"/> Routine Disposal <input type="checkbox"/> Return to Client <input type="checkbox"/> Hazardous sample disposal (Cost of disposal will be billed to client)											

Sample Receipt:

Total # of containers: 5

COC seals present? intact?

Temp at receipt? 20.7 °C

Samples intact?

Received Via: Client

Turn-around Time Requirement
 Standard (10 Business days)
 Rush (5 days) ‡
 Other (specify) _____

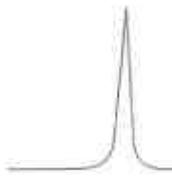
‡ additional charges may apply

Relinquished by: Chris Stull (print) Chris Stull (Signature) Company: NUWC Keyport Date: 5/18/17 Time: 12:00

Received by: Angela Baracus (print) Angela Baracus (Signature) Company: Spectra Date: 5/18/17 Time: 1200

Relinquished by: _____ (print) _____ (Signature) Company: _____ Date: _____ Time: _____

Received by: _____ (print) _____ (Signature) Company: _____ Date: _____ Time: _____



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02/09/2017

Spectra Laboratories-Kitsap, LLC ^{NP}
26276 Twelve Trees Lane
Suite C
Poulsbo, WA 98370

P.O.#: 165775
Project: BSS Washwater
Client ID: 1023-7031-02
Sample Matrix: Liquid
Date Sampled: 02/03/2017
Date Received: 02/06/2017
Spectra Project: 2017020125
Spectra Number: 1

Rush

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Water by Distillation	84	vol. %	ASTM D-95	1,2-Dichlorobenzene	<100	µg/L	SW846 8260C
pH	6.28	pH	SM 4500-H+ B	1,2-Dichloroethane	<100	µg/L	SW846 8260C
TCLP Arsenic	< 0.05	mg/L	SW846 6010C	1,2-Dichloropropane	<100	µg/L	SW846 8260C
TCLP Barium	0.008	mg/L	SW846 6010C	1,3-Dichlorobenzene	<100	µg/L	SW846 8260C
TCLP Cadmium	0.012	mg/L	SW846 6010C	1,3-Dichloropropane	<100	µg/L	SW846 8260C
TCLP Chromium	0.107	mg/L	SW846 6010C	1,4-Dichlorobenzene	<100	µg/L	SW846 8260C
TCLP Lead	0.06	mg/L	SW846 6010C	2,2-Dichloropropane	<100	µg/L	SW846 8260C
TCLP Selenium	< 0.05	mg/L	SW846 6010C	2-Chlorotoluene	<100	µg/L	SW846 8260C
TCLP Silver	< 0.007	mg/L	SW846 6010C	4-Chlorotoluene	<100	µg/L	SW846 8260C
TCLP Mercury	<0.0002	mg/L	SW846 7470A	Bromochloromethane	<100	µg/L	SW846 8260C
1,1,1,2-Tetrachloroethane	<100	µg/L	SW846 8260C	Bromodichloromethane	<100	µg/L	SW846 8260C
1,1,1-Trichloroethane	<100	µg/L	SW846 8260C	Carbon Tetrachloride	<100	µg/L	SW846 8260C
1,1,2,2-Tetrachloroethane	<100	µg/L	SW846 8260C	Chlorobenzene	<100	µg/L	SW846 8260C
1,1,2-Trichloroethane	<100	µg/L	SW846 8260C	Chlorodibromomethane	<100	µg/L	SW846 8260C
1,1-Dichloroethane	<100	µg/L	SW846 8260C	Chloroethane	<100	µg/L	SW846 8260C
1,1-Dichloroethene	<100	µg/L	SW846 8260C	Chloroform	<100	µg/L	SW846 8260C
1,1-Dichloropropene	<100	µg/L	SW846 8260C	Chloromethane	<100	µg/L	SW846 8260C
1,2,3-Trichlorobenzene	<100	µg/L	SW846 8260C	Dichlorodifluoromethane	<100	µg/L	SW846 8260C
1,2,3-Trichloropropane	<100	µg/L	SW846 8260C	Hexachlorobutadiene	<100	µg/L	SW846 8260C
1,2,4-Trichlorobenzene	<100	µg/L	SW846 8260C	Methylene chloride	<100	µg/L	SW846 8260C
1,2-Dibromo3Chloropropane	<1000	µg/L	SW846 8260C	Tetrachloroethene	<100	µg/L	SW846 8260C

Surrogate	Recovery	Method
Toluene-d8	112	SW846 8260C
Dibromofluoromethane	154	SW846 8260C
1,2-Dichloroethane-d4	158	SW846 8260C
4-Bromofluorobenzene	64.2	SW846 8260C

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Jeffrey Cooper, Laboratory Manager

a14/jac



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02/09/2017

Spectra Laboratories-Kitsap, LLC ⁷¹²
26276 Twelve Trees Lane
Suite C
Poulsbo, WA 98370

P.O.#: 165775
Project: BSS Washwater
Client ID: 1023-7031-02
Sample Matrix: Liquid
Date Sampled: 02/03/2017
Date Received: 02/06/2017
Spectra Project: 2017020125
Spectra Number: 1
Rush

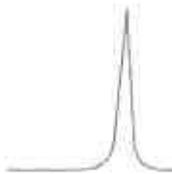
Analyte	Result	Units	Method
Trichloroethene	<100	µg/L	SW846 8260C
Trichlorofluoromethane	<100	µg/L	SW846 8260C
Vinyl chloride	<100	µg/L	SW846 8260C
cis-1,2-Dichloroethene	<100	µg/L	SW846 8260C
cis-1,3-Dichloropropene	<100	µg/L	SW846 8260C
trans-1,2-Dichloroethene	<100	µg/L	SW846 8260C
trans-1,3-Dichloropropene	<100	µg/L	SW846 8260C

Analyte	Result	Units	Method
---------	--------	-------	--------

Surrogate	Recovery	Method
Toluene-d8	112	SW846 8260C
Dibromofluoromethane	154	SW846 8260C
1,2-Dichloroethane-d4	158	SW846 8260C
4-Bromofluorobenzene	64.2	SW846 8260C

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February 9, 2017

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26276 Twelve Tree Lane
Suite C
Poulsbo, WA 98370

MP

Sample matrix: Water

Spectra Project:
Spectra #
Applies to Sample #1

Date Received:
Date Analyzed:
Dilution:
<= less than
2017020125
Method Blank

2/8/2017
2/7/2017
1

VOLATILE ORGANIC ANALYSIS

METHOD 624/8260

Compound	ug/L	Compound	ug/L
Acetone	< 10.00	1,2-Dichloropropane	< 1.00
Acrolein	< 10.00	1,3-Dichloropropane	< 1.00
Acrylonitrile	< 10.00	cis-1,3-Dichloropropene	< 1.00
Benzene	< 1.00	trans-1,3-Dichloropropene	< 1.00
Bromobenzene	< 1.00	2,2-Dichloropropane	< 1.00
Bromochloromethane	< 1.00	1,1-Dichloropropene	< 1.00
Bromodichloromethane	< 1.00	Ethylbenzene	< 1.00
Bromoform	< 1.00	2-Hexanone (MBK)	< 10.00
Bromomethane	< 1.00	Hexachlorobutadiene	< 1.00
2-Butanone (MEK)	< 10.00	Iodomethane	< 10.00
n-Butylbenzene	< 1.00	isopropylbenzene	< 1.00
sec-Butylbenzene	< 1.00	p-Isopropyltoluene	< 1.00
tert-Butylbenzene	< 1.00	Methylene chloride	< 1.00
Carbon Disulfide	< 10.00	4-Methyl-2-pentanone (MIBK)	< 10.00
Carbon tetrachloride	< 1.00	MTBE	< 1.00
Chlorobenzene	< 1.00	Naphthalene	< 1.00
Chlorodibromomethane	< 1.00	n-Propylbenzene	< 1.00
Chloroethane	< 1.00	Styrene	< 1.00
2-Chloroethyl Vinyl ether	< 10.00	1,1,1,2-Tetrachloroethane	< 1.00
Chloroform	< 1.00	1,1,2,2-Tetrachloroethane	< 1.00
Chloromethane	< 1.00	Tetrachloroethane	< 1.00
2-Chlorotoluene	< 1.00	Toluene	< 1.00
4-Chlorotoluene	< 1.00	Total Xylenes	< 2.00
1,2-Dibromo-3-Chloropropane (DBCP)	< 10.00	1,2,3-Trichlorobenzene	< 1.00
1,2-Dibromoethane (EDB)	< 1.00	1,2,4-Trichlorobenzene	< 1.00
Dibromomethane	< 1.00	1,1,1-Trichloroethane	< 1.00
1,2-Dichlorobenzene	< 1.00	1,1,2-Trichloroethane	< 1.00
1,3-Dichlorobenzene	< 1.00	Trichloroethene	< 1.00
1,4-Dichlorobenzene	< 1.00	Trichlorofluoromethane	< 1.00
Dichlorodifluoromethane	< 1.00	1,2,3-Trichloropropane	< 1.00
1,1-Dichloroethane	< 1.00	1,2,4-Trimethylbenzene	< 1.00
1,2-Dichloroethane	< 1.00	1,3,5-Trimethylbenzene	< 1.00
1,1-Dichloroethene	< 1.00	Vinyl Acetate	< 10.00
cis-1,2-Dichloroethene	< 1.00	Vinyl chloride	< 1.00
trans-1,2-Dichloroethene	< 1.00		

SURROGATE RECOVERIES

Dibromofluoromethane	118	%
1,2-Dichloroethane-d4	123	%
Toluene-d8	109	%
4-Bromofluorobenzene	88.3	%

Laboratory Manager



February 9, 2017

Spectra Laboratories-Kitsap, LLC ^{MP}
26276 TwelveTrees Lane
Suite C
Poulsbo, WA 98370

Sample Matrix: Water
EPA Method: 8260C
Spectra Project: 2017020125
Date Analyzed: 2/7/2016
Units: ug/L
Applies to Spectra #'s: #1

**GCMS VOLATILE ORGANIC ANALYSIS
Laboratory Control Sample (LCS) Results**

COMPOUND	SAMPLE RESULT	SPIKE AMOUNT	SPIKE RESULT	LCS %REC
1,1-Dichloroethene	<1	10.00	10.50	105
Benzene	<1	10.00	9.99	100
Trichloroethene	<1	10.00	9.10	91
Toluene	<1	10.00	11.50	115
Chlorobenzene	<1	10.00	11.10	111

Surrogate Recoveries (%)	LCS
Dibromofluoromethane	103
1,2-Dichloroethane-d4	103
Toluene-d8	119
4-Bromofluorobenzene	87


Jeffrey Cooper
Laboratory Manager

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2/7/2017

Spectra Laboratories - Kitsap, LLC *MP*
 26276 Twelve Tress Lane, Suite C
 Poulsbo, WA 98370

Units: mg/L
 Spectra Project: 2017020125
 Applies to Spectra #'s: 1
 Analyst: SCJ

QUALITY CONTROL RESULTS
ICP Metals SW846 6010C - TCLP Extract

Method Blank

Date Digested: 2/7/2017 Date Analyzed: 2/7/2017

Element	Blank Result
Arsenic	< 0.05
Barium	< 0.002
Cadmium	< 0.003
Chromium	< 0.007
Lead	< 0.04
Selenium	< 0.05
Silver	< 0.007

Laboratory Control Sample (LCS)

Date Digested: 2/7/2017 Date Analyzed: 2/7/2017

Element	Spike Added	LCS Conc.	LCS %Rec
Arsenic	1.0	1.031	103.1
Barium	1.0	0.960	96.0
Cadmium	1.0	1.000	100.0
Chromium	1.0	0.998	99.8
Lead	1.0	1.009	100.9
Selenium	1.0	1.039	103.9
Silver	1.0	1.014	101.4

LCS Recovery limits 80-120%

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Digested: 2/7/2017 Date Analyzed: 2/7/2017

Sample Spiked: 2017020029-1

Element	Sample Conc.	Spike Conc.	MS Conc.	MS %Rec	MSD Conc.	MSD %Rec	RPD
Arsenic	0.256	1.0	1.188	93.2	1.159	90.3	3.2
Barium	0.075	1.0	1.123	104.8	1.122	104.7	0.1
Cadmium	0.038	1.0	1.109	107.1	1.117	107.9	0.7
Chromium	3.111	1.0	4.092	98.1	4.140	102.9	4.8
Lead	0.074	1.0	1.131	105.7	1.143	106.9	1.1
Selenium	0.000	1.0	1.009	100.9	1.023	102.3	1.4
Silver	0.000	1.0	1.120	112.0	1.144	114.4	2.1

Comment:

Recovery Limits 75-125%

RPD Limit 20

SPECTRA LABORATORIES


 Jeffrey Cooper
 Laboratory Manager

February 7, 2017

Spectra Laboratories - Kitsap ^{NP}
 26276 Twelve Trees Lane, Suite C
 Poulsbo, WA 98370

Method: SW846 7470A
 Spectra Project: 2017020125
 Applies to Spectra #'s 1
 Sample Matrix: TCLP Extract

**MERCURY
 QUALITY CONTROL RESULTS**

Units:		MS/MSD				Date Analyzed:	
mg/L						2/7/17	
<u>Spike Sample</u>	<u>Sample Result</u>	<u>Spike Amount Added</u>	<u>MS Result</u>	<u>% Recovery</u>	<u>MSD Result</u>	<u>% Recovery</u>	<u>RPD</u>
2016020053-3	0.0000	0.0040	0.00370	92.5	0.00376	94.0	1.6

Units		BLANK SPIKE (LCS)			Date Analyzed:		
mg/L						2/7/17	
<u>Spike Sample</u>	<u>Sample Result</u>	<u>Spike Amount Added</u>	<u>MS Result</u>	<u>% Recovery</u>			
LCS	< 0.0002	0.0050	0.00470	94.0			
Recovery Limit: 80-120%							

Units:		METHOD BLANK				Date Analyzed:	
mg/L						2/7/17	
Mercury	< 0.0002						

SPECTRA LABORATORIES


 Jeffrey Cooper, Laboratory Manager

Company/Client: NAVAL UNDERSEA WARFARE CENTER
Address: 510 DOWELL STREET
City: KEYPORT
State: WA
Zip: 98311

Project Manager/Report To: CHRISTINE STULL
Project Name: BSS Washwater
Sampled by: Dale Hunt
Telephone No.: 360-396-7991
Fax No.: 360-396-7667
Email address: CHRISTINE.STULL@NAVY.MIL

Project Information

Sample ID	Date	Time	Matrix	Hazard	Lab ID
1023-7031-02	8-3-17	12:00	Liquid		115775-01
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

Number of Containers	1
RCRA TCLP Metals: As Ba Cd Cr Pb Hg Se Ag	1
Priority Pollutant Metals: Sb As Be Cr Cu Pb Hg Ni Se Ag Tl Zn	
503 Regs: As Cd Cu Pb Hg Mo Ni Se Zn	
Metals (Specify):	
BOD CBOD COD	
HEM SGT (Oil & Grease/TPH)	
Solids: TDS TSS TVS TVSS TS	
Turbidity pH	1
Nitrate-N Ammonia-N Orthophosphate-P	
Nitrate+Nitrite-N	
TKN Total Phosphorus	
Water Content	
HOC EPA 9020 :	8260

Routine Disposal
 Return to Client
 Hazardous sample disposal
 (Cost of disposal will be billed to client)

Special Instructions:

Sample Receipt: Total # of containers 3
 COC seals present? N Intact?
 Temp at receipt? 16.6 °C
 Samples intact? Y
 Received Via: Direct
 Turn-around-Time: 10 business days
 Standard (10 Business days)
 Rush (Specify date needed) #
 Other (Specify) _____
 † additional charges may apply

Relinquished by: Dale Hunt (Signature) DLH (print) Company NWCC Keyport Date 8-3-17 Time 1:08 pm
 Received by: Angela Burrows (Signature) Angela Burrows (print) Company Spectra Date 2/3/17 Time 108
 Relinquished by: _____ (Signature) _____ (print) Company _____ Date _____ Time _____
 Received by: _____ (Signature) _____ (print) Company _____ Date _____ Time _____

5 days

Samples received after 12 noon will be considered as received the following business day

Safety Data Sheet

General Purpose Detergent (Liquid Nonionic)

SDS Revision Date:

08/23/2018



1. Identification

1.1. Product identifier

Product Identity

General Purpose Detergent (Liquid Nonionic)

Alternate Names

Specification: MIL-D-16791G, Type I
 LHB Part Number: 1064006, 1064007, 1064008
 National Stock Number: 7930-00-282-9699,
 7930-00-985-6911, 7930-00-282-9700,
 CAGE Code: 1A864

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use

See Technical Data Sheet.

Application Method

See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name

LHB Industries
 8833 Fleischer Place
 Berkeley, MO 63134

Emergency
24 hour Emergency Telephone No.

(800) 633-8253 (PERS)

Customer Service: LHB Industries

(314) 423-4333

2. Hazard(s) identification

2.1. Classification of the substance or mixture

Acute Tox. 4;H302	Harmful if swallowed.
Skin Irrit. 2;H315	Causes skin irritation.
Eye Dam. 1;H318	Causes serious eye damage.

2.2. Label elements



Danger

Safety Data Sheet

General Purpose Detergent (Liquid Nonionic)

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H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

[Prevention]:

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves / eye protection / face protection.

[Response]:

P301+312 IF SWALLOWED: Call a POISON CENTER or doctor / physician if you feel unwell.

P302+352 IF ON SKIN: Wash with plenty of soap and water.

P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.

P310 Immediately call a POISON CENTER or doctor / physician.

P312 Call a POISON CENTER or doctor / physician if you feel unwell.

P321 Specific treatment (see information on this label).

P330 IF SWALLOWED: Rinse mouth.

P332+313 If skin irritation occurs: Get medical advice / attention.

P362 Take off contaminated clothing and wash before reuse.

[Storage]:

No GHS storage statements

[Disposal]:

P501 Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Nonylphenol polyethylene glycol ether CAS Number: 0127087-87-0	75 - 100	Eye Dam. 1;H318 Acute Tox. 4;H302 Skin Irrit. 2;H315	[1]

In accordance with paragraph (i) of §1910.1200, the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

[1] Substance classified with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

[3] PBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

Safety Data Sheet

General Purpose Detergent (Liquid Nonionic)

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Section 4. First aid measures

4.1. Description of first aid measures

General	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
Inhalation	Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious, place in the recovery position and obtain immediate medical attention. Give nothing by mouth.
Eyes	Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.
Skin	Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.
Ingestion	If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Overview	ROUTES OF EXPOSURE: Exposure may be by INGESTION, INHALATION and/or SKIN or EYE contact, depending on conditions of use. To minimize exposure, follow recommendations for proper use, ventilation, and personal protective equipment. EFFECTS OF OVEREXPOSURE: Irritation of eyes, skin and upper respiratory system. SIGNS AND SYMPTOMS OF OVEREXPOSURE: Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists. Redness and itching or burning sensation may indicate eye or excessive skin exposure. MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory, skin, eye, liver, kidney and lymphatic disorders. Treat symptomatically. See section 2 for further details.
Eyes	Causes serious eye damage.
Skin	Causes skin irritation.
Ingestion	Harmful if swallowed.

Section 5. Fire-fighting measures

5.1. Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO₂, powder, water spray.
Do not use: water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: Carbon Monoxide and Carbon Dioxide

5.3. Advice for fire-fighters

Water or foam may cause frothing

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Use water spray to keep fire-exposed containers cool. If a spill has ignited, use water spray to disperse the vapors. Use a water spray to flush spills away from a fire and to dilute spills to non-flammable mixtures. Do not flush into a storm drain or public sewer. Do not direct a solid stream of water or foam into hot, burning pools; this may cause frothing and increase fire intensity. Use self-contained breathing apparatus (SCBA) and proper personal protection clothing. There are no known unusual fire and explosion hazards associated with this material in its virgin form. However, in a firefighting scenario involving multiple chemicals, fire fighters should be aware of possible synergistic effects and attack the fire accordingly.

ERG Guide No. 171

Section 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Read entire label before using and follow all label directions.

6.2. Environmental precautions

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Wipe, scrape or soak up contents in an inert material. Pick up spill for recovery or disposal and place in a closed container

Section 7. Handling and storage

7.1. Precautions for safe handling

Keep out of reach of children. Do not take internally. Do not consume food, drink or smoke while handling this product.

See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Keep from freezing. Avoid storage in high temperatures or near open flame. Store in dry cool place.

Incompatible materials: Oxidizing agents and acids.

See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

No data available.

Safety Data Sheet

General Purpose Detergent (Liquid Nonionic)

SDS Revision Date:

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Section 8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0127087-87-0	Nonylphenol polyethylene glycol ether	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit

8.2. Exposure controls

Respiratory

If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.

Eyes

Wear safety glasses with side shields to protect the eyes. An eye wash station is suggested as a good workplace practice.

Skin

Wear overalls to keep skin contact to a minimum. Wear PVC or rubber gloves to keep skin contact to a minimum. Refer to the manufacturer's recommendations regarding the suitability of any gloves used.

Engineering Controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices

Avoid contact with skin and clothing. Wear suitable protective clothing. Body garments used should be based upon the task being performed (e.g., lab coat, chemical resistant protective suit, sleevelets, synthetic apron, gauntlets) to avoid exposed skin surfaces. Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details.

Section 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Colorless Liquid

Odor

Slight

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SDS Revision Date:

08/23/2018



Odor threshold	Not determined
pH	Not Measured
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	Not Measured
Flash Point	237.8 C PMCC
Evaporation rate (Ether = 1)	Slower than ether
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: Not determined Upper Explosive Limit: Not determined
Vapor pressure (Pa)	<1 mmHg @20 C
Vapor Density	Not Measured
Specific Gravity	1.06 (8.84 lb/gal)
Solubility in Water	>10%
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured
VOC Content	<1% by wt. (ASTM D 2369), <0.09 lbs/gal
9.2. Other information	No other relevant information.

Section 10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

No data available.

10.5. Incompatible materials

Oxidizing agents and acids.

10.6. Hazardous decomposition products

Carbon Monoxide and Carbon Dioxide

Safety Data Sheet

General Purpose Detergent (Liquid Nonionic)

SDS Revision Date:

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Section 11. Toxicological information

Acute toxicity

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
Nonylphenol polyethylene glycol ether - (127087-87-0)	No data available	No data available	No data available	No data available	No data available

Carcinogen Data

CAS No.	Ingredient	Source	Value
0127087-87-0	Nonylphenol polyethylene glycol ether	OSHA	Regulated Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

Classification	Category	Hazard Description
Acute toxicity (oral)	4	Harmful if swallowed.
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	2	Causes skin irritation.
Serious eye damage/irritation	1	Causes serious eye damage.
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

Safety Data Sheet

General Purpose Detergent (Liquid Nonionic)

SDS Revision Date:

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Section 12. Ecological information

12.1. Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Nonylphenol polyethylene glycol ether - (127087-87-0)	Not Available	Not Available	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

Section 13. Disposal considerations

13.1. Waste treatment methods

Observe all federal, state and local regulations when disposing of this substance.

Section 14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	UN3082	UN3082	UN3082
14.2. UN proper shipping name	UN3082, Environmentally hazardous substances, liquid, n.o.s., (NONYLPHENOL ETHOXYLATE), 9, III	Environmentally hazardous substances, liquid, n.o.s., (NONYLPHENOL ETHOXYLATE)	Environmentally hazardous substances, liquid, n.o.s., (NONYLPHENOL ETHOXYLATE)

Safety Data Sheet

General Purpose Detergent (Liquid Nonionic)

SDS Revision Date:

08/23/2018



14.3. Transport hazard class(es) **DOT Hazard Class:** 9 **IMDG:** 9 **Air Class:** 9
Sub Class: Not Applicable

14.4. Packing group III III III

14.5. Environmental hazards

IMDG Marine Pollutant: No;

14.6. Special precautions for user

No further information

Section 15. Regulatory information

Regulatory Overview

The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

Toxic Substance Control Act (TSCA)

All components of this material are either listed or exempt from listing on the TSCA Inventory.

WHMIS 1988 Classification

D2B E

US EPA Tier II Hazards

Fire: No

Sudden Release of Pressure: No

Reactive: No

Immediate (Acute): Yes

Delayed (Chronic): No

EPCRA 302 Extremely Hazardous:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 313 Toxic Chemicals:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

California PROP 65

This product contains a chemical that is at or below California Proposition 65's "safe harbor level" as determined via risk assessment. Therefore, the chemical is not required to be listed as a PROP 65 chemical on the SDS or label.

Safety Data Sheet
General Purpose Detergent (Liquid Nonionic)

SDS Revision Date:

08/23/2018



Section 16. Other information

SDS Revision Date 08/23/2018

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

IMPORTANT NOTE: This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Document

NAVAL UNDERSEA WARFARE CENTER, DIVISION KEYPORT
 610 Dowell Street, Keyport, WA 98345
 CODE 1023 CHEMISTRY TEST REPORT

Lab Number

C-77-22

Customer's Name Dale Hunt	Code 1023	Phone 6-2320	Date Submitted 2-2-22	Analyst(s) EK/BK
NWA Number 400000018072/0010	Weapon/Program Hazardous Waste		Sampling Method Coliwasa	
Sample Name BSS Waste Water	Date Sampled 2-2-22	Sample ID Number 1023-2033-01		
Location Bldg. 1051	Drum/Tank Number WAD	Lab Notebook Number 17C-87.53		

Background and Description of Service(s) Requested

Total Suspended Solids (TSS) Ammonia Total Permitted Discharge Metals

Test Result(s)

¹TSS, mg/L: 432

²Ammonia-Nitrogen, mg/L: 0.14

³Total metals, mg/L:

Chromium	0.95
Copper	3.32
Lead	0.13
Zinc	1.96

⁴Mercury, mg/L: <0.0002

- 1 Per Standard Methods, Method 2540D.
- 2 Per Standard Methods, Method 4500-NH3D.
- 3 Per Standard Methods, 23rd Edition, Method 3120B, 2011
- 4 Per EPA Method 245.1, Rev. 3, 1994

Unused Sample Returned

X Yes No N/A

KNIGHT.EVA.W
S.1527683471

Digitally signed by
KNIGHT.EVA.W S.1527683471
Date: 2022.03.04 07:49:39 -08'00'

KUSCHE.BRIAN.REY
NOLD.1370216440

Digitally signed by
KUSCHE.BRIAN.REYNOLD.13702
16440
Date: 2022.03.04 07:33:35 -08'00'

Reviewed By
Date:

Analyst
Phone: (360)315-3173

Date

TREATMENT, STORAGE AND DISPOSAL FACILITIES (TSDF)
ENVIRONMENTAL WASTE SAMPLE ANALYSIS REQUEST

Sample Number: 1023-2033-01 1 of 1 Samples Taken

Program: Hazardous Waste Job Order No.: NA WGR#: NA

REQUESTOR

Name: Dale Hunt Code: 1023 Bldg.: 1051 Phone: 396-2320

SAMPLE INFORMATION

Sample Name: BSS WASTE WATER Date Sampled: 2-3-2022

Source Location: BLDG. 1051 WAD Source ID#: _____

Sample Method: ColiWASA

Sample Quantity: 3X 950 / 1X 500 Container Type: glass

Sample Preservation Description: _____

SAMPLED BY

Name: (Print) Dale Hunt Code: 1023 Phone: 5-8460

Name: (Signature) [Signature] Date: 2/2/22 Time: 0900

TRANSPORTED BY

Name: (Print) Dale Hunt Code: 1023 Phone: 5-8460

Name: (Signature) [Signature] Date: 2/2/22 Time: 1002

LABORATORY

Name of Laboratory: Keyport Lab Code: 1023 Phone: 5-3173

Sample Received By: Eia Knight Date: 2/2/22 Time: 1010

Name: (Signature) [Signature] Lab Number: C-77-22

PLEASE RETURN SIGNED ORIGINAL WITH ANALYSIS RESULTS

**TREATMENT, STORAGE AND DISPOSAL FACILITIES (TSDF)
ENVIRONMENTAL WASTE SAMPLE ANALYSIS REQUEST**

ANALYSIS REQUESTED

- | | | | |
|---|---|---|---|
| <input type="checkbox"/> Flash Point | <input type="checkbox"/> Water | <input type="checkbox"/> Total Mercury | <input type="checkbox"/> PCB's |
| <input type="checkbox"/> pH | <input type="checkbox"/> TCLP Metals | <input type="checkbox"/> Otto Fuel | <input type="checkbox"/> Semi-Volatile Organics |
| <input type="checkbox"/> Specific Gravity | <input type="checkbox"/> TCLP Volatile Organics | <input checked="" type="checkbox"/> Oil & Grease \neq | <input type="checkbox"/> BTU |
| <input type="checkbox"/> Physical State | <input type="checkbox"/> TCLP Semi-Volatile Organics | <input type="checkbox"/> VOC Screen | <input type="checkbox"/> Total Sulfur |
| <input type="checkbox"/> Layers | <input type="checkbox"/> TCLP Pesticides | <input type="checkbox"/> HOC Screen | <input type="checkbox"/> Total Cyanides |
| <input type="checkbox"/> Color | <input type="checkbox"/> TCLP Mercury | <input type="checkbox"/> TTO | <input type="checkbox"/> Detergent |
| <input type="checkbox"/> Total Solids | <input type="checkbox"/> Total Permitted Discharge Metals | <input type="checkbox"/> TPH | <input type="checkbox"/> Paint Filter Test |
| <input checked="" type="checkbox"/> TSS | <input type="checkbox"/> Priority Pollutant Metals | <input type="checkbox"/> PAH's | |

COMMENTS:

AMMONIA, METALS,

\neq Sample contains high amount of detergent and cannot be analyzed for HEM by liquid-liquid extraction. ~~HEM~~ 3/2/22

FOR HAZARDOUS WASTE ANALYSIS

ANALYSIS REQUESTED BY:

Name: (Print) Dale Hunt Signature: *Dale Hunt* Date: 2-3-2022

ANALYSIS RECEIVED BY:

Name: (Print) _____ Signature: _____ Date: _____

SAMPLE DISPOSITION:

Name: _____ Date: _____

Disposal Method: _____

Disposal Location: _____

PLEASE RETURN SIGNED ORIGINAL WITH ANALYSIS RESULTS

NAVAL UNDERSEA WARFARE CENTER, DIVISION KEYPORT
 610 Dowell Street, Keyport, WA 98345
 CODE 1023 CHEMISTRY TEST REPORT

Lab Number

C-178-22

Customer's Name Dale Hunt	Code 1023	Phone 6-2320	Date Submitted 7-26-22	Analyst(s) EK/BK/JH
NWA Number 400000018072/0010	Weapon/Program Hazardous Waste		Sampling Method Coliwasa	
Sample Name BSS Waste Water	Date Sampled 7-26-22		Sample ID Number 1023-2207-01	
Location Bldg. 1051	Drum/Tank Number WAD		Lab Notebook Number 17C-87.73	

Background and Description of Service(s) Requested

Total Suspended Solids (TSS) Total Permitted Discharge Metals
 Hexane Extractable Material (HEM)

Test Result(s)

¹TSS, mg/L: 324

²HEM, mg/L: 37

Sample was tested as received. Presence of detergent may bias results.

³Total metals, mg/L:

Chromium	0.47
Copper	3.04
Lead	<0.10
Zinc	0.75

- 1 Per Standard Methods, Method 2540D.
- 2 Per EPA Method 1664, Rev A.
- 3 Per Standard Methods, 23rd Edition, Method 3120B, 2011

Unused Sample Returned

Yes No N/A

KNIGHT.EVA.W
S.1527683471

Digitally signed by
KNIGHT.EVA.W S.1527683471
Date: 2022.08.02 13:49:13 -07'00'

KUSCHE.BRIAN.REY
NOLD.1370216440

Digitally signed by
KUSCHE.BRIAN.REYNOLD.1370216
440
Date: 2022.08.02 07:59:38 -07'00'

Reviewed By
Date:

Analyst
Phone: (360) 315-3123

Date

TREATMENT, STORAGE AND DISPOSAL FACILITIES (TSDF)
ENVIRONMENTAL WASTE SAMPLE ANALYSIS REQUEST

Sample Number: 1023- 2207-01 1 of 1 Samples Taken
Program: Hazardous Waste Job Order No.: NA WGR#: NA

REQUESTOR

Name: Dale Hunt Code: 1023 Bldg.: 1051 Phone: 396-2320

SAMPLE INFORMATION

Sample Name: BSS WASTE WATER Date Sampled: 7-26-2022
Source Location: BLDG. 1051 WAD Source ID#: _____
Sample Method: ColiWASA
Sample Quantity: 3 x 950 / ~~1 x 500~~ Container Type: glass
Sample Preservation Description: _____

SAMPLED BY

Name: (Print) Dale Hunt Code: 1023 Phone: 5-8460
Name: (Signature) [Signature] Date: 7/26/22 Time: 0900

TRANSPORTED BY

Name: (Print) Dale Hunt Code: 1023 Phone: 5-8460
Name: (Signature) [Signature] Date: 7/26/22 Time: 0935

LABORATORY

Name of Laboratory: Keyport NWC Code: 1023 Phone: 5-3173
Sample Received By: Eva Knight Date: 7/26/22 Time: 0936
Name: (Signature) [Signature] Lab Number: C-178-22

PLEASE RETURN SIGNED ORIGINAL WITH ANALYSIS RESULTS

**TREATMENT, STORAGE AND DISPOSAL FACILITIES (TSDF)
ENVIRONMENTAL WASTE SAMPLE ANALYSIS REQUEST**

ANALYSIS REQUESTED

- | | | | |
|---|--|--|---|
| <input type="checkbox"/> Flash Point | <input type="checkbox"/> Water | <input type="checkbox"/> Total Mercury | <input type="checkbox"/> PCB's |
| <input type="checkbox"/> pH | <input type="checkbox"/> TCLP Metals | <input type="checkbox"/> Otto Fuel | <input type="checkbox"/> Semi-Volatile Organics |
| <input type="checkbox"/> Specific Gravity | <input type="checkbox"/> TCLP Volatile Organics | <input checked="" type="checkbox"/> Oil & Grease | <input type="checkbox"/> BTU |
| <input type="checkbox"/> Physical State | <input type="checkbox"/> TCLP Semi-Volatile Organics | <input type="checkbox"/> VOC Screen | <input type="checkbox"/> Total Sulfur |
| <input type="checkbox"/> Layers | <input type="checkbox"/> TCLP Pesticides | <input type="checkbox"/> HOC Screen | <input type="checkbox"/> Total Cyanides |
| <input type="checkbox"/> Color | <input type="checkbox"/> TCLP Mercury | <input type="checkbox"/> TTO | <input type="checkbox"/> Detergent |
| <input type="checkbox"/> Total Solids | <input checked="" type="checkbox"/> Total Permitted Discharge Metals | <input type="checkbox"/> TPH | <input type="checkbox"/> Paint Filter Test |
| <input checked="" type="checkbox"/> TSS | <input type="checkbox"/> Priority Pollutant Metals | <input type="checkbox"/> PAH's | |

COMMENTS:

FOR HAZARDOUS WASTE ANALYSIS

ANALYSIS REQUESTED BY:

Name: (Print) Kenny Elford Signature:  Date: 7/26/2022

ANALYSIS RECEIVED BY:

Name: (Print) _____ Signature: _____ Date: _____

SAMPLE DISPOSITION:

Name: _____ Date: _____

Disposal Method: _____

Disposal Location: _____

PLEASE RETURN SIGNED ORIGINAL WITH ANALYSIS RESULTS

NAVAL UNDERSEA WARFARE CENTER, DIVISION KEYPORT
 610 Dowell Street, Keyport, WA 98345
 CODE 1023 CHEMISTRY TEST REPORT

Lab Number

C-212-22

Customer's Name Dale Hunt	Code 1023	Phone 6-2320	Date Submitted 9-15-22	Analyst(s) EK/BK/JH
NWA Number 400000018072/0010	Weapon/Program Hazardous Waste		Sampling Method Coliwasa	
Sample Name BSS Waste Water	Date Sampled 9-15-22		Sample ID Number 1023-2258-01	
Location Bldg. 1051	Drum/Tank Number WAD		Lab Notebook Number 17C-88.51	
Background and Description of Service(s) Requested Total Suspended Solids (TSS) Total Permitted Discharge Metals Hexane Extractable Material (HEM)				
Test Result(s) ¹ TSS, mg/L: 931 ² HEM, mg/L: 20 Sample was tested as received. Presence of detergent may bias results. ³ Total metals, mg/L: Chromium 0.71 Copper 3.01 Lead <0.10 Zinc 0.64 ⁴ Mercury, mg/L: <0.0002 1 Per Standard Methods, Method 2540D. 2 Per EPA Method 1664, Rev A. 3 Per Standard Methods, 23 rd Edition, Method 3120B, 2011 4 Per EPA Method 245.1, Rev. 3, 1994				
Unused Sample Returned <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A				
KNIGHT.EVA.W S.1527683471 Reviewed By Date:		Digitally signed by KNIGHT.EVA.W S.1527683471 Date: 2022.09.23 12:05:04 -07'00'		
		KUSCHE.BRIAN.REY NOLD.1370216440 Digitally signed by KUSCHE.BRIAN.REYNOLD.137021 6440 Date: 2022.09.23 12:02:47 -07'00'		
		Analyst Phone: (360) 315-3123		
		Date		

TREATMENT, STORAGE AND DISPOSAL FACILITIES (TSDF)
ENVIRONMENTAL WASTE SAMPLE
ANALYSIS REQUEST

SAMPLE NUMBER: 1023-2258-01 SAMPLE NO.: 1 OF 1 SAMPLE(S) TAKEN

Program: Hazardous Waste Job Order No. _____

WGR#: _____

REQUESTOR:

Name: D. Hunt Code: 1023 Bldg. 1051 Phone: 396-2320

SAMPLE INFORMATION:

Sample Name: BSS Water Date Sampled: 9/15/22

Source Location: _____ Source ID#: _____

Sample Method: CO/edasa

Sample Quantity: 500 ml, (2X) 950ml ^{for} 9/15/22 Container Type: glass

Sample Preservation Description: None

SAMPLED BY:

Name: (Print) D. Boyles Code: 1023 Phone: 5-3367

Name: (Signature) D. Boyles Date: 9/15/22 Time: 1015

TRANSPORTED BY:

Name: (Print) D. Boyles Code: 1023 Phone: 5-3367

Name: (Signature) D. Boyles Date: 9/15/22 Time: 1030

LABORATORY:

Name of Laboratory: NUWC Code: 1023 Phone: 6-2500

Sample Received By: Justin Howerd Date: 9/15/22 Time: 10:32

Name: (Signature) Justin Howerd Lab Number: C-212-22

PLEASE RETURN SIGNED ORIGINAL WITH ANALYSIS RESULTS

**TREATMENT, STORAGE AND DISPOSAL FACILITIES (TSDF)
ENVIRONMENTAL WASTE SAMPLE
ANALYSIS REQUEST**

ANALYSIS REQUESTED

- | | | | |
|--|--|---|---|
| <input type="checkbox"/> Flash Point | <input type="checkbox"/> Water | <input type="checkbox"/> Total Mercury | <input type="checkbox"/> PCB's |
| <input type="checkbox"/> pH | <input type="checkbox"/> TCLP Metals | <input type="checkbox"/> Otto Fuel | <input type="checkbox"/> Semi-Volatile Organics |
| <input type="checkbox"/> Specific Gravity | <input type="checkbox"/> TCLP Volatile Organics | <input checked="" type="checkbox"/> Oil & Grease <i>9/19/22</i> | <input type="checkbox"/> BTU |
| <input type="checkbox"/> Physical State | <input type="checkbox"/> TCLP Semi-Volatile Organics | <input type="checkbox"/> VOC Screen | <input type="checkbox"/> Total Sulfur |
| <input type="checkbox"/> Layers | <input type="checkbox"/> TCLP Pesticides | <input type="checkbox"/> HOC Screen | <input type="checkbox"/> Total Cyanides |
| <input type="checkbox"/> Color | <input type="checkbox"/> TCLP Mercury | <input type="checkbox"/> TTO | <input type="checkbox"/> Detergent |
| <input type="checkbox"/> Total Solids | <input checked="" type="checkbox"/> Total Permitted Discharge Metals | <input type="checkbox"/> TPH | <input type="checkbox"/> Paint Filter Test |
| <input checked="" type="checkbox"/> TSS <i>9/19/22</i> | <input type="checkbox"/> Priority Pollutant Metals | <input type="checkbox"/> PAH's | |

COMMENTS:

spool site

Preserved to pH < 2 w/ conc HNO₃ 9/19/22

Oil & Grease ^{sample} preserved to pH < 2 w/ HCl 9/19/22

FOR HAZARDOUS WASTE ANALYSIS

ANALYSIS REQUESTED BY:

Name: (Print) _____ (Signature) _____ Date: _____

ANALYSIS RECEIVED BY:

Name: (Print) _____ (Signature) _____ Date: _____

SAMPLE DISPOSITION:

Name: _____ Date: _____

Disposal Method: _____

Disposal Location: _____

PLEASE RETURN SIGNED ORIGINAL WITH ANALYSIS RESULTS

ATTACHMENT E.6

APPLICATION TO RENEW NUWCDIVKPT PERMIT # 7353 TO DISCHARGE INDUSTRIAL WASTEWATER TO A POTW

Does the facility use any of the chemicals specified as raw materials or produce them as part of the manufacturing process, or are they present in the wastewater.

Ethyl benzene (CAS #100-41-4) occurs in lacquer thinner used in various paint processes in small quantities. Large quantities are stored in B. 1006, the hazardous material storage building. Building 1006 does not have any sewer service.

Toluene (CAS #108-88-3) occurs in aromatic naphtha which is used for circuit board cleaning in buildings 98, 489 and 514, and in lacquer thinner used in paint processes in various buildings. Large quantities are stored in B. 1006, the hazardous material storage building. B. 1006 does not have any sewer service.

1,2-Trans-Dichloroethylene (CAS #156-60-5) occurs in engineered fluid stored in 55-gallon drums in B. 82 and used in the Target refurbishment process.

Antimony (CAS #7440-36-0) occurs in lead acid batteries used in various processes and motor vehicles.

Arsenic (CAS #7440-38-2) occurs in trace quantities in IWTP wastewater.

Cadmium (CAS #7440-43-9) occurs in trace quantities in IWTP wastewater.

Chromium (CAS #7440-47-3) occurs in trace quantities in IWTP wastewater.

Copper (CAS #7440-50-8) occurs in trace quantities in IWTP wastewater.

Lead (CAS #7439-92-1) occurs in trace quantities in IWTP wastewater.

Nickel (CAS #7440-02-0) occurs in trace quantities in IWTP wastewater.

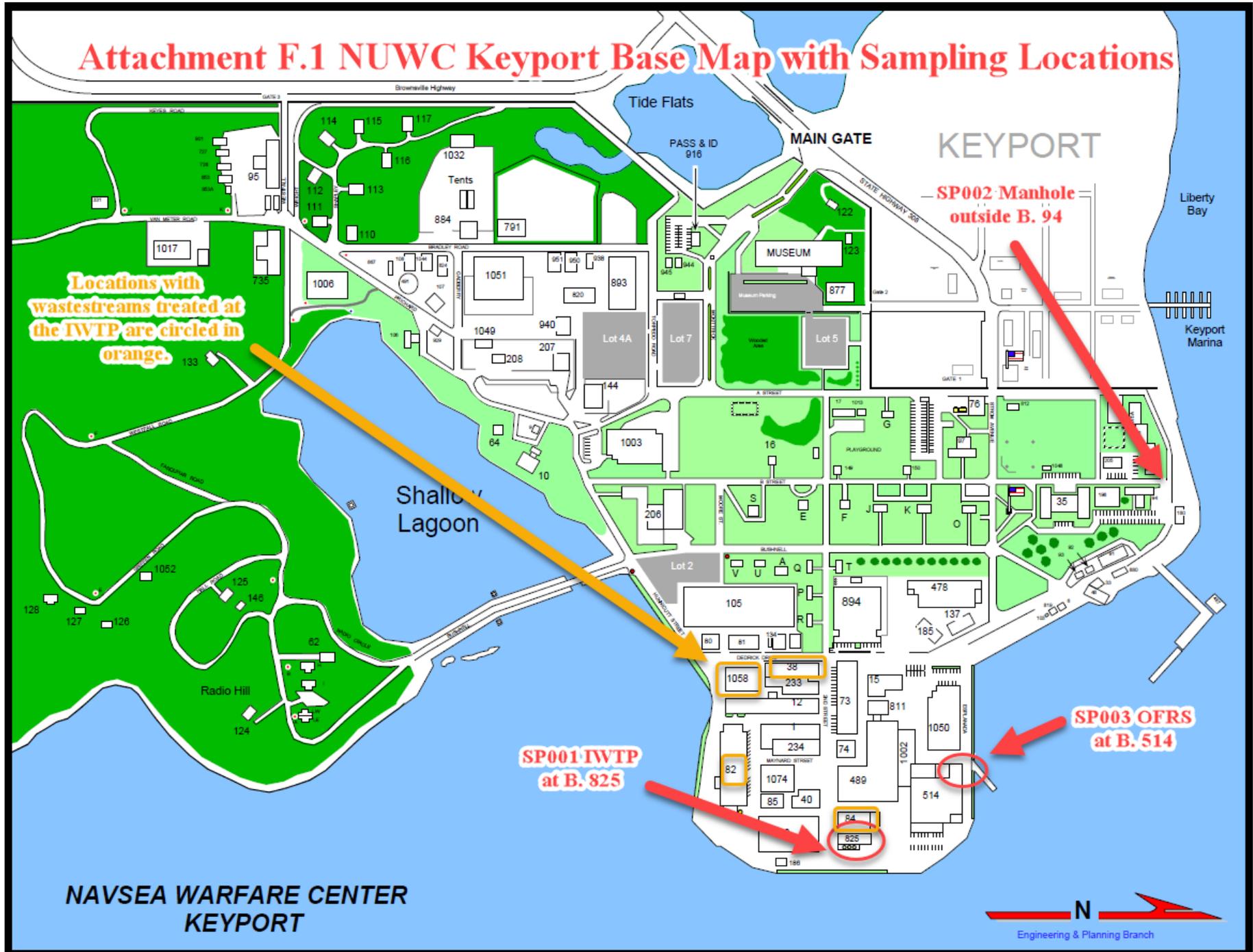
Silver (CAS #7440-22-4) occurs in trace quantities in IWTP wastewater.

Zinc (CAS #7440-66-6) occurs in hydraulic oil stored in 55-gallon drums and in trace quantities in IWTP wastewater.

Cyanide (CAS #57-12-5) occurs in trace quantities in IWTP wastewater.

The facility also tests each batch of treated industrial wastewater for propylene glycol dinitrate (Otto Fuel II) levels must be below the permit limit of 0.2 mg/L.

Attachment F.1 NUWC Keyport Base Map with Sampling Locations



ATTACHMENT I.1

APPLICATION TO RENEW NUWCDIVKPT PERMIT NO. ST0007353
TO DISCHARGE INDUSTRIAL WASTEWATER TO A POTW

Describe liquid wastes or sludges being generated by your facility that are not disposed of in the waste stream.

All liquid and sludge wastes generated by the facility that are not permitted for disposal via State Waste Discharge Permit ST0007353 are stored and disposed of in accordance with NUWCDIVKPTINST 5090.11 Hazardous Waste Management Plan and the NUWC Keyport Permit For The Storage And Treatment Of Dangerous Waste. The waste is sampled, designated, and disposed of in accordance with all federal and state regulations, and Navy policies.

Table I.1 – Industrial Wastewater Treatment Process Wastes

Waste	Type of Waste	Hauler	Hauler EPA ID	Hauler Address/Phone
Sludge from B. 825 Industrial Wastewater Treatment	Low Sulfide State Regulated Toxic	Black Gold Industries	CAD983609678	527 N. RICE AVENUE OXNARD, CA 93030 (805) 981-4616
Wash water and Sludge from B. 825 tank cleaning	Non-Regulated Liquid/Solid	Black Gold Industries	CAD983609678	527 N. RICE AVENUE OXNARD, CA 93030 (805) 981-4616
Spent 8x30 Mesh Granular Activated Carbon from B. 514 OFRS	Non-regulated Solid	Clean Harbors Environmental SVS. - Quincy	MAD039322250	1200 CROWN COLONY DR QUINCY, MA 02164 (800) 444-4244
Spent Garnet Excel Cut 80 Water Jet Cutter Media	Non-regulated Solid	Naval Base Kitsap Integrated Solid Waste Management Program	Not Required	1459 SILVERSIDES RD SILVERDALE, WA 98315 (360) 396-7005