

PERMIT TO INSTALL APPLICATION

Aevitas Specialty Services Corp (SRN: N7359) **Rebuilt Oil Recycling Facility**

663 Lycaste St.
Wayne County
Detroit, MI, 48214

April 1, 2026
NTH Project No. 25003089



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1.0 INTRODUCTION

Aevitas Specialty Services Corp (Aevitas) is seeking an air use permit to install (PTI) to rebuild and operate process equipment to treat and recycle used hydraulic oils. Aevitas receives non-hazardous oily waste typically high in water content, that is processed at their facility for treatment and recycling. The water separated from the waste material is routed through an onsite wastewater treatment plant.

Aevitas previously operated pursuant to the terms and conditions of PTI No. 10-12; however, a large destructive fire occurred at the Detroit-based oil recycling facility on June 30, 2025, and Aevitas is seeking to rebuild the plant in an expedited manner. According to Michigan Department of Environment, Great Lakes, and Energy (EGLE), PTI No. 10-12 is considered obsolete for the oil processing equipment due to extensive damage to the facility, as noted during an EGLE inspection that occurred on August 8, 2025.

Operations at Aevitas originally included waste treatment of non-hazardous oily wastes and wastewaters, product blending, and transportation. The facility consisted of the following process equipment:

- Heated storage tanks for incoming oily liquid industrial waste
- Processing tanks for treating oily waste, exhausted to a scrubber for odor control
- Processing tanks used to dry wet oil product and sludge, exhausted to a scrubber
- Various storage tanks for petroleum products, wastewater, and treatment chemicals
- One (1) natural gas-fired boiler rated at 6.3 million British thermal units per hour (MMBtu/hr) that is exempt from permitting per Michigan Air Pollution Control Rule 282(2)(b)(i) used to supply steam to the heating coils of heated tanks. The existing boiler was not damaged and will remain onsite.

Aevitas is located in Wayne County, which is currently designated by the U.S. Environmental Protection Agency (EPA) as attaining the National Ambient Air Quality Standard (NAAQS) for each regulated criteria pollutant, except for ozone and a portion of the county that is designated nonattainment for sulfur dioxide (SO₂) (Aevitas is located northeast and outside of the SO₂ nonattainment area). The rebuilt oil treating and recycling plant will emit minor amounts of air contaminants and is therefore not subject to Title V, Prevention of Significant Deterioration (PSD), or Nonattainment New Source Review (NANSR).

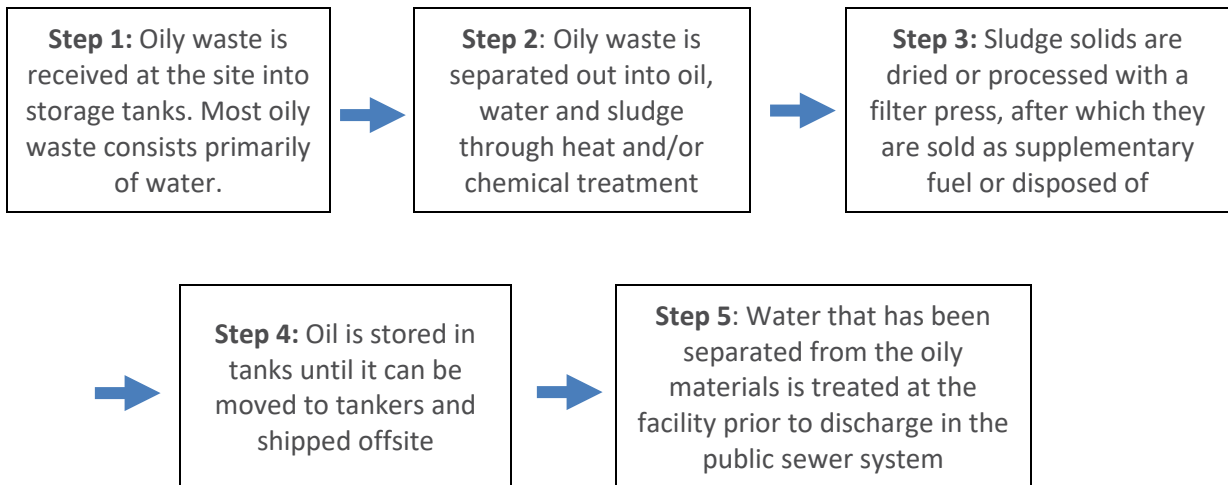
A facility layout of the proposed rebuilt facility is contained in Appendix A.

This application presents a description of the proposed rebuilt facility, along with associated air emission estimates, a regulatory review, and an analysis for toxic air contaminants (TACs).

2.0 PROJECT DESCRIPTION

Aevitas is proposing to construct similar equipment for the proposed rebuilt facility as was permitted under PTI No. 10-12 for storage and processing of hydraulic oils. The project will consist of various tanks of different capacities and process conditions. Refer to Appendix B for detailed information on the oil tanks to be installed at the rebuilt facility.

The oil recycling process is conducted as follows:



The rebuilt facility will maintain similar operations as evaluated in PTI Application 10-12. Aevitas receives waste oils, used oily materials, and oily wastewater that is delivered in tankers, drums and totes. The materials mainly consist of water and oil, including some components that are similar to sludge; the oily materials have been previously determined to be non-hazardous waste. There are three (3) main categories for these types of materials: 1) straight oil, 2) oily waste, and 3) oily water.

Aevitas processes these materials by separating the water and oils into high- and low-quality oils through chemical treatment (i.e., addition of sulfuric acid, potassium hydroxide, and/or polymers¹) and/or heat, where the higher-quality oil can be used to produce lubricants, and the lower-quality oils are sold or transferred offsite for energy recovery. The tanks are heated using the existing natural gas-fired boiler, which supplies steam to the heating coils of the tanks.

Straight oil is dried in tanks for separating out the water and oil, and the oil is then filtered and stored in tanks until it can be moved to tankers and shipped offsite. Oily waste and oily water are sent to storage tanks that are heated and product is held for further processing. Oily waste and oily water are then processed via heat and chemical treatment for separating out the oil, water and sludge. Sludge solids are managed by either sending them to a tank to be dried (using heat and air flowing over the materials) or processing them with a filter press, after which they are sold as supplementary fuel or disposed of at a solid waste facility. The separated oil is similar to straight oil and is processed the same way as straight oil.

Odorous compounds and fumes of hydrogen sulfide (H₂S) from exhaust produced in certain oil processing and drying tanks will be routed to a one-stage packed tower scrubber that will be designed to reduce odors and fumes of H₂S. Refer to Appendix B identifying oil tanks that will be controlled by the scrubber.

Water that has been separated from the oily materials is treated at the facility prior to discharge in the public sewer system. A two-stage packed bed scrubber will be used to control odors from the wastewater treatment process and associated wastewater tanks.

¹ Polymers are typically considered solids and thus non-emissive.



A process flow diagram of facility operations is included in Appendix A and as an attachment in the Air Permit to Install – New Form in MiEnviro Portal (note that the “dryers” in the process flow diagram are not actual dryers but refer to the drying processes taking place in the tanks as described above).

2.1 PROPOSED TANKS

Refer to Appendix B and the application forms in MiEnviro Portal for detailed information on each of the oil tanks to be installed. Table 2-1 provides a summary.

Table 2-1: Summary of Proposed Oil Tanks

Tank IDs	Capacity (each) (gallons)	Tank Contents (each)
11, 12, 13, 14, 15, 16	19,500	Oily Liquid Industrial Waste (Hydraulic Oil)
21, 22, 23, 24	16,000	Oily Liquid Industrial Waste (Hydraulic Oil)
43, 44, 45, 46	19,500	Petroleum Product (Hydraulic Oil)
B1, B2, B3, B4, B5	6,000 - 10,000	Petroleum Product (Hydraulic Oil)
OD-1, OD-2, OD-3, OD-4, OD-5, OD-6	19,500	Waste Oil (Hydraulic Oil)

2.2 PROPOSED OIL PROCESSING SCRUBBER

A packed tower scrubber will be utilized to control odors and fumes of H₂S from exhaust produced in certain processing and drying oil tanks. Table 2-2 provides key specifications on the proposed scrubber to be installed.

Table 2-2: Proposed Packed Tower Scrubber Key Specifications

Parameter	Value
Recirculation Pump	Minimum flow requirement: 40 gpm
Instrumentation	- (1) Flow sensor in scrubber recycle pipe (Minimum flow setpoint: 40 gpm) - (1) pH sensor in scrubber sump (Minimum pH setpoint: 9) - (1) Oxidation-reduction potential (ORP) sensor in scrubber sump (Minimum ORP setpoint: 600 mV)

Refer to the application forms in MiEnviro Portal for more information regarding the proposed scrubber.



2.3 NATURAL GAS-FIRED BOILER (EXEMPT)

The natural gas-fired boiler is an existing unit. It was determined exempt from permitting requirements per Michigan Air Pollution Control Rule 282(2)(b)(i) as noted in an EGLE inspection that occurred on August 17, 2022. It was not damaged in the fire and will remain onsite. It is rated at 6.3 MMBtu/hr and will be used to supply steam to the heating coils of heated tanks.

2.4 PROPOSED DIESEL-FIRED EMERGENCY ENGINE (EXEMPT)

Aevatis is proposing to install one (1) diesel-fired emergency generator used to provide backup power to the facility during power outages. The emergency generator will be rated at 355 horsepower (hp) (approximately 3 MMBtu/hr). The emergency generator is exempt from permitting per Michigan Air Pollution Control Rule 285(2)(g).

2.5 WASTEWATER, POTASSIUM HYDROXIDE, AND SULFURIC ACID TANKS (EXEMPT)

Aevitas is proposing to install various exempt tanks containing wastewater, one (1) tank containing potassium hydroxide and one (1) tank containing sulfuric acid. Emissions generated, if any, from the tanks containing wastewater are anticipated to be negligible due to the aqueous nature of the material. Michigan Air Pollution Control Rule 284(2)(h) exempts storage containers of bases and sulfuric acid that is not more than 99% by weight. Potassium hydroxide is a strong base and the sulfuric acid that will be stored is 93% by weight. SDSs for potassium hydroxide and sulfuric acid to be stored in the tanks are provided in Appendix C.

3.0 EMISSION ESTIMATES

The following sections summarize emissions from the various equipment to be installed at the rebuilt facility.

3.1 TANKS

The hydraulic waste oils and oily materials that Aevitas receives generally have low volatility because they have usually been exposed to the air before arriving at the facility, thus reducing volatile components. Additionally, a large portion of total wastes that Aevitas receives is water (estimated >90%), with smaller amounts of oil requiring proper management of the material.

Volatile organic compound (VOC), hazardous air pollutant (HAP) and toxic air contaminant (TAC) emissions from tanks containing waste oils and oily materials (i.e., Tanks 11 – 16, 21 – 24, 43 – 46, B1 – B5, and OD-1 – OD-6) have been estimated utilizing U.S. Environmental Protection Agency's (EPA) TANKS 5.1 web application program. As the type of waste varies, the material is based on conservatively assuming a worst-case hydraulic oil. In reality, potential emissions from the processing tanks will be much lower.

Refer to Appendix B detailing tank information and estimated emissions based on inputs and outputs from U.S. EPA's latest version of TANKS 5.1. Note the following options selected to run the EPA TANKS 5.1 program and calculate TACs and other contaminants from the tanks:

- For tank contents, because EPA TANKS 5.1 has limited options to select from for specifying which petroleum liquids are stored in tanks, No. 6 fuel oil was chosen as the most representative material for estimating VOC emissions (it is anticipated emissions, if any, will be minimal).



- For tanks that exhaust to the scrubber, a conservative control efficiency of 70% was applied to the calculations based on U.S. EPA's Air Pollution Control Technology Fact Sheet for a Packed-Bed/Packed-Tower Wet Scrubber (document No. EPA-452/F-03-015).
- For emissions of TACs and other contaminants, Safety Data Sheets (SDSs) of various hydraulic oils provided by Aevitas were reviewed and compounds noted on the SDSs were evaluated. SDSs are contained in Appendix C.

Regarding anticipated odors and fumes of H₂S from the hydraulic oil tanks, emissions will be routed through a one-stage packed tower scrubber. The process will be maintained consistently with that of the previous PTI. Emissions of H₂S from the scrubber are based on the maximum H₂S pollutant loading of 50 ppmv in the proposed scrubber to be installed. Refer to Appendix B for estimated emissions of H₂S.

3.2 BOILER AND EMERGENCY ENGINE (EXEMPT)

Regulated pollutants emitted from the existing boiler and proposed emergency engine will consist primarily of nitrogen oxides (NO_x) and carbon monoxide (CO), with lesser amounts of SO₂, particulate matter (PM), particulate matter less than or equal to 10 microns in diameter (PM₁₀), particulate matter less than or equal to 2.5 microns in diameter (PM_{2.5}), and VOCs. Additionally, various hazardous air pollutants (HAPs) and TACs will be emitted. Refer to Appendix B, Tables B-2 and B-3 for detailed emission calculations, including maximum capacities, emission factors and maximum annual hours of operation for the existing boiler and emergency engine used to estimate emissions. Although the existing boiler and emergency engine are exempt from permitting requirements, they are being included in the potential emission calculations to show that facility potential to emit (PTE) is minimal and below major source levels.

3.3 PROJECT POTENTIAL TO EMIT SUMMARY

Table 3-1 summarizes the proposed project emissions, which conservatively includes exempt equipment. As shown, project emissions will be minimal.

Table 3-1: Proposed Project Potential Emissions

Pollutant	Oil Tanks (tpy)	Exempt Boiler (tpy)	Exempt Emergency Engine (tpy)	Total PTE (tpy)
NO _x		2.7	2.8	5.6
CO		2.3	0.61	2.9
PM (filterable)		5.1E-02	0.2	0.25
PM ₁₀ (filterable & condensable)		0.21	0.2	0.41
PM _{2.5} (filterable & condensable)		0.21	0.2	0.41
SO ₂		1.6E-02	0.19	0.20
VOC	0.74	0.15	0.23	1.1
Lead		1.4E-05		1.4E-05
H ₂ S	1.4			1.4
Max Single HAP (Hexane)		4.9E-02	NA ¹	4.9E-02



Pollutant	Oil Tanks (tpy)	Exempt Boiler (tpy)	Exempt Emergency Engine (tpy)	Total PTE (tpy)
Aggregate HAPs		5.1E-02	2.5E-03	5.4E-02

¹ There is not a hexane emission factor for diesel-fired emergency engine in AP-42 Chapter 3.3; therefore, hexane emissions are not estimated for the emergency engine.

4.0 SUMMARY OF REGULATORY REQUIREMENTS

This section contains an overview of federal and state air quality requirements for the proposed project.

4.1 FEDERAL AIR QUALITY REQUIREMENTS

U.S. EPA has developed rules and regulations affecting new sources of criteria pollutants and HAPs. These are known as federal New Source Performance Standards (NSPS) and National Emissions Standards for Hazardous Air Pollutants (NESHAP). Although the existing boiler and emergency engine are exempt and not required to be included in this analysis, we have included these units in the regulatory review below to expedite EGLE review.

New Source Performance Standards (NSPS)

Small Industrial-Commercial-Institutional Steam Generating Units – 40 CFR Part 60 Subpart Dc (***Not applicable***)

40 CFR Part 60 Subpart Dc (“NSPS Subpart Dc”) applies to each steam generating unit that commences construction, modification, or reconstruction after June 9, 1989 and that has a heat input capacity greater than or equal to 10 MMBtu/hr and less than or equal to 100 MMBtu/hr. The natural gas-fired boiler is rated at 6.3 MMBtu/hr (i.e., less than 10 MMBtu/hr); therefore, NSPS Subpart Dc does not apply to the boiler.

Stationary Compression Ignition Internal Combustion Engines – 40 CFR Part 60 Subpart IIII (***Not applicable***)

40 CFR Part 60 Subpart IIII (“NSPS Subpart IIII”) applies to compression ignition RICE that commence construction after July 11, 2005 and are manufactured after April 1, 2006. The proposed emergency engine that Aevitas is installing was manufactured in January 1987 (before the applicability date of NSPS Subpart IIII). Therefore, NSPS Subpart IIII does not apply to the proposed emergency engine.

Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After October 4, 2023– 40 CFR Part 60 Subpart Kc (***Not applicable***)

40 CFR Part 60 Subpart Kc (“NSPS Subpart Kc”) applies to each storage vessel with a capacity greater than or equal to 20,000 gallons that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after October 4, 2023. Tanks 11 – 16, 21 – 24, 43 – 46, B1 – B5, OD-1 – OD-6, C-1 and A-1 are each less than 20,000 gallons. Therefore, NSPS Subpart Kc does not apply to the proposed tanks.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

Stationary Reciprocating Internal Combustion Engines – 40 CFR Part 63 Subpart ZZZZ (***Not applicable***)

40 CFR Part 63 Subpart ZZZZ (“RICE MACT”) implements Section 112(d) of the Clean Air Act to establish emission and operating limitations, and monitoring, recordkeeping, and reporting requirements for HAP



emissions from stationary RICE located at major and area sources of HAPs. The RICE MACT applies to new stationary RICE located at an area source of HAPs where construction commenced on or after June 12, 2006. The proposed rebuilt plant will be considered an area source of HAPs as shown in Table 3-1. And, pursuant to 40 CFR §63.6590(a)(2)(iii), the proposed RICE will be considered “new” because construction of the RICE will commence after the applicable date of June 12, 2006 and be located at an area source of HAP emissions.

Pursuant to 40 CFR §63.6590(c)(1), new stationary RICE located at an area source of HAPs are considered to meet the requirements of the RICE MACT by meeting the requirements of 40 CFR Part 60 Subpart IIII; no further requirements apply to RICE under the RICE MACT. However, as noted above, based on the manufacture date of the proposed emergency engine, NSPS Subpart IIII does not apply.

Industrial-Commercial-Institutional Boilers – 40 CFR Part 63 Subpart JJJJJ (**Not applicable**)

U.S. EPA promulgated the NESHAP for Industrial, Commercial, and Institutional Boilers for Area Sources at 40 CFR Part 63 Subpart JJJJJ. The proposed rebuilt facility will be considered an area source of HAPs. As stated in 40 CFR §63.11195(e), gas-fired boilers are not subject to 40 CFR Part 63 Subpart JJJJJ; therefore, 40 CFR Part 63 Subpart JJJJJ does not apply to the boiler.

4.2 MICHIGAN AIR QUALITY REQUIREMENTS

The State of Michigan has developed regulations to both implement and supplement the federal requirements. Specifically, EGLE has promulgated rules and regulations under the Natural Resources and Environmental Protection Act (Act 451 of 1994, As Amended) and Section 336 of the Michigan Compiled Law (MCL) for the control of air pollution. This section summarizes the state air quality regulations that are applicable to the proposed project.

R 336.1201 Requirements

R 336.1201 (Rule 201) of the Michigan Air Pollution Control Rules states that a person who plans to install, construct, reconstruct, relocate, or modify process or process equipment shall apply to the department for a PTI. Aevitas is submitting this application for the proposed rebuilt facility.

R 336.1224 Requirements

R 336.1224 (Rule 224) specifies that new or modified emission units cannot emit TACs in excess of the maximum allowable emission rate based upon the application of best available control technology for toxics (T-BACT), except as provided in R 336.1224(2). R 336.1224(2)(a) and (c) state:

- (2) *The requirement for T-BACT in subrule (1) of this rule does not apply to any of the following:*
 - (a) *An emission unit or units for which standards have been promulgated under section 112(d) of the clean air act or for which a control technology determination has been made under section 112(g) or 112(j) for any of the following:*
 - (i) *The hazardous pollutants listed in section 112(b) of the clean air act.*
 - (c) *An emission unit or units which only emits toxic air contaminants that are particulates or volatile organic compounds and which is in compliance with best available control technology requirements, including R 336.1702, or lowest achievable emission rate requirements for particulates and volatile organic compounds.*

The proposed oil tanks will emit, if any, very small amounts of TACs that are particulates or VOCs. Several tanks will have odors and fumes of H₂S controlled by a one-stage packed tower scrubber (at least 70% control), which is also anticipated to control other TAC emissions generated. The scrubber satisfies T-BACT



for the tanks. There are not other cost-effective measures as the potential emissions are very low at less than 1 tpy VOCs.

Estimated TACs emitted from the tanks will meet R 336.1225 standards for air toxics; additional reduction would not be feasible.

R 336.1225 – 336.1232 Air Toxics Requirements

R 336.1225 (Rule 225) requires that the ambient concentrations ($\mu\text{g}/\text{m}^3$) produced by the emissions of TACs be less than health-based screening levels established by EGLE. Screening levels for non-carcinogenic compounds are referred to as Initial Threshold Screening Levels (ITSLs), while screening levels for carcinogenic compounds are referred to as Initial Risk Screening Levels (IRSLs). Rules 226 through 232 contain exemptions from the R 336.1225 requirements, methods of demonstrating compliance, methodologies for establishing screening levels, and other requirements.

R 336.1227

R 336.1227 contains three (3) methods for demonstrating compliance with health-based screening levels; any or all methods may be used for TACs within the proposed project.

- R 336.1227(1)(a) Allowable Emission Rate (AER) Methodology
- R 336.1227(1)(b) Ambient Impact Ratio (AIR) Matrix Methodology
- R336.1227(1)(c) Dispersion Modeling Methodology

Algorithms from Table 21 of Rule 227(1)(a) were utilized to calculate the allowable emission rate (AER) for each TAC from the proposed oil tanks. As shown in Appendix D, the AER for each TAC will be in compliance with the respective health-based screening levels.

R 336.1702 Requirements

R 336.1702 (Rule 702) requires that a new source of VOCs comply with the lowest maximum allowable emission rate as defined in R 336.1702(a) through (d):

- (a) The maximum allowable emission rate listed by the department on its own initiative or based upon the application of the best available control technology.*
- (b) The maximum allowable emission rate specified by a new source performance standard promulgated by the United States Environmental Protection Agency under authority enacted by Title I, Part A, Section 111 of the Clean Air Act, as amended, 42 U.S.C. §7413.*
- (c) The maximum allowable emission rate specified as a condition of a permit to install or a permit to operate.*
- (d) The maximum allowable emission rate specified in part 6 of these rules which would otherwise be applicable to the new source except for the date that the process or process equipment was placed into operation or for which an application for a permit to install, under the provisions of part 2 of these rules, was made to the department. If the part 6 allowable emission rate provides for a future compliance date, then the future compliance date shall also be applicable to a new source pursuant to this subdivision.*

The proposed rebuilt facility will be considered a new source of VOC. R 336.1640 (Rule 640) of the Michigan Air Pollution Control Rules regulates emission of VOCs from existing storage vessels in the oil and natural gas industry located in the 2015 ozone nonattainment areas. Rule 601(a) specifies the “2015 ozone nonattainment area” includes Wayne County.



EGLE issued a Variance for the *Suspension of Enforcement of Part 6 Reasonably Available Control Technology Rules For the Southeast Michigan 2015 Ozone Maintenance Area* dated May 19, 2023, and continued on May 19, 2025 for a period of one (1) year. Therefore, the Part 6 rules do not apply at this time.

Nonetheless, Rule 640(3)(a) excludes storage vessels with a potential to emit for VOC of less than 6 tons per year (tpy). Aevitas' tank potential emissions are much less than 6 tpy; the proposed tank total potential to emit for VOC emissions is minimal, estimated less than 1 tpy. Therefore, additional add-on controls for VOC emissions would not be economically feasible. The proposed project equipment will be in compliance with the lowest maximum allowable emission rate pursuant to R 336.1702.

In addition, NSPS 40 CFR Part 60 Subpart Kc has been promulgated by the U.S. EPA under Section 111 of the CAA; however, as discussed in Section 4.1, the proposed tanks are not subject to this subpart. Therefore, R 336.1702(b) does not apply to these units. And, there are not VOC limits in an existing PTI for the proposed equipment; therefore, R 336.1702(c) does not apply. As discussed in the paragraph above, the rebuilt facility is excluded based on the Variance and Rule 640(3)(a) requirements, therefore R 336.1702(d) does not apply.

R 336.2802 Requirements

The State of Michigan has been approved by U.S. EPA to implement and administer the PSD permitting program in Michigan. Michigan's PSD requirements are outlined in Part 18 of the State of Michigan Air Pollution Control Rules.

The attainment status of each pollutant, according to the NAAQS, determines whether the pollutant would be subject to PSD review or nonattainment new source review (NANSR). PSD is applicable for those pollutants for which the area is designated as attainment or unclassified; whereas NANSR is applicable for those pollutants in areas designated as nonattainment (i.e., failing to meet the NAAQS). The rebuilt facility will be located in Wayne County, which U.S. EPA has designated as attainment (or unclassified) for each NAAQS, except for ozone and a portion of the county that is designated nonattainment for SO₂ (Aevitas is located northeast and outside of the SO₂ nonattainment area).

The rebuilt facility is not a listed source category pursuant to R 336.1801(cc)(i); therefore, for purposes of PSD, the major stationary source threshold for the facility is 250 tpy for each PSD pollutant and 100 tpy for each NANSR pollutant (including precursors). Precursor pollutants to ozone include NO_x and VOCs.

As summarized in Table 4-2, potential emissions from the rebuilt facility will be less than major source Title V thresholds and less than the PSD and NANSR major stationary source thresholds of 250 tpy and 100 tpy, respectively); therefore, the project is not subject to major source permitting. Exempt equipment (i.e., the boiler and emergency engine) is included in the facility PTE calculations to demonstrate that the facility is not a major source.

Facility PTE is below the major source thresholds defined in R 336.1211(1)(a), less than significant emission rates listed in R 336.1119(e); and will be an area (i.e., minor) source of HAPs and will not trigger Title V (Renewable Operating Permit) permitting program requirements.



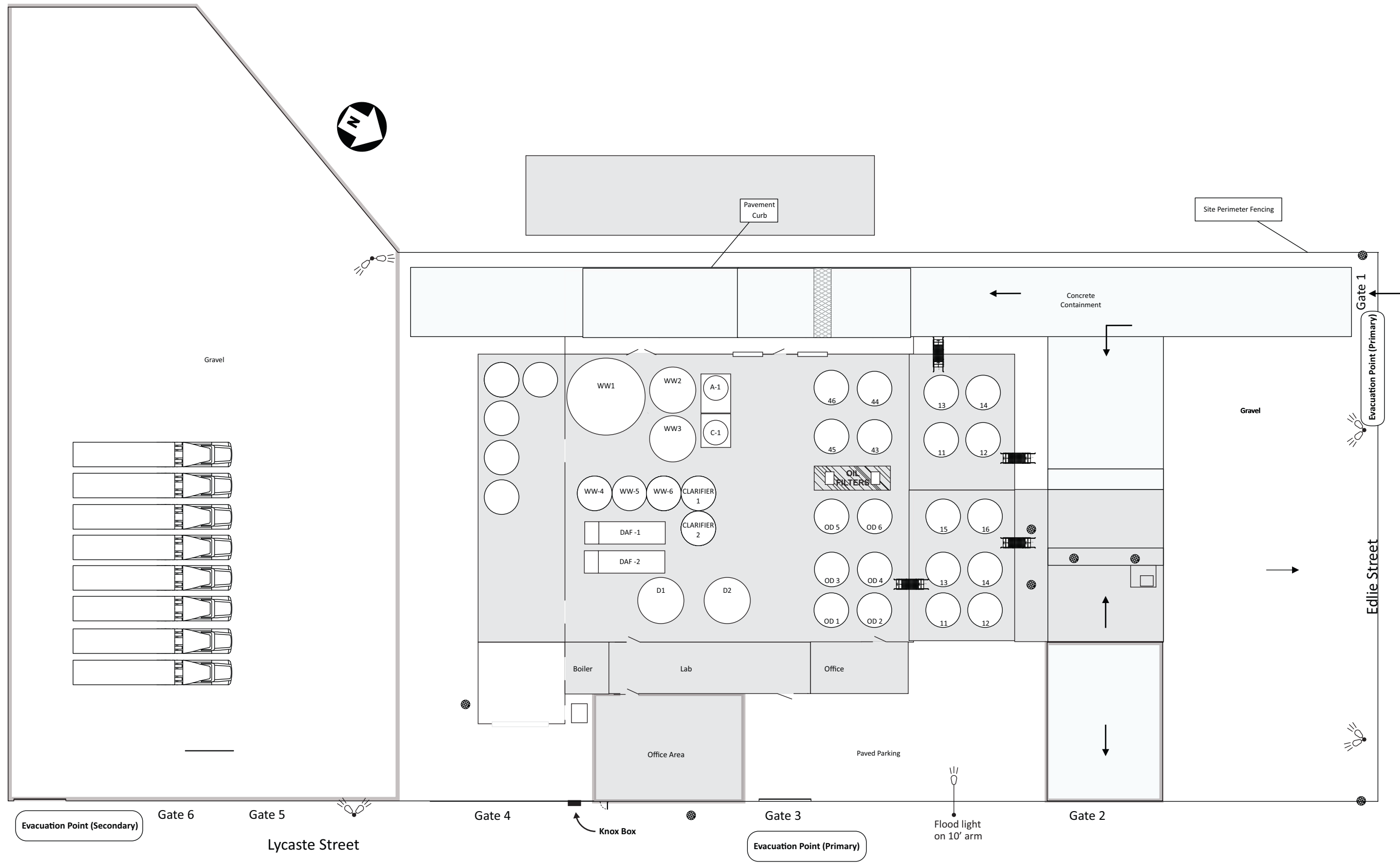
Table 4-2: Facility PTE and Major Source Thresholds

Pollutant	Rebuilt Facility PTE (tpy)	ROP Major Source Threshold (tpy)	PSD/NANSR Major Source Threshold (tpy)
NO _x	5.6	100	250/100
CO	2.9	100	250/N/A
PM (filterable)	0.25	N/A	250/N/A
PM ₁₀ (filterable & condensable)	0.41	100	250/N/A
PM _{2.5} (filterable & condensable)	0.41	100	250/N/A
SO ₂	0.20	100	250/N/A
VOC	1.1	100	250/100
Lead	1.4E-05	100	250/N/A
H ₂ S	1.4	N/A	250/N/A
Max Single HAP (Hexane)	4.9E-02	10	N/A
Aggregate HAPs	5.4E-02	25	N/A

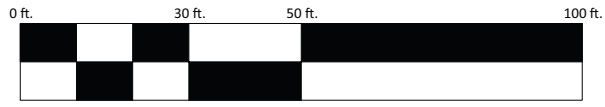


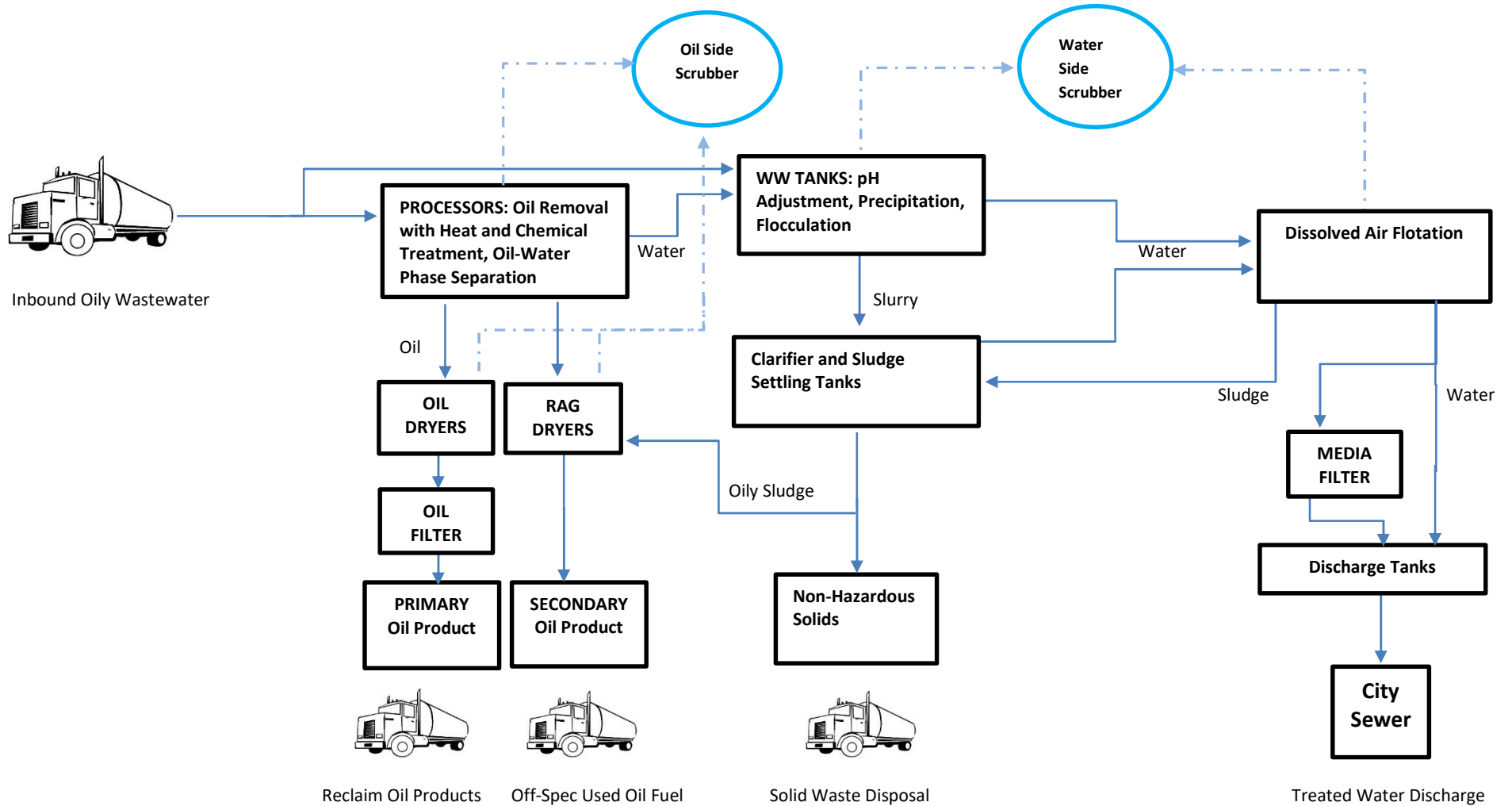
APPENDIX A

- FACILITY LAYOUT



	<h2 style="margin: 0;">Aevitas Specialty Services</h2> <h3 style="margin: 0;">EQUIPMENT LAYOUT</h3> <p style="margin: 0;">663 Lycaste Street, Detroit, MI 48214</p>	<p>LEGEND</p> <ul style="list-style-type: none"> → Estimated Surface → Flow Direction ⊙ Storm Water Drain ⊙ Sanitary Water Drain 🧯 Spill Kit 🔥 Fire Extinguisher 👁️ Eye Wash Station 💡 Flood Light 🔱 Compressed gas cylinders 🩹 First Aid Kit 🗑️ Pit Grate
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APPENDIX B

- EMISSION ESTIMATES



Table B-1: Tank Parameters and VOC Potential Emissions

Task Group	Location	Emulsion Tank Number Entered in MEXxvso	Tank ID Number	Tank Shape	Shell Height (ft)	Shell Diameter (ft)	Max Liquid Height from Bottom of Tank (ft)	Average Liquid Height from Bottom of Tank (Assume Average Liquid Height = Maximum Liquid Height) (ft)	Total Tank Capacity/ Working Volume (Gal)	Vertical or Horizontal Tank?	Shell Color/ Shade Gray - Specify if Light or Medium	Roof Color/ Shade Gray - Specify if Light or Medium	Shell Condition: Good, Average, Age/ Poor	Roof Condition: Good, Average, Age/ Poor	Roof (Flat or Floating)	Roof (Cone, Dome or Flat)	For Cone-Shaped Bottom Tanks: Cone-Shaped Bottom Shape Assume AP-42 Default of 0.0625: 0.01. However, if the bottom is cone-up, enter the slope as a negative number. (ft/ft)	Vapor Pressure at Normal Operating Conditions (psig)	Tank Heated (Yes/No)	Tank Insulated (Y/N) *If Yes, Specify if Partially or Fully Insulated	If Tank Fully Insulated and Heated: Typical Maximum Liquid Bulk Temperature in Heating Cycle (degrees R)	If Tank Fully Insulated and Heated: Typical Average Liquid Bulk Temperature in Heating Cycle (degrees R)	If Tank Fully Insulated and Heated: Typical Minimum Liquid Bulk Temperature in Heating Cycle (degrees R)	If Tank Fully Insulated and Heated: Number of Heating Cycles per Year	If Tank is Partially Insulated or Fully Insulated and Not Heated: Liquid Bulk Temperature (degrees R)	If Tank is Not Insulated: Liquid Bulk Temperature Calculation Method (Use AP-42 Calculation)	Breather Vent Settings Vacuum Setting (psig) AP-42 Default: -0.03 psig	Breather Vent Settings Pressure Setting (psig) AP-42 Default: -0.03 psig	Product Stored	Tank Contents / Chemical Product Name	Exhaust to Scrubber?	Scrubber Control Efficiency (%)	Month Throughput (gal/month)	Annual Throughput (gal/year)	Number of Turnovers Per Year	Maximum Hourly Pumping Rate (gpm)	Is Tank Equipped with a Submerged FFI Pipe?	VOC Emissions (lb/yr)	VOC Emissions: EPA TANKS 5.1 Output for Baseline Annual Total Losses (lb/yr)	VOC Emissions (ppm)			
1	Task Farm 1	EU 1	11	Cylinder	24	12	23	23	19,500	Vertical	Gray (Medium)	Gray (Medium)	Good	Good	Fixed roof	Flat	NA	0.002	Yes	Fully Insulated	609.67	659.67	609.67	Assume once per day (365 total per year)	NA	NA	-0.03 psig	-0.03 psig	Only Liquid Industrial Waste	Hydraulic Oil (Assume No. 6 Fuel Oil for EPA TANKS 5.1)	No	NA	2,500,000	30,000,000	Once per day (365 total per year)	500 gpm	Yes	9.9E-02	872	0.44			
	Task Farm 1	EU 2	12		24	12	23	23	19,500																																		
	Task Farm 1	EU 3	13		24	12	23	23	19,500																																		
	Task Farm 1	EU 4	14		24	12	23	23	19,500																																		
	Task Farm 1	EU 5	15		24	12	23	23	19,500																																		
	Task Farm 1	EU 6	16		24	12	23	23	19,500																																		
2	Task Farm 2	EU 7	21	Cylinder	19.5	12.5	18.5	18.5	16,000	Vertical	Gray (Medium)	Gray (Medium)	Good	Good	Fixed roof	Flat	0.0625	0.002	Yes	Assume Fully Insulated	609.67	659.67	609.67	Assume once per day (365 total per year)	NA	Assume AP-42 Calculation	-0.03 psig	-0.03 psig	Only Liquid Industrial Waste	Hydraulic Oil (Assume No. 6 Fuel Oil for EPA TANKS 5.1)	Oil Scrubber	70%	2,500,000	30,000,000	Once per day (365 total per year)	500 gpm	Yes	3.2E-02	277	0.14			
	Task Farm 2	EU 8	22		19.5	12.5	18.5	18.5	16,000																																		
	Task Farm 2	EU 9	23		34.5	10	33.5	33.5	16,000																																		
	Task Farm 2	EU 10	24		34.5	10	33.5	33.5	16,000																																		
3	Task Farm 4	EU 11	41	Cylinder	24	12	23	23	19,500	Vertical	Gray (Medium)	Gray (Medium)	Good	Good	Fixed roof	Flat	NA	0.002	No	No	NA	NA	NA	NA	NA	NA	NA	Assume AP-42 Calculation	-0.03 psig	-0.03 psig	Petroleum Product	Hydraulic Oil (Assume No. 6 Fuel Oil for EPA TANKS 5.1)	No	NA	2,500,000	30,000,000	Once per day (365 total per year)	100 gpm	Yes	2.8E-01	23	1.2E-02	
	Task Farm 4	EU 12	44		24	12	23	23	19,500																																		
	Task Farm 4	EU 13	45		24	12	23	23	19,500																																		
	Task Farm 4	EU 14	46		24	12	23	23	19,500																																		
4	High Bay	EU 15	B1	Cylinder	8	8	7	7	10,000	Vertical	Gray (Medium)	Gray (Medium)	Good	Good	Fixed roof	Flat	0.0625	0.002	No	No	NA	NA	NA	NA	NA	NA	NA	NA	Assume AP-42 Calculation	-0.03 psig	-0.03 psig	Petroleum Product	Hydraulic Oil (Assume No. 6 Fuel Oil for EPA TANKS 5.1)	No	NA	2,500,000	30,000,000	Once per day (365 total per year)	200 gpm	Yes	4.2E-01	37	1.9E-02
	High Bay	EU 16	B2		19	10	18	18	10,000																																		
	High Bay	EU 17	B3		19	10	18	18	10,000																																		
	High Bay	EU 18	B4		8	8	7	7	6,000																																		
	High Bay	EU 19	B5		8	8	7	7	6,000																																		
5	Main Bay	EU 20	OD-1	Cylinder	16	15	15	15	19,500	Vertical	Gray (Medium)	Gray (Medium)	Good	Good	Fixed roof	Flat	0.0625	0.002	Yes	Assume Fully Insulated	609.67	659.67	609.67	Assume once per day (365 total per year)	NA	Assume AP-42 Calculation	-0.03 psig	-0.03 psig	Waste Oil	Hydraulic Oil (Assume No. 6 Fuel Oil for EPA TANKS 5.1)	Oil Scrubber	70%	2,500,000	30,000,000	Once per day (365 total per year)	500 gpm	Yes	3.0E-02	263	0.13			
	Main Bay	EU 21	OD-2		16	15	15	15	19,500																																		
	Main Bay	EU 22	OD-3		16	15	15	15	19,500																																		
	Main Bay	EU 23	OD-4		16	15	15	15	19,500																																		
	Main Bay	EU 24	OD-5		16	15	15	15	19,500																																		
	Main Bay	EU 25	OD-6		16	15	15	15	19,500																																		

*Monthly VOC emissions are calculated based on the 365 annual emissions presented from EPA TANKS 5.1 and divided by 12. VOC lbs of continuous annual emissions (i.e., assume the tanks are continuously being utilized over the course of the year).



Aevidas Specialty Services Corp (SRN: N7359)
Rebuilt Used Oil Recycling Facility
 Potential to Emit - Tanks

Table B-1b. Tanks Potential Emissions (TACs/Other Contaminants)

Hydraulic Oil Material ¹	Toxic Air Contaminant / Other Contaminant ²	CAS #	Concentration ²	Total Hourly Air Contaminant Emissions ³ (lb/hr)	Total Annual Air Contaminant Emissions ⁴ (tpy)
Hydraulic Oil 68 ⁵	solvent refined heavy paraffinic distillate	64741884	50%	5.0E-02	2.2E-01
	2,6-di-tert-butylphenol	128392	0.25%	2.5E-04	1.1E-03
	distillates (petroleum) solvent-refined light paraffinic	64741895	3.8%	3.7E-03	1.6E-02
	Residual oils (petroleum), solvent deasphalted	64741953	3.8%	3.7E-03	1.6E-02
	Distillates (petroleum), solvent-refined heavy naphthenic	64741964	3.8%	3.7E-03	1.6E-02
	Residual oils, petroleum, solvent-refined	64742014	3.8%	3.7E-03	1.6E-02
	Distillates, (petroleum), clay-treated heavy naphthenic	64742445	3.8%	3.7E-03	1.6E-02
	Distillates (petroleum), clay-treated light naphthenic	64742456	3.8%	3.7E-03	1.6E-02
	hydrotreated heavy naphthenic distillate	64742525	3.8%	3.7E-03	1.6E-02
	hydrotreated light naphthenic distillate	64742536	3.8%	3.7E-03	1.6E-02
	hydrotreated heavy paraffinic mineral oil	64742547	3.8%	3.7E-03	1.6E-02
	hydrotreated light paraffinic distillate	64742558	3.8%	3.7E-03	1.6E-02
	Distillates (petroleum), solvent-dewaxed light paraffinic	64742569	3.8%	3.7E-03	1.6E-02
	Residual oils (petroleum), hydrotreated	64742570	3.8%	3.7E-03	1.6E-02
	Lubricating oils (petroleum), hydrotreated spent	64742581	3.8%	3.7E-03	1.6E-02
	residual oils (petroleum) solvent-dewaxed	64742627	3.8%	3.7E-03	1.6E-02
	Light Naphthenic oils	64742638	3.8%	3.7E-03	1.6E-02
	dewaxed heavy paraffinic mineral oil	64742650	3.8%	3.7E-03	1.6E-02
	Paraffin oils (petroleum), catalytic dewaxed heavy	64742707	3.8%	3.7E-03	1.6E-02
	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based, high-viscosity	72623859	3.8%	3.7E-03	1.6E-02
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	72623860	3.8%	3.7E-03	1.6E-02	
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	72623871	3.8%	3.7E-03	1.6E-02	
Universal UniTrack Hydraulic Oil	hydrotreated heavy paraffinic mineral oil	64742547	86%	8.6E-02	3.7E-01
	dewaxed heavy paraffinic mineral oil	64742650	37%	3.7E-02	1.6E-01
	various	various	15%	1.5E-02	6.5E-02
269 Hydraulic Oil H1 ISO 22, 32, 46, 68, 100, 150 and 220	Dec-1-ene, homopolymer, hydrogenated Dec-1-ene, oligomers, hydrogenated	68037014	100%	9.9E-02	4.4E-01
	2,6-di-tert-butyl-p-cresol	128370	1%	9.9E-04	4.4E-03
Hydraulic Oil 46	hydrotreated heavy paraffinic mineral oil	64742547	90%	9.0E-02	3.9E-01

¹ The hydraulic oils listed in this table are similar types of hydraulic oils with corresponding ingredients that could be stored and processed at Aevidas; thus, each of them have been evaluated.

² Information obtained from Safety Data Sheets for the respective oil material listed.

³ Hourly emissions are based on applying the maximum hourly VOC emissions generated from EPA TANKS 5.1, as shown in Table B-1a, and the respective maximum concentration listed for the air contaminant as listed on the SDS.

⁴ Annual emission rates are based on continuous operation at 8,760 hrs/yr.

⁵ The SDS specifies a total of 20 various CAS# / ingredients for this oil that have a concentration up to 75%. The SDS specifies that the oil may contain one or more of these 20 ingredients. Therefore, it is assumed that all of the 20 ingredients adds up to a total 75% (3.8% each) and emissions are evaluated for each ingredient at 3.8% each.

Table B-1c. H₂S Potential Emissions from the Oil Scrubber

Pollutant	Concentration ¹ (ppm)	Scrubber Control Efficiency ² (%)	Hourly Emissions ³ (lb/hr)	Annual Emissions ⁴ (tpy)
H ₂ S	50	70%	0.32	1.4

¹ Concentration of H₂S controlled in the scrubber is based on the maximum H₂S pollutant loading of 50 ppmv in the proposed scrubber to be installed, as provided by Monroe Environmental.

² A conservative control efficiency of 70% was applied to the calculations based on EPA's Air Pollution Control Technology Fact Sheet for a Packed-Bed/Packed-Tower Wet Scrubber (document No. EPA-452/F-03-015).

³ Hourly emissions are calculated using Equation 10 contained in Chapter 5 of the Michigan Air Use Permit Technical Manual and based on a maximum H₂S concentration of 50 ppmv, the molecular weight of H₂S at 34.08 g/mol, a maximum gas exhaust flow rate of 4,000 acfm in the proposed scrubber to be installed, as provided by Monroe Environmental, and applying a conservative 70% control efficiency from the scrubber.

⁴ Annual emission rates are based on continuous operation at 8,760 hrs/yr.



Aevitas Specialty Services Corp (SRN: N7359)
Rebuilt Used Oil Recycling Facility
 Potential to Emit - Natural Gas-Fired Boiler (EXEMPT)

Table B-2. EXEMPT Natural Gas-Fired Boiler Potential Emissions (NO CHANGES FROM PTI NO. 10-12)

Specifications					
Total Heat Input Capacity (MMBtu/hr)		6.3			
Natural Gas Heating Value (Btu/scf)		1,020			
Hours of Operation (hrs/yr)		8,760			
Pollutant	Emission Factor (lb/MMscf)	Emission Factor Basis	Total Hourly Emissions¹ (lb/hr)	Total Annual Emissions² (tpy)	
NO _x	100	AP-42 Ch. 1.4, Table 1.4-1	0.6	2.7	
CO	84		0.5	2.3	
PM (filterable)	1.9	AP-42 Ch. 1.4, Table 1.4-2	1.2E-02	5.1E-02	
PM ₁₀ (filterable & condensable)	7.6		4.7E-02	0.21	
PM _{2.5} (filterable & condensable)	7.6		4.7E-02	0.21	
SO ₂ (natural gas)	0.6		3.7E-03	1.6E-02	
VOC	5.5		3.4E-02	0.15	
Lead	0.0005	AP-42 Ch. 1.4, Table 1.4-2	3.1E-06	1.4E-05	
HAPs / TACs		CAS #			
Arsenic	7440382	2.0E-04	AP-42, Ch. 1.4, Table 1.4-4	1.2E-06	5.4E-06
Benzene	71432	2.1E-03	AP-42, Ch. 1.4, Table 1.4-3	1.3E-05	5.7E-05
Beryllium	7440417	1.2E-05	AP-42, Ch. 1.4, Table 1.4-4	7.4E-08	3.2E-07
Cadmium	7440439	1.1E-03		6.8E-06	3.0E-05
Chromium, total	7440473	1.4E-03		8.6E-06	3.8E-05
Cobalt	7440484	8.4E-05		5.2E-07	2.3E-06
Dichlorobenzene	253212266	1.2E-03	AP-42, Ch. 1.4, Table 1.4-3	7.4E-06	3.2E-05
Formaldehyde	50000	7.5E-02		4.6E-04	2.0E-03
Hexane	110543	1.8E+00		1.1E-02	4.9E-02
Manganese	7439965	3.8E-04		2.3E-06	1.0E-05
Mercury	7439976	2.6E-04	AP-42, Ch. 1.4, Table 1.4-4	1.6E-06	7.0E-06
Nickel	7440020	2.1E-03		1.3E-05	5.7E-05
Selenium	7782492	2.4E-05		1.5E-07	6.5E-07
Toluene	108883	3.4E-03	AP-42, Ch. 1.4, Table 1.4-3	2.1E-05	9.2E-05
Polyyclic Organic Matter (POMs)					
2-Methylnaphthalene	91576	2.4E-05	AP-42, Ch. 1.4, Table 1.4-3	1.5E-07	6.5E-07
3-Methylcholanthrene	56495	1.8E-06		1.1E-08	4.9E-08
7,12-Dimethylbenz(a)anthracene	57976	1.6E-05		9.9E-08	4.3E-07
Acenaphthene	83329	1.8E-06		1.1E-08	4.9E-08
Acenaphthylene	208968	1.8E-06		1.1E-08	4.9E-08
Anthracene	120127	2.4E-06		1.5E-08	6.5E-08
Benzo(a)anthracene	56553	1.8E-06		1.1E-08	4.9E-08
Benzo(a)pyrene	50328	1.2E-06		7.4E-09	3.2E-08
Benzo(b)fluoranthene	205992	1.8E-06		1.1E-08	4.9E-08
Benzo(g,h,i)perylene	191242	1.2E-06		7.4E-09	3.2E-08
Benzo(k)fluoranthene	207089	1.8E-06		1.1E-08	4.9E-08
Chrysene	218019	1.8E-06		1.1E-08	4.9E-08
Dibenz(a,h)anthracene	53703	1.2E-06		7.4E-09	3.2E-08
Fluoranthene	206440	3.0E-06		1.9E-08	8.1E-08
Fluorene	86737	2.8E-06		1.7E-08	7.6E-08
Indeno(1,2,3,c,d)pyrene	193395	1.8E-06		1.1E-08	4.9E-08
Naphthalene	91203	6.1E-04		3.8E-06	1.7E-05
Phenanthrene	85018	1.7E-05		1.1E-07	4.6E-07
Pyrene	129000	5.0E-06		3.1E-08	1.4E-07
Maximum Single HAP (Hexane)				4.9E-02	
Aggregate HAPs				5.1E-02	
Non-HAP TACs					
Barium	7440393	4.4E-03	AP-42, Ch. 1.4, Table 1.4-4	2.7E-05	1.2E-04
Butane	106978	2.1E+00	AP-42, Ch. 1.4, Table 1.4-3	1.3E-02	5.7E-02
Copper	7440508	8.5E-04	AP-42, Ch. 1.4, Table 1.4-4	5.3E-06	2.3E-05
Molybdenum	7439987	1.1E-03		6.8E-06	3.0E-05
Pentane	109660	2.6E+00	AP-42, Ch. 1.4, Table 1.4-3	1.6E-02	7.0E-02
Vanadium	7440622	2.3E-03	AP-42, Ch. 1.4, Table 1.4-4	1.4E-05	6.2E-05
Zinc	7440666	2.9E-02		1.8E-04	7.8E-04

¹ Hourly emission rates are based on the heating value of natural gas and the maximum rated heat input capacity of the boiler.

² Annual emission rates are based on continuous operation at 8,760 hrs/yr.



Aevitas Specialty Services Corp (SRN: N7359)
Rebuilt Used Oil Recycling Facility
 Potential to Emit - Diesel-Fired Emergency Engine (EXEMPT)

Table B-3. EXEMPT Diesel-Fired Emergency Engine Potential Emissions

Engine Parameters						
Engine Horsepower Rating (bhp)	355					
Heat Input (MMBtu/hr)	3					
Diesel Heating Value (Btu/gal)	138,000					
Hours of Operation (hrs/yr)	500					
Criteria Pollutants	Emission Factor	Emission Factor Units	Emission Factor Basis	Hourly Emissions ¹ (lb/hr)	Annual Emissions ² (tpy)	
NO _x	4.41	lb/MMBtu	AP-42 Table 3.3-1	11	2.8	
CO	0.95	lb/MMBtu		2.5	0.6	
PM, filterable	0.31	lb/MMBtu		0.8	0.2	
PM ₁₀ , filterable & condensable	0.31	lb/MMBtu		0.8	0.2	
PM _{2.5} , filterable & condensable	0.31	lb/MMBtu		0.8	0.2	
SO ₂	0.29	lb/MMBtu		0.7	0.2	
VOC	0.35	lb/MMBtu		0.9	0.2	
HAPs / TACs	CAS #					
1,3-Butadiene	106990	3.91E-05	lb/MMBtu	AP-42 Table 3.3-2	1.0E-04	2.5E-05
Acetaldehyde	75070	7.67E-04			2.0E-03	4.9E-04
Acrolein	107028	9.25E-05			2.4E-04	6.0E-05
Benzene	71432	9.33E-04			2.4E-03	6.0E-04
Formaldehyde	50000	1.18E-03			3.0E-03	7.6E-04
Toluene	108883	4.09E-04			1.1E-03	2.6E-04
Xylene	1330207	2.85E-04			7.4E-04	1.8E-04
Polycyclic Organic Matter (POMs)						
Acenaphthene	83329	1.42E-06	lb/MMBtu	AP-42 Table 3.2-2	3.7E-06	9.2E-07
Acenaphthylene	208968	5.06E-06			1.3E-05	3.3E-06
Anthracene	120127	1.87E-06			4.8E-06	1.2E-06
Benz(a)anthracene	56553	1.68E-06			4.3E-06	1.1E-06
Benzo(a)pyrene	50328	1.88E-07			4.9E-07	1.2E-07
Benzo(b)fluoranthene	205992	9.91E-08			2.6E-07	6.4E-08
Benzo(g,h,i)perylene	191242	4.89E-07			1.3E-06	3.2E-07
Benzo(k)fluoranthene	207089	1.55E-07			4.0E-07	1.0E-07
Chrysene	218019	3.53E-07			9.1E-07	2.3E-07
Dibenz(a,h)anthracene	53703	5.83E-07			1.5E-06	3.8E-07
Fluoranthene	206440	7.61E-06			2.0E-05	4.9E-06
Fluorene	86737	2.92E-05			7.5E-05	1.9E-05
Indeno(1,2,3,c,d)pyrene	193395	3.75E-07			9.7E-07	2.4E-07
Naphthalene	91203	8.48E-05			2.2E-04	5.5E-05
Phenanthrene	85018	2.94E-05			7.6E-05	1.9E-05
Pyrene	129000	4.78E-06	1.2E-05	3.1E-06		
Maximum Single HAP (Formaldehyde) (tpy)					7.6E-04	
Aggregate HAPs (tpy)					2.5E-03	
Non-HAP TACs						
Propylene (Propene)	115071	2.58E-03	lb/MMBtu	AP-42 Table 3.3-2	6.7E-03	1.7E-03

¹ Hourly emission rates are based on the maximum horsepower and heat input capacity of the engine.

² Annual emission rates are based on operating 500 hrs/yr.



APPENDIX C

- SAFETY DATA SHEETS

SAFETY DATA SHEET



Hydraulic Oil 68

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier Hydraulic Oil 68
SDS # 460935
Code 460935-AR08

Relevant identified uses of the substance or mixture and uses advised against

Product use Hydraulic fluid.
For specific application advice see appropriate Technical Data Sheet or consult our company representative.

Manufacturer BP Lubricants USA Inc.
1500 Valley Road
Wayne, NJ 07470
Telephone: +1-888-CASTROL
Product Information: +1-877-641-1600

Supplier PAN AMERICAN ENERGY LLC, SUCURSAL
ARGENTINA AV. LEANDRO N. ALEM 1180
PISO 11 – C1001AAT
CIUDAD AUTÓNOMA DE BUENOS AIRES.

Consultas Técnicas 0800-888-8088

EMERGENCY HEALTH INFORMATION: TELÉFONO PARA EMERGENCIAS (24 HORAS) CIQUIME: 0800-222-2933
+1-800-424-9300 (CHEMTREC USA)
+1-703-527-3887 (CHEMTREC outside the US)

EMERGENCY TELEPHONE NUMBER

SECTION 2: Hazards identification

Classification of the substance or mixture Not classified.

GHS label elements

Signal word No signal word.

Hazard statements No known significant effects or critical hazards.

Precautionary statements

Prevention Not applicable.

Response Not applicable.

Storage Not applicable.

Disposal Not applicable.

Other hazards which do not result in classification Defatting to the skin.
Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency.
See 'Notes to physician' under First-Aid Measures, Section 4 of this Safety Data Sheet.

Product name Hydraulic Oil 68

Product code 460935-AR08

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Language ENGLISH

Version 2

(AR)

(ENGLISH)

SECTION 3: Composition/information on ingredients

Substance/mixture Mixture
Highly refined base oil (IP 346 DMSO extract < 3%). Proprietary performance additives.
Other means of identification Not available.

Ingredient name	CAS number	%
Base oil - highly refined	Varies - See Key to abbreviations	≥50 - ≤75
Distillates (petroleum), solvent-refined heavy paraffinic	64741-88-4	≥25 - ≤50
2,6-di-tert-butylphenol	128-39-2	<0.25

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

Description of necessary first aid measures

Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.
Skin contact	Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
Inhalation	If inhaled, remove to fresh air. Get medical attention if symptoms occur.
Ingestion	Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training.

Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	Treatment should in general be symptomatic and directed to relieving any effects. Note: High Pressure Applications Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discolored and extremely painful with extensive subcutaneous necrosis. Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimize tissue loss and prevent or limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.
Specific treatments	No specific treatment.

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SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media	In case of fire, use foam, dry chemical or carbon dioxide extinguisher or spray.
Unsuitable extinguishing media	Do not use water jet.

Specific hazards arising from the chemical

Hazardous thermal decomposition products	In a fire or if heated, a pressure increase will occur and the container may burst. Combustion products may include the following: carbon oxides (CO, CO ₂) (carbon monoxide, carbon dioxide)
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Special protective actions for fire-fighters

No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

Special protective equipment for fire-fighters

Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling.
For emergency responders	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill	Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill	Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor.

SECTION 7: Handling and storage

Precautions for safe handling

Protective measures	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

SECTION 7: Handling and storage

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Not suitable

Prolonged exposure to elevated temperature

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Base oil - highly refined	Ministry of Labor, Employment and Social Security. Argentina (Resolution 295,11/2003) (Argentina). TWA: 5 mg/m ³ 8 hours. Issued/Revised: 11/2003 Form: mist STEL: 10 mg/m ³ 15 minutes. Issued/Revised: 11/2003 Form: mist
Distillates (petroleum), solvent-refined heavy paraffinic	Ministry of Labor, Employment and Social Security. Argentina (Resolution 295,11/2003) (Argentina). TWA: 5 mg/m ³ 8 hours. Issued/Revised: 11/2003 Form: mist STEL: 10 mg/m ³ 15 minutes. Issued/Revised: 11/2003 Form: mist

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.

Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.

The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

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SECTION 8: Exposure controls/personal protection

Eye/face protection

Safety glasses with side shields.

Skin protection

Hand protection

Wear protective gloves if prolonged or repeated contact is likely. Wear chemical resistant gloves. Recommended: Nitrile gloves. The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Body protection

Use of protective clothing is good industrial practice. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

SECTION 9: Physical and chemical properties

Appearance

Physical state

Liquid.

Color

Amber.

Odor

Not available.

Odor threshold

Not available.

pH

Not available.

Melting point

Not available.

Boiling point

Not available.

Flash point

Open cup: >195°C (>383°F) [Cleveland.]

Pour point

24 °C

Evaporation rate

Not available.

Flammability (solid, gas)

Not applicable. Based on - Physical state

Lower and upper explosive (flammable) limits

Not available.

Vapor pressure

Not available.

Vapor density

Not available.

Density

<1000 kg/m³ (<1 g/cm³) at 15°C

Solubility

insoluble in water.

Partition coefficient: n-octanol/water

Not available.

Auto-ignition temperature

Not available.

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SECTION 9: Physical and chemical properties

Decomposition temperature	Not available.
Viscosity	Kinematic: 68 mm ² /s (68 cSt) at 40°C Kinematic: 8.77 mm ² /s (8.77 cSt) at 100°C

SECTION 10: Stability and reactivity

Reactivity	No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame).
Incompatible materials	Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

Information on toxicological effects

Information on the likely routes of exposure Routes of entry anticipated: Dermal, Inhalation.

Potential acute health effects

Eye contact	No known significant effects or critical hazards.
Skin contact	Defatting to the skin. May cause skin dryness and irritation.
Inhalation	Vapor inhalation under ambient conditions is not normally a problem due to low vapor pressure.
Ingestion	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	No specific data.
Skin contact	Adverse symptoms may include the following: irritation dryness cracking
Inhalation	No specific data.
Ingestion	No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Long term exposure

Potential immediate effects	Not available.
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SECTION 11: Toxicological information

Potential delayed effects Not available.

Potential chronic health effects

General No known significant effects or critical hazards.
Carcinogenicity No known significant effects or critical hazards.
Mutagenicity No known significant effects or critical hazards.
Teratogenicity No known significant effects or critical hazards.
Developmental effects No known significant effects or critical hazards.
Fertility effects No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route

Not available.

SECTION 12: Ecological information

Toxicity

Environmental effects No known significant effects or critical hazards.

Persistence and degradability

Not expected to be rapidly degradable.

Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

Mobility in soil

Soil/water partition coefficient (K_{oc}) Not available.

Mobility Spillages may penetrate the soil causing ground water contamination.

Other adverse effects No known significant effects or critical hazards.

Other ecological information Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

SECTION 13: Disposal considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA/ICAO
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

Special precautions for user Not available.

Transport in bulk according to Annex II of MARPOL and the IBC Code Not available.

SECTION 15: Regulatory information

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Other regulations

Australia inventory (AICS)	Not determined.
Canada inventory	Not determined.
China inventory (IECSC)	Not determined.
Japan inventory (ENCS)	At least one component is not listed.
Korea inventory (KECI)	Not determined.
Philippines inventory (PICCS)	Not determined.
Taiwan Chemical Substances Inventory (TCSI)	Not determined.
United States inventory (TSCA 8b)	Not determined.

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SECTION 15: Regulatory information

REACH Status

For the REACH status of this product please consult your company contact, as identified in Section 1.

SECTION 16: Other information

History

Date of issue/Date of revision 01/22/2020.

Date of previous issue 07/20/2018.

Prepared by Product Stewardship

Key to abbreviations

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway

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

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

UN = United Nations

VOC = Volatile Organic Compound

Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1

📌 Indicates information that has changed from previously issued version.

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

SAFETY DATA SHEET



Section 1. Identification

Product name Hydraulic Oil 46
SDS # 401107
Code 401107-US03

Relevant identified uses of the substance or mixture and uses advised against

Product use Hydraulic fluid
For specific application advice see appropriate Technical Data Sheet or consult our company representative.

Supplier BP Lubricants USA Inc.
1500 Valley Road
Wayne, NJ 07470
Telephone: +1-888-CASTROL

EMERGENCY HEALTH INFORMATION: +1-800-447-8735

EMERGENCY SPILL INFORMATION: +1-800-424-9300 (CHEMTREC USA)
+1-703-527-3887 (CHEMTREC outside the US)

Section 2. Hazards identification

OSHA/HCS status This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture Not classified.

GHS label elements

Signal word No signal word.

Hazard statements No known significant effects or critical hazards.

Precautionary statements

Prevention Not applicable.

Response Not applicable.

Storage Not applicable.

Disposal Not applicable.

Hazards not otherwise classified Defatting to the skin.
Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency.
See 'Notes to physician' under First-Aid Measures, Section 4 of this Safety Data Sheet.

Section 3. Composition/information on ingredients

Substance/mixture Mixture
Highly refined base oil (IP 346 DMSO extract < 3%). Proprietary performance additives.

Ingredient name	CAS number	%
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7	≥90

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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Section 3. Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.
Skin contact	Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
Inhalation	If inhaled, remove to fresh air. Get medical attention if symptoms occur.
Ingestion	Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training.

Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	Treatment should in general be symptomatic and directed to relieving any effects. Note: High Pressure Applications Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discolored and extremely painful with extensive subcutaneous necrosis. Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimize tissue loss and prevent or limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.
Specific treatments	No specific treatment.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	In case of fire, use foam, dry chemical or carbon dioxide extinguisher or spray.
Unsuitable extinguishing media	Do not use water jet.

Specific hazards arising from the chemical

Hazardous combustion products	In a fire or if heated, a pressure increase will occur and the container may burst. Combustion products may include the following: carbon oxides (CO, CO ₂) (carbon monoxide, carbon dioxide)
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Special protective actions for fire-fighters

Special protective equipment for fire-fighters	No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.
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Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling.

For emergency responders

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill

Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill

Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Not suitable

Prolonged exposure to elevated temperature

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Distillates (petroleum), hydrotreated heavy paraffinic

ACGIH TLV (United States).

TWA: 5 mg/m³ 8 hours. Issued/Revised: 11/2009 Form: Inhalable fraction

OSHA PEL (United States).

TWA: 5 mg/m³ 8 hours. Issued/Revised: 6/1993

Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained. Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.

Section 8. Exposure controls/personal protection

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.

The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety glasses with side shields.

Skin protection

Hand protection

Wear protective gloves if prolonged or repeated contact is likely. Wear chemical resistant gloves. Recommended: Nitrile gloves. The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Body protection

Use of protective clothing is good industrial practice. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state	Liquid.
Color	Brown.
Odor	Not available.
Odor threshold	Not available.
pH	Not applicable.
Melting point/freezing point	Not available.
Boiling point, initial boiling point, and boiling range	Not available.
Flash point	Open cup: >185°C (>365°F) [Cleveland]
Pour point	-27 °C

Section 9. Physical and chemical properties

Evaporation rate Not available.
Flammability Not applicable. Based on - Physical state
Lower and upper explosion limit/flammability limit Not available.
Vapor pressure

Ingredient name	Vapor Pressure at 20 °C			Vapor pressure at 50 °C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
Distillates (petroleum), hydrotreated heavy paraffinic	<0.08	<0.011	ASTM D 5191			

Relative vapor density Not available.
Density <1000 kg/m³ (<1 g/cm³) at 15°C
Solubility insoluble in water.
Partition coefficient: n-octanol/water Not applicable.
Auto-ignition temperature Not available.
Decomposition temperature Not available.
Viscosity Kinematic: 46 mm²/s (46 cSt) at 40°C
Kinematic: 6.8 mm²/s (6.8 cSt) at 100°C
Particle characteristics
Median particle size Not applicable.

Section 10. Stability and reactivity

Reactivity No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.
Chemical stability The product is stable.
Possibility of hazardous reactions Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid Avoid all possible sources of ignition (spark or flame).
Incompatible materials Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Information on the likely routes of exposure Routes of entry anticipated: Dermal, Inhalation.
Potential acute health effects
Eye contact No known significant effects or critical hazards.
Skin contact No known significant effects or critical hazards.
Inhalation Vapor inhalation under ambient conditions is not normally a problem due to low vapor pressure.
Ingestion No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact No specific data.

Section 11. Toxicological information

Skin contact	Adverse symptoms may include the following: irritation dryness cracking
Inhalation	No specific data.
Ingestion	No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Long term exposure

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Potential chronic health effects

General	No known significant effects or critical hazards.
Carcinogenicity	No known significant effects or critical hazards.
Mutagenicity	No known significant effects or critical hazards.
Teratogenicity	No known significant effects or critical hazards.
Developmental effects	No known significant effects or critical hazards.
Fertility effects	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

No testing has been performed by the manufacturer.

Persistence and degradability

Not expected to be rapidly degradable.

Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

Mobility in soil

Soil/water partition coefficient (K_{oc})	Not available.
Mobility	Spillages may penetrate the soil causing ground water contamination.

Other adverse effects

No known significant effects or critical hazards.

Other ecological information

Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

Section 13. Disposal considerations

Disposal methods The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

Special precautions for user Not available.

Transport in bulk according to IMO instruments Not available.

Section 15. Regulatory information

U.S. Federal regulations

United States inventory (TSCA 8b) All components are active or exempted.

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 311/312

Classification Not applicable.

SARA 313

Form R - Reporting requirements This product does not contain any hazardous ingredients at or above regulated thresholds.

Supplier notification This product does not contain any hazardous ingredients at or above regulated thresholds.

State regulations

Massachusetts The following components are listed: OIL MIST, MINERAL

New Jersey None of the components are listed.

Pennsylvania None of the components are listed.

California Prop. 65

Section 15. Regulatory information

⚠ WARNING: This product can expose you to chemicals including Benzene, which is known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Ethyl acrylate, which is known to the State of California to cause cancer, and Toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Other regulations

Australia inventory (AIIC)	All components are listed or exempted.
Canada inventory	All components are listed or exempted.
China inventory (IECSC)	All components are listed or exempted.
Japan inventory (CSCL)	All components are listed or exempted.
Korea inventory (KECI)	All components are listed or exempted.
Philippines inventory (PICCS)	All components are listed or exempted.
Taiwan Chemical Substances Inventory (TCSI)	All components are listed or exempted.
REACH Status	For the REACH status of this product please consult your company contact, as identified in Section 1.

Section 16. Other information

[National Fire Protection Association \(U.S.A.\)](#)



History

Date of issue/Date of revision	11/16/2021.
Date of previous issue	No previous validation.
Prepared by	Product Stewardship
Key to abbreviations	ACGIH = American Conference of Industrial Hygienists ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor CAS Number = Chemical Abstracts Service Registry Number GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) OEL = Occupational Exposure Limit SDS = Safety Data Sheet STEL = Short term exposure limit TWA = Time weighted average UN = United Nations UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods. Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1

▣ Indicates information that has changed from previously issued version.

[Notice to reader](#)

Section 16. Other information

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.



SAFETY DATA SHEET

269 Hydraulic Oil H1 ISO 22, 32, 46, 68, 100, 150 and 220

Section 1. Identification

GHS product identifier : 269 Hydraulic Oil H1 ISO 22, 32, 46, 68, 100, 150 and 220
Other means of identification : Not available.
Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Food grade hydraulic and compressor oil.

Supplier's details : Schaeffer Mfg. Company
102 Barton Street
Saint Louis, Missouri 63104
Tel: 314-865-4100
Fax: 314-865-4107
Toll Free: 1-800-325-9962
E-Mail: safety@schaefferoil.com
Web: <http://www.schaefferoil.com>

Emergency telephone number (with hours of operation) : +1 314 865-4105 (24-hour response number)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : AQUATIC HAZARD (LONG-TERM) - Category 3

GHS label elements

Signal word : No signal word.

Hazard statements : H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention : P273 - Avoid release to the environment.

Response : Not applicable.

Storage : Not applicable.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Not available.

Ingredient name	%	CAS number
Dec-1-ene, homopolymer, hydrogenated Dec-1-ene, oligomers, hydrogenated 2,6-Di-tert-Butyl-p-cresol	80 - 100 0.1 - 1	68037-01-4 128-37-0

United States: The exact percentage (concentration) in the composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

Canada: The exact percentage (concentration) in the composition has been withheld as a trade secret in accordance with the amended HPR as of April 2018.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Section 4. First aid measures

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical : This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : No specific data.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

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

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : U.S.A. regulations may require reporting spills of this material that could reach any surface waters. Report spills to all applicable Federal, State, Provincial and local authorities and/or the United States National Response Center at (800) 424-8802 as appropriate or required.

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 6. Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

United States

Occupational exposure limits

Ingredient name	Exposure limits
Dec-1-ene, homopolymer, hydrogenated Dec-1-ene, oligomers, hydrogenated 2,6-Di-tert-Butyl-p-cresol	None. NIOSH REL (United States, 10/2016). TWA: 10 mg/m ³ 10 hours. ACGIH TLV (United States, 3/2018). TWA: 2 mg/m ³ 8 hours. Form: Inhalable fraction and vapor

Canada

Occupational exposure limits

Ingredient name	Exposure limits
2,6-Di-tert-Butyl-p-cresol	CA Saskatchewan Provincial (Canada, 7/2013). STEL: 4 mg/m ³ 15 minutes. Form: Inhalable fraction and vapor TWA: 2 mg/m ³ 8 hours. Form: Inhalable fraction and vapor CA Ontario Provincial (Canada, 1/2018). TWA: 2 mg/m ³ 8 hours. Form: Inhalable fraction and vapor. CA British Columbia Provincial (Canada, 7/2018). TWA: 2 mg/m ³ 8 hours. Form: Inhalable vapor and aerosol CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 10 mg/m ³ 8 hours. CA Quebec Provincial (Canada, 1/2014). TWAEV: 10 mg/m ³ 8 hours.

Section 8. Exposure controls/personal protection

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Wear eye protection such as safety glasses, chemical goggles, or face shields if engineering controls or work practices are not adequate to prevent eye contact.
- Skin protection**
- Hand protection** : Use nitrile or oil resistant gloves.
- Body protection** : Personal protective clothing such as gloves, aprons, boots and complete facial protection should be selected based on the task being performed and the risks involved. Users should determine acceptable performance characteristics of protective clothing. Consider physical requirements and other substances present when selecting protective clothing.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved.
- Respiratory protection** : If a risk assessment indicates that respiratory protection is required, use a properly fitted, air-purifying or supplied air respirator that complies with an approved standard. 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.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid. [Clear.]
- Color** : Colorless.
- Odor** : Mild.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point/boiling range** : >300°C (>572°F)
- Flash point** : Open cup: 235 to 277°C (455 to 530.6°F)
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : >10 [Air = 1]
- Relative density** : 0.83 to 0.86
- Solubility** : Insoluble in water.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.

Section 9. Physical and chemical properties

Viscosity	: Kinematic (100°C (212°F)): 4.6 to 31.5 cSt Kinematic (40°C (104°F)): 22.2 to 242 cSt
Flow time (ISO 2431)	: Not available.
VOC content	: Not available.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Conditions to avoid	: No specific data.
Incompatible materials	: Reactive or incompatible with the following materials: Strong acids, bases and oxidizers.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2,6-Di-tert-Butyl-p-cresol	LD50 Oral	Rat	890 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
2,6-Di-tert-Butyl-p-cresol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Skin - Moderate irritant	Rabbit	-	48 hours 500 mg	-

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

Classification

Product/ingredient name	OSHA	IARC	NTP
2,6-Di-tert-Butyl-p-cresol	-	3	-

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Section 11. Toxicological information

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.
Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.
Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

There is no data available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
2,6-Di-tert-Butyl-p-cresol	Acute EC50 1440 µg/L Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours

Persistence and degradability

There is no data available.

Section 12. Ecological information

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Dec-1-ene, homopolymer, hydrogenated Dec-1-ene, oligomers, hydrogenated	>6.5	-	high
2,6-Di-tert-Butyl-p-cresol	5.1	330 to 1800	high

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.

AERG : Not applicable

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.

Clean Air Act Section 112 : Listed

(b) Hazardous Air Pollutants (HAPs)

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Not applicable.

SARA 313

There is no data available.

State regulations


Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

 **WARNING:** This product can expose you to Ethyl acrylate, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Canadian lists

Canada inventory (DSL NDSL) : All components are listed or exempted.

Canadian NPRI : None of the components are listed.

CEPA Toxic substances : None of the components are listed.

Section 16. Other information

Health : 0 / **Flammability :** 1 **Physical hazards :** 0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Health : 0 **Flammability :** 1 **Instability :** 0

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Section 16. Other information

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
AQUATIC HAZARD (LONG-TERM) - Category 3	Calculation method

US Tariff Heading Number : 3403.19.0000

Schedule B Code : 3403.19.0000

History

Date of issue mm/dd/yyyy : 12/15/2019

Date of previous issue : 06/15/2015

Version : 2

Prepared by : KMK Regulatory Services Inc.

Key to abbreviations

: ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



Safety Data Sheet



Universal Oil SDS No: 16 11 01 A

SECTION 1: Identification

Product Identifier: Universal UniTrack Hydraulic Oil

Other means of identification:

SDS Number: 16 11 01 A

Intended Use: Tractor Hydraulic Fluid

Uses Advised Against: All others

24 Hour Emergency Phone Number: CHEMTREC 800-424-9300 (24 Hours)

CANUTEC 613-996-6666

CHEMTREC Mexico 01-800-681-9531

Distributor:
Universal Oil
265 Jefferson Ave
Cleveland OH 44113

SDS Information:
Phone: 216-771-4300
Email:
sales@universaloil.com
URL:
www.universaloil.com

Customer Service:
U.S.: 216-771-4300

SECTION 2: Hazard identification

Classified Hazards

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Other Hazards

None Known

Label Elements

No classified hazards

SECTION 3: Composition/information on ingredients

Chemical Name	CASRN	Concentration ¹
Distillates, petroleum, hydrotreated heavy paraffinic	64742-54-7	45-86
Distillates, petroleum, solvent-dewaxed heavy paraffinic	64742-65-0	<37
Non-Hazardous Materials	VARIOUS	<15

¹ All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

Skin Contact: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops and persists, seek medical attention. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician. (see Note to Physician)

Inhalation (Breathing): First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. Seek immediate medical attention.

Ingestion (Swallowing): First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

Most important symptoms and effects, both acute and delayed: Inhalation of oil mists or vapors generated at elevated temperatures may cause respiratory irritation. Accidental ingestion can result in minor irritation of the digestive tract, nausea and diarrhea. Dry skin and possible irritation with repeated or prolonged exposure.

Notes to Physician: Acute aspirations of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities. When using high-pressure equipment, injection of product under the skin can occur. In this case, the casualty should be sent immediately to the hospital. Do not wait for symptoms to develop. High-pressure hydrocarbon injection injuries may produce substantial necrosis of underlying tissue despite an innocuous appearing external wound. These injuries often require extensive emergency surgical debridement and all injuries should be evaluated by a specialist in order to assess the extent of injury. Early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

SECTION 5: Firefighting measures

NFPA 704 Hazard Class

Health: 0 Flammability: 1 Instability: 0



0 (Minimal)
1 (Slight)
2 (Moderate)
3 (Serious)
4 (Severe)

Extinguishing Media: Dry chemical, carbon dioxide, foam, or water spray is recommended. Water or foam may cause frothing of materials heated above 212°F / 100°C. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

Specific hazards arising from the chemical

Unusual Fire & Explosion Hazards: This material may burn, but will not ignite readily. If container is not properly cooled, it can rupture in the heat of a fire.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of sulfur, nitrogen or phosphorus may also be formed.

Special protective actions for firefighters: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely. Avoid spreading burning liquid with water used for cooling purposes.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

Methods and material for containment and cleaning up: Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken. See Section 13 for information on appropriate disposal.

SECTION 7: Handling and storage

Precautions for safe handling: Keep away from flames and hot surfaces. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8). Spills will produce very slippery surfaces. High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing of high pressure hydraulic oil equipment.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes.

Conditions for safe storage: Use and store this material in cool, dry, well-ventilated area away from heat and all sources of ignition. Keep container(s) tightly closed and properly labeled. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

SECTION 8: Exposure controls/personal protection

Chemical Name	ACGIH	OSHA	Other
Distillates, petroleum, hydrotreated heavy paraffinic	TWA: 5mg/m ³ STEL: 10 mg/m ³ as Oil Mist, if Generated	TWA: 5mg/m ³ as Oil Mist, if Generated	---
Distillates, petroleum, solvent-dewaxed heavy paraffinic	TWA: 5mg/m ³ STEL: 10 mg/m ³ as Oil Mist, if Generated	TWA: 5mg/m ³ as Oil Mist, if Generated	---

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Eye/Face Protection: The use of eye/face protection is not normally required; however, good industrial hygiene practice suggests the use of eye protection that meets or exceeds ANSI Z.87.1 whenever working with chemicals.

Skin/Hand Protection: The use of skin protection is not normally required; however, good industrial hygiene practice suggests the use of gloves or other appropriate skin protection whenever working with chemicals. Suggested protective materials: Nitrile

Respiratory Protection: Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with R or P95 filters may be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

SECTION 9: Physical and chemical properties

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

Appearance: Light amber, Transparent

Physical Form: Liquid

Odor: Petroleum

Odor Threshold: No data

pH: Not applicable

Vapor Density (air=1): >1

Upper Explosive Limits (vol % in air): No data

Lower Explosive Limits (vol % in air): No data

Evaporation Rate (nBuAc=1): No data

Particle Size: Not applicable

Percent Volatile: No data

Flammability (solid, gas): May Ignite

Solubility in Water: Negligible

Flash Point: > 374 °F / > 190 °C

Test Method: Pensky-Martens Closed Cup (PMCC), ASTM D93, EPA 1010

Initial Boiling Point/Range: No data

Vapor Pressure: <1 mm Hg

Partition Coefficient (n-octanol/water) (Kow): No data

Melting/Freezing Point: No data

Auto-ignition Temperature: No data

Decomposition Temperature: No data

Specific Gravity (water=1): 0.86 - 0.88 @ 60°F (15.6°C)

Bulk Density: 7.2 - 7.3 lbs/gal

Viscosity: 7.5 - 9.5 cSt @ 100°C; 36 - 61 cSt @ 40°C

Pour Point: < -51 to -33 °F / < -46 to -36 °C

SECTION 10: Stability and reactivity

Reactivity: Not chemically reactive.

Chemical stability: Stable under normal ambient and anticipated conditions of use.

Possibility of hazardous reactions: Hazardous reactions not anticipated.

Conditions to avoid: Extended exposure to high temperatures can cause decomposition. Avoid all possible sources of ignition.

Incompatible materials: Avoid contact with strong oxidizing agents and strong reducing agents.

Hazardous decomposition products: Not anticipated under normal conditions of use.

SECTION 11: Toxicological information

Information on Toxicological Effects of Substance/Mixture

Substance / Mixture

Acute Toxicity	Hazard	Additional Information	LC50/LD50 Data
Inhalation	Unlikely to be harmful		>5 mg/L (mist, estimated)
Dermal	Unlikely to be harmful		> 2 g/kg (estimated)
Oral	Unlikely to be harmful		> 5 g/kg (estimated)

Aspiration Hazard: Not expected to be an aspiration hazard.

Skin Corrosion/Irritation: Not expected to be irritating. Repeated exposure may cause skin dryness or cracking.

Serious Eye Damage/Irritation: Not expected to be irritating.

Skin Sensitization: No information available on the mixture, however none of the components have been classified for skin sensitization (or are below the concentration threshold for classification).

Respiratory Sensitization: No information available.

Specific Target Organ Toxicity (Single Exposure): No information available on the mixture, however none of the components have been classified for target organ toxicity (or are below the concentration threshold for classification).

Specific Target Organ Toxicity (Repeated Exposure): No information available on the mixture, however none of the components have been classified for target organ toxicity (or are below the concentration threshold for classification).

Carcinogenicity: No information available on the mixture, however none of the components have been classified for carcinogenicity (or are below the concentration threshold for classification).

Germ Cell Mutagenicity: No information available on the mixture, however none of the components have been classified for germ cell mutagenicity (or are below the concentration threshold for classification).

Reproductive Toxicity: No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).

Information on Toxicological Effects of Components

Lubricant Base Oil (Petroleum)

Carcinogenicity: The petroleum base oils contained in this product have been highly refined by a variety of processes including severe hydrocracking/hydroprocessing to reduce aromatics and improve performance characteristics. All of the oils meet the IP-346 criteria of less than 3 percent PAH's and are not considered carcinogens by NTP, IARC, or OSHA.

SECTION 12: Ecological information

GHS Classification:
No classified hazards

Toxicity: All acute aquatic toxicity studies on samples of lubricant base oils show acute toxicity values greater than 100 mg/L for invertebrates, algae and fish. These tests were carried out on water accommodated fractions and the results are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions.

Persistence and Degradability: The hydrocarbons in this material are not readily biodegradable, but since they can be degraded by microorganisms, they are regarded as inherently biodegradable.

Bioaccumulative Potential: Log Kow values measured for the hydrocarbon components of this material are greater than 5.3, and therefore regarded as having the potential to bioaccumulate. In practice, metabolic processes may reduce bioconcentration.

Mobility in Soil: Volatilization to air is not expected to be a significant fate process due to the low vapor pressure of this material. In water, base oils will float and spread over the surface at a rate dependent upon viscosity. There will be significant removal of hydrocarbons from the water by sediment adsorption. In soil and sediment, hydrocarbon components will show low mobility with adsorption to sediments being the predominant physical process. The main fate process is expected to be slow biodegradation of the hydrocarbon constituents in soil and sediment.

Other adverse effects: None anticipated.

SECTION 13: Disposal considerations

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations. This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste and is not believed to exhibit characteristics of hazardous waste. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste. This material under most intended uses would become "Used Oil" due to contamination by physical or chemical impurities. Whenever possible, Recycle used oil in accordance with applicable federal and state or local regulations. Container contents should be completely used and containers should be emptied prior to discard.

SECTION 14: Transport information

U.S. Department of Transportation (DOT)

Shipping Description:

Not regulated

Note:

If shipped by land in a packaging having a capacity of 3,500 gallons or more, the provisions of 49 CFR, Part 130 apply. (Contains oil)

International Maritime Dangerous Goods (IMDG)

Shipping Description: *Not regulated*
Note: *U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 25.*

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:
 Not applicable

International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)

UN/ID #: *Not regulated*
Note: *U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 24.*

	LTD. QTY	Passenger Aircraft	Cargo Aircraft Only
Packaging Instruction #:	---	---	---
Max. Net Qty. Per Package:	---	---	---

SECTION 15: Regulatory information

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):

This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

CERCLA/SARA - Section 311/312 (Title III Hazard Categories)

Acute Health Hazard: No
Chronic Health Hazard: No
Fire Hazard: No
Pressure Hazard: No
Reactive Hazard: No

CERCLA/SARA - Section 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372:

Chemical Name	Concentration ¹	de minimis
Zinc Compound(s)	<2	1.0%

EPA (CERCLA) Reportable Quantity (in pounds):

This material does not contain any chemicals with CERCLA Reportable Quantities.

California Proposition 65:

This material does not contain any chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65.

International Hazard Classification

Canada:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the Regulations.

WHMIS Hazard Class:

none

National Chemical Inventories

All components are either listed on the US TSCA Inventory, or are not regulated under TSCA.
 All components are either on the DSL, or are exempt from DSL listing requirements.

U.S. Export Control Classification Number: EAR99

SECTION 16: Other information

Date of Issue:	Previous Issue Date:	SDS Number:	Status:
5-13-15	26-Jul-2013	16 11 01 A	FINAL

Revised Sections or Basis for Revision:

Distributor (Section 1); Toxicological (Section 11)

Guide to Abbreviations:

ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; IARC = International Agency for Research on Cancer; INSHT = National Institute for Health and Safety at Work; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

Disclaimer of Expressed and Implied Warranties:

The information presented in this Safety Data Sheet is based on data believed to be accurate as of the date this Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.



SAFETY DATA SHEET

1. Identification

Product identifier	Used Potassium Hydroxide Solution
Other means of identification	
Product code	1175
Synonyms	KOH
Recommended use	Used product from the caustic cleaning of metal castings (including ceramic core removal).
Recommended restrictions	For industrial use only.
Manufacturer/Importer/Supplier/Distributor information	
Company name	Howmet Aerospace
Address	3850 White Lake Drive Whitehall, MI 49461 USA
Telephone number	+1-412-553-4649
E-mail	SDSRequests@howmet.com
Website	For a current Safety Data Sheet, refer to Howmet Aerospace websites: www.howmet.com .

Emergency telephone number

CHEMTREC	For Dangerous Goods Incidents ONLY (spill, leak, fire, exposure or accident), call CHEMTREC 24/7 at:
Canada, USA	(800) 424-9300
International	+1-703-527-3887

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3
OSHA defined hazards	Not classified.	
Label elements		



Signal word	Danger
Hazard statement	May be corrosive to metals. Harmful if swallowed. Causes severe skin burns and eye damage. Harmful to aquatic life.

Precautionary statement

Prevention	Keep only in original container. Do not breathe mist/vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Absorb spillage to prevent material damage.
Storage	Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Potassium hydroxide	1310-58-3	15 - 45
Aluminum oxide (non-fibrous)	1344-28-1	< 5
Silica, amorphous	7631-86-9	< 5
Zirconium silicate	10101-52-7	< 5

Composition comments All concentrations are in percent by weight unless otherwise indicated. Components not listed are either non-hazardous or are below reportable limits.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

Ingestion Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed Nausea, vomiting. Diarrhea. Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed. Combustion products may include: silicon oxides, metal oxides. Contact with metals may evolve flammable hydrogen gas.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Dike fire control water for later disposal. Water runoff can cause environmental damage. Avoid discharge into drains, water courses or onto the ground.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water. Retain and dispose of contaminated wash water

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Environmental precautions

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

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

Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Store in tightly closed container. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection**Occupational exposure limits****U.S. - OSHA****Components****Type****Value**

Silica, amorphous (CAS 7631-86-9)

TWA

80 mg/m3

US. OSHA Table Z-1 Permissible Exposure Limits (PEL) for Air Contaminants (29 CFR 1910.1000)**Components****Type****Value****Form**

Aluminum oxide (non-fibrous) (CAS 1344-28-1)

PEL

5 mg/m3

Respirable fraction.

15 mg/m3

Total dust.

Zirconium silicate (CAS 10101-52-7)

PEL

5 mg/m3

US. OSHA Table Z-3 Permissible Exposure Limits (PEL) for Mineral Dusts (29 CFR 1910.1000)**Components****Type****Value****Form**

Aluminum oxide (non-fibrous) (CAS 1344-28-1)

TWA

5 mg/m3

Respirable fraction.

15 mg/m3

Total dust.

50 mppcf

Total dust.

15 mppcf

Respirable fraction.

Silica, amorphous (CAS 7631-86-9)

TWA

5 mg/m3

Respirable fraction.

15 mg/m3

Total dust.

20 mppcf

US. ACGIH Threshold Limit Values (TLV)**Components****Type****Value**

Potassium hydroxide (CAS 1310-58-3)

Ceiling

2 mg/m3

Zirconium silicate (CAS 10101-52-7)

STEL

10 mg/m3

TWA

5 mg/m3

NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended

Components	Type	Value
Silica, amorphous (CAS 7631-86-9)	IDLH	3000 mg/m3
Zirconium silicate (CAS 10101-52-7)	IDLH	25 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Potassium hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m3
Silica, amorphous (CAS 7631-86-9)	TWA	6 mg/m3
Zirconium silicate (CAS 10101-52-7)	STEL	10 mg/m3
	TWA	5 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear approved chemical safety goggles. Wear face shield if there is risk of splashes.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Skin protection

Other Wear appropriate chemical resistant clothing.

Respiratory protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Wear NIOSH approved respirator appropriate for airborne exposure at the point of use. If respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134. Appropriate respirator selection should be made by a qualified professional.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties**Appearance**

Physical state	Liquid.
Form	Liquid.
Color	Colorless to Off-white.

Odor Odorless.

Odor threshold Not available.

pH 14

Melting point/freezing point Not available.

Initial boiling point and boiling range 215.6 °F (102 °C)

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	Reacts violently with strong acids. This product may react with oxidizing agents. May be corrosive to metals.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Contact with metals may evolve flammable hydrogen gas.
Conditions to avoid	Minimize exposure to air. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Oxidizing agents. Metals. Maleic anhydride. Carbon dioxide.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged or excessive inhalation may cause respiratory tract irritation.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns. Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics	Nausea, vomiting. Diarrhea. Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
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Information on toxicological effects

Acute toxicity	Harmful if swallowed.
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Components	Species	Test Results
Aluminum oxide (non-fibrous) (CAS 1344-28-1)		
Acute		
Oral		
LD50	Rat	> 5000 mg/kg/day
Potassium hydroxide (CAS 1310-58-3)		
Acute		
Oral		
LD50	Rat	365 mg/kg
Silica, amorphous (CAS 7631-86-9)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg, 24 Hours
Inhalation		
<i>Dust</i>		
LC50	Rat	> 0.14 mg/l, 4 Hours

Components	Species	Test Results
Oral LD50	Rat	> 3300 mg/kg
Skin corrosion/irritation	Causes severe skin burns.	
Serious eye damage/eye irritation	Causes serious eye damage.	
Respiratory or skin sensitization		
Respiratory sensitization	Not a respiratory sensitizer.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	Not classifiable as to carcinogenicity to humans.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Silica, amorphous (CAS 7631-86-9)	3 Not classifiable as to carcinogenicity to humans.	
NTP Report on Carcinogens		
Not listed.		
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)		
Not listed.		
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.	
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Does not meet classification criteria.	
12. Ecological information		
Ecotoxicity	Harmful to aquatic life.	
Components		
Potassium hydroxide (CAS 1310-58-3)		
Aquatic		
Fish	LC50	Western mosquitofish (Gambusia affinis) 80 mg/l, 96 Hours
Persistence and degradability	The product contains inorganic compounds which are not biodegradable.	
Bioaccumulative potential	No data available.	
Mobility in soil	No data available.	
Other adverse effects	No data available.	
13. Disposal considerations		
Disposal instructions	Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.	
Local disposal regulations	Dispose in accordance with all applicable regulations.	
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.	
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).	
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.	
14. Transport information		
DOT		
UN number	UN1814	
UN proper shipping name	Potassium hydroxide, solution	

Transport hazard class(es)

Class 8
Subsidiary risk -
Label(s) 8
Packing group II

Environmental hazards

Marine pollutant No.

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Special provisions B2, IB2, T7, TP2

Packaging exceptions 154

Packaging non bulk 202

Packaging bulk 242

IATA

UN number UN1814

UN proper shipping name Potassium hydroxide solution

Transport hazard class(es)

Class 8
Subsidiary risk -

Packing group II

Environmental hazards No.

ERG Code 8L

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1814

UN proper shipping name POTASSIUM HYDROXIDE SOLUTION

Transport hazard class(es)

Class 8
Subsidiary risk -

Packing group II

Environmental hazards

Marine pollutant No.

EmS F-A, S-B

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Potassium hydroxide (CAS 1310-58-3) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA)

All components of the mixture on the TSCA 8(b) inventory are designated "active".

Superfund Amendments and Reauthorization Act of 1986 (SARA)**SARA 302 Extremely hazardous substance**

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories Corrosive to metal
Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Aluminum oxide (non-fibrous)	1344-28-1	< 5

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Aluminum oxide (non-fibrous) (CAS 1344-28-1)
Potassium hydroxide (CAS 1310-58-3)
Silica, amorphous (CAS 7631-86-9)

US. New Jersey Worker and Community Right-to-Know Act

Aluminum oxide (non-fibrous) (CAS 1344-28-1)
Potassium hydroxide (CAS 1310-58-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Aluminum oxide (non-fibrous) (CAS 1344-28-1)
Potassium hydroxide (CAS 1310-58-3)
Silica, amorphous (CAS 7631-86-9)

US. Rhode Island RTK

Aluminum oxide (non-fibrous) (CAS 1344-28-1)
Potassium hydroxide (CAS 1310-58-3)
Silica, amorphous (CAS 7631-86-9)
Zirconium silicate (CAS 10101-52-7)

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 13-October-2023

Revision date

-

Version #

01

Further information

Note: Generated at additional Howmet locations:
Dover, NJ; Wichita Falls, TX; LaPorte, IN; Hampton, VA; Whitehall, MI.

Disclaimer

Howmet Aerospace Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

Used Potassium Hydroxide Solution

Hazard statement

May be corrosive to metals. Harmful if swallowed. Causes severe skin burns and eye damage. Harmful to aquatic life.

Precautionary statement

Prevention

Keep only in original container. Do not breathe the mist/vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response

If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Absorb spillage to prevent material damage.

Storage

Store locked up. Store in corrosive resistant container with a resistant inner liner.

Disposal

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



Howmet Aerospace
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For Dangerous Goods Incidents ONLY (spill, leak, fire, exposure or accident), call CHEMTREC 24/7 at:
(800) 424-9300 (Canada, USA)
+1-703-527-3887 (International)



Danger

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. Additional information is given in the Safety Data Sheet.


California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

1. Identification

Product identifier	Sulphuric Acid 93%	
Other means of identification		
Synonyms	Sulfuric acid, Battery acid, Dihydrogen sulfate, Electrolyte acid, Hydrogen sulfate, Mattling acid, Oil of vitrio, Spirit of sulfur	
Recommended use	Industrial applications	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier/Distributor information		
Manufacturer		
Company name	PVS Benson	
Address	1012 Gore Road Freelton, ON L0R1K0 Canada	
Telephone	1-800-265-0014	
e-mail	bensoncs@pvschemicals.com	
Emergency phone number	24 hours/7 days:	1-313-921-1200
Supplier	See above.	

2. Hazard identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Acute toxicity, inhalation	Category 1
	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Carcinogenicity	Category 1A
	Specific target organ toxicity following single exposure	Category 3 respiratory tract irritation
Environmental hazards	Not classified.	
Label elements		
Signal word	Danger	
Hazard statement	May be corrosive to metals. Causes severe skin burns and eye damage. Fatal if inhaled. May cause respiratory irritation. May cause cancer.	
Precautionary statement		
Prevention	Keep only in original packaging. Do not breathe vapour. Wash thoroughly after handling. Wear protective gloves, protective clothing, eye protection and face protection. Wear respiratory protection. Use only outdoors or in a well-ventilated area. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.	
Response	Absorb spillage to prevent material-damage. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF INHALED: remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. Specific treatment is urgent (see this label). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical attention.	
Storage	Store in a corrosion resistant container with a resistant inner liner. Store in a well-ventilated place. Keep container tightly closed. Store locked up.	
Disposal	Dispose of container in accordance with local, regional, national and international regulations.	
Other hazards	None known.	
Supplemental information	None.	

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Sulphuric acid		7664-93-9	93

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation	IF INHALED: remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTRE or doctor. Specific treatment is urgent (see this label).
Skin contact	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTRE or doctor. Specific treatment (see information on this label).
Eye contact	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 CENTRE or doctor.
Ingestion	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTRE or doctor.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Symptoms may be delayed.
General information	Immediate medical attention is required. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wear impervious gloves and chemical splash goggles. Avoid contact with eyes and skin. Keep out of reach of children.

5. Fire-fighting measures

Suitable extinguishing media	Dry chemical. Alcohol foam. Carbon dioxide.
Unsuitable extinguishing media	Use water with care - water applied directly will cause evolution of heat and splattering.
Specific hazards arising from the chemical	Firefighters should wear a self-contained breathing apparatus. Not flammable, but reacts with most metals to form flammable hydrogen gas.
Hazardous combustion products	May include and are not limited to: Oxides of sulphur. Irritating and toxic gases or fumes may be released during a fire.
Special protective equipment and precautions for firefighters	Firefighters should wear full protective clothing including self-contained breathing apparatus.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe vapours or spray mist. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Stop leak if you can do so without risk. Should not be released into the environment. Prevent entry into waterways, sewer, basements or confined areas. Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use.
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Prevent entry into waterways, sewers, basements or confined areas. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Do not discharge into lakes, streams, ponds or public waters.

7. Handling and storage

Precautions for safe handling	DANGER -- CORROSIVE Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapours or spray mist. Do not get in eyes, on skin, or on clothing. Use only outdoors or in a well-ventilated area. Avoid prolonged exposure. Wear appropriate personal protective equipment. Should be handled in closed systems, if possible. Wash thoroughly after handling. Use good industrial hygiene practices in handling this material. Keep container tightly closed. When using do not eat or drink.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in a cool, dry place out of direct sunlight. Store in a corrosion resistant container with a resistant inner liner. Store in a closed container away from incompatible materials. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep away from heat, open flames or other sources of ignition. Keep out of reach of children.

8. Exposure controls/Personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Sulphuric acid (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Sulphuric acid (CAS 7664-93-9)	STEL	3 mg/m ³
	TWA	1 mg/m ³

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Sulphuric acid (CAS 7664-93-9)	TWA	0.2 mg/m ³	Mist.

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
Sulphuric acid (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Sulphuric acid (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.

Canada. Quebec OELs. (Ministry of Labour - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Sulphuric acid (CAS 7664-93-9)	STEL	3 mg/m ³
	TWA	1 mg/m ³

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines See above

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Attempts should be made to eliminate all contact with skin and eyes, and to limit inhalation exposure.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield. Eye wash fountain is recommended.

Skin protection

Hand protection Impervious gloves. Confirm with reputable supplier first.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. As required by employer code.

Respiratory protection	Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. Respirator should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134), CAN/CSA-Z94.4 and ANSI's standard for respiratory protection (Z88.2).
Thermal hazards	Not applicable.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. When using do not eat or drink.

9. Physical and chemical properties

Appearance	Liquid
Physical state	Liquid.
Form	Liquid
Colour	Colourless
Odour	Odourless
Odour threshold	> 1 mg/m ³
pH	< 1
Melting point/freezing point	Not available.
Initial boiling point and boiling range	287 °C (548.6 °F)
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable
Flammability limit - upper (%)	Not applicable
Explosive limit - lower (%)	Not available.
Explosive limit – upper (%)	Not available.
Vapour pressure	0.0018 mmHg
Vapour density	3.4 (Air=1)
Relative density	1.834 - 1.836 g/cm ³
Solubility(ies)	
Solubility (Water)	Miscible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not applicable
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

10. Stability and reactivity

Reactivity	This product may react with reducing agents. May be corrosive to metals. Reacts violently with alkaline material. This product may react with strong oxidising agents.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Hazardous polymerisation does not occur.
Conditions to avoid	Heat, flames and sparks. Do not mix with other chemicals.
Incompatible materials	Moisture. Strong oxidising agents. Reducing Agents. Metals. Caustics. Contact with metals may evolve flammable hydrogen gas. Dilute product by slowly adding to water.
Hazardous decomposition products	May include and are not limited to: Oxides of sulphur.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Fatal if inhaled.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns. May cause stomach distress, nausea or vomiting.

Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity Fatal if inhaled. May cause respiratory irritation.

Components	Species	Test results
Sulphuric acid (CAS 7664-93-9)		
Acute		
<i>Dermal</i>		
LD50	Not available	
<i>Inhalation</i>		
LC100	Guinea pig, Mouse, Rabbit, Rat	0.1 mg/L, 2.75 Hours, ECHA
LC50	Guinea pig	> 0.1 mg/L, 8 Hours, ECHA
		0.1 mg/L, 8 Hours, ECHA
		0 mg/L, 8 Hours, ECHA/HSDB
		0 mg/L, 8 Hours, ECHA/HSDB
	Guinea pig, Mouse, Rabbit, Rat	1.6 mg/L, 2.75 Hours, ECHA
	Mouse	0.9 mg/L, 1 Hours, ECHA
		0.6 mg/L, 1 Hours, ECHA
	Mouse, Rat	0.5 mg/L, 2 Hours, ECHA
		0.3 mg/L, 2 Hours, ECHA
	Rat	375 mg/m ³ , 1 Hours, ECHA
		347 mg/L, 1 Hours
	Various	1610 mg/m ³ , ECHA
		1470 mg/m ³ , ECHA
		420 ppm, ECHA
		347 ppm, ECHA
		109 mg/m ³ , ECHA
		50 mg/m ³ , ECHA
		30.3 mg/m ³ , ECHA
		18 mg/m ³ , ECHA
<i>Oral</i>		
LD50	Rat	2140 mg/kg, CCOHS

Skin corrosion/irritation Causes severe skin burns and eye damage.

Exposure minutes	Not available.
Erythema value	Not available.
Oedema value	Not available.

Serious eye damage/eye irritation Causes serious eye damage.

Corneal opacity value	Not available.
Iris lesion value	Not available.
Conjunctival reddening value	Not available.
Conjunctival oedema value	Not available.
Recover days	Not available.

Respiratory or skin sensitisation

Respiratory sensitisation Not a respiratory sensitizer.

Skin sensitisation Prolonged or repeated exposure can cause drying, defatting and dermatitis.

Germ cell mutagenicity Non-hazardous by WHMIS criteria.

Carcinogenicity May cause cancer.
There is sufficient evidence that occupational exposure to strong inorganic acid mists containing sulphuric acid is carcinogenic. See below.

ACGIH Carcinogens

Sulphuric acid (CAS 7664-93-9) A2 Suspected human carcinogen.

Canada - Alberta OELs: Carcinogen category

Sulphuric acid (CAS 7664-93-9) Suspected human carcinogen.

Canada - Manitoba OELs: carcinogenicity

SULFURIC ACID, WHEN CONTAINED IN STRONG INORGANIC ACID MISTS (CAS 7664-93-9) Suspected human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Sulphuric acid (CAS 7664-93-9) Volume 54, Volume 100F 1 Carcinogenic to humans.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects. Extensive lung damage has been seen in guinea pigs exposed to 4 mg/m³ of sulphuric acid. There is also lung damage caused in monkeys exposed to 4.79 mg/m³ for 78 weeks.

Repeated exposure may cause chronic bronchitis, pulmonary edema, and erosion or discolouration of teeth.

Further information Not available.

12. Ecological information

Ecotoxicity Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems. See below

Ecotoxicological data

Components

Sulphuric acid (CAS 7664-93-9)

Aquatic

Fish

Species	Test results
LC50 Western mosquitofish (<i>Gambusia affinis</i>)	42 mg/L, 96 hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Mobility in general Not available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

General Canada: TDG Proof of Classification: Classification Method: Classified as per Part 2, Sections 2.1 – 2.8 of the Transportation of Dangerous Goods Regulations. If applicable, the technical name and the classification of the product will appear below.

Transportation of Dangerous Goods (TDG - Canada)

Basic shipping requirements:

UN number UN1830
Proper shipping name SULPHURIC ACID with more than 51% acid
Hazard class 8
Packing group II

TDG



15. Regulatory information

Canadian federal regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Sulphuric acid (CAS 7664-93-9) Class B

WHMIS status Controlled

International regulations

Inventory status

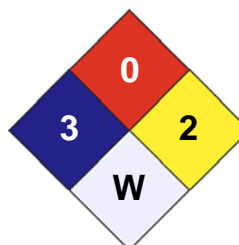
Country(s) or region	Inventory Name	On Inventory (Yes/No)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other information

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

HEALTH	* 3
FLAMMABILITY	0
PHYSICAL HAZARD	2
PERSONAL PROTECTION	X



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Version No. 02

Other information For an updated SDS, please contact the supplier/manufacturer listed on the first page of the document.

Disclaimer

Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document. The information in the sheet was written based on the best knowledge and experience currently available.

Prepared by

Dell Tech Laboratories Ltd. Phone: (519) 858-5021

1. Identification

Identificateur de produit	Acide Sulfurique 93%	
Autres moyens d'identification		
Synonymes	Acide sulfurique , Battery acid, Dihydrogen sulfate, Electrolyte acid, Hydrogen sulfate, Matting acid, Oil of vitrio, Spirit of sulfur	
Usage recommandé	Applications industrielles	
Restrictions d'utilisation	Aucun(e) connu(e).	
Renseignements sur le fabricant/importateur/fournisseur/distributeur		
Fabricant		
Nom de la société	PVS Benson	
Adresse	1012 Gore Road Freelton, ON L0R1K0 Canada	
Téléphone	1-800-265-0014	
Courriel	bensoncs@pvschemicals.com	
Numéro de téléphone d'urgence	24 hours/7 Jours :	1-313-921-1200
Fournisseur	Voir ci-dessus	

2. Identification des dangers

Dangers physiques	Matières corrosives pour les métaux	Catégorie 1
Dangers pour la santé	Toxicité aiguë, par inhalation	Catégorie 1
	Corrosion cutanée/irritation cutanée	Catégorie 1
	Lésions oculaires graves/irritation oculaire	Catégorie 1
	Cancérogénicité	Catégorie 1A
	Toxicité pour certains organes cibles - exposition unique	Irritation des voies respiratoires de catégorie 3
Dangers environnementaux	Non classé.	

Éléments d'étiquetage



Mention d'avertissement	Danger
Mention de danger	Peut être corrosif pour les métaux. Provoque de graves brûlures de la peau et de graves lésions des yeux. Mortel par inhalation. Peut irriter les voies respiratoires. Peut provoquer le cancer.
Conseil de prudence	
Prévention	Conserver uniquement dans l'emballage d'origine. Ne pas respirer les vapeurs. Se laver soigneusement après manipulation. Porter des gants, vêtements de protection, équipement de protection des yeux et du visage. Porter une protection respiratoire. Utiliser seulement en plein air ou dans un endroit bien ventilé. Se procurer les instructions avant utilisation. Ne pas manipuler avant d'avoir lu et compris toutes les précautions de sécurité.
Intervention	Absorber toute substance répandue pour éviter qu'elle attaque les matériaux environnants. EN CAS D'INGESTION: Rincer la bouche. Ne PAS faire vomir. EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux) : Enlever immédiatement tous les vêtements contaminés. Rincer la peau à l'eau. Laver les vêtements contaminés avant réutilisation. EN CAS D'INHALATION : Déplacer la personne à l'air frais et la maintenir dans une position confortable pour la respiration. Appeler immédiatement un CENTRE ANTIPOISON ou médecin. Un traitement particulier est urgent (consulter cette étiquette). EN CAS DE CONTACT AVEC LES YEUX: Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer. EN CAS d'exposition prouvée ou suspectée: Consulter un médecin.
Stockage	Stocker dans un récipient résistant à la corrosion avec doublure intérieure. Entreposer dans un endroit bien ventilé. Garder le contenant fermé hermétiquement. Garder sous clef.

Élimination	Éliminer le récipient conformément à la réglementation locale, régionale, nationale et internationale.
Autres dangers	Aucun(e) connu(e).
Renseignements supplémentaires	Aucune.

3. Composition/information sur les ingrédients

Mélanges

Dénomination chimique	Nom commun et synonymes	Numéro d'enregistrement CAS	%
Acide sulfurique		7664-93-9	93

Toutes les concentrations sont en pourcentage en poids, sauf si l'ingrédient est un gaz. Les concentrations des gaz sont en pourcentage en volume.

4. Premiers soins

Inhalation	EN CAS D'INHALATION : Déplacer la personne à l'air frais et la maintenir dans une position confortable pour la respiration. Appeler immédiatement un CENTRE ANTIPOISON ou un médecin. Un traitement particulier est urgent (consulter cette étiquette).
Peau	EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux) : Enlever immédiatement tous les vêtements contaminés. Rincer la peau à l'eau. Appeler immédiatement un CENTRE ANTIPOISON ou un médecin. Traitement particulier (consulter cette étiquette pour information).
Yeux	EN CAS DE CONTACT AVEC LES YEUX: Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer. Appeler immédiatement un CENTRE ANTIPOISON ou médecin.
Ingestion	EN CAS D'INGESTION: Rincer la bouche. Ne PAS faire vomir. Appeler immédiatement un CENTRE ANTIPOISON ou médecin.
Symptômes et effets les plus importants, qu'ils soient aigus ou retardés	Douleur brûlante et lésions corrosives graves de la peau. Provoque de graves lésions des yeux. Les symptômes peuvent inclure un picotement, un larmolement, une rougeur, un gonflement et une vision trouble. Peut causer une lésion permanente aux yeux, y compris la cécité. Peut irriter les voies respiratoires.
Mention de la nécessité d'une prise en charge médicale immédiate ou d'un traitement spécial, si nécessaire	Donner des soins généraux et traiter en fonction des symptômes. Les symptômes peuvent être différés.
Informations générales	Des soins médicaux immédiats sont requis. En cas de malaise, demander un avis médical (montrer l'étiquette du produit lorsque possible). S'assurer que le personnel médical est averti du (des) produit(s) en cause et qu'il prend des mesures pour se protéger. Montrer cette fiche technique de santé-sécurité au médecin en consultation. Porter des gants imperméables et des lunettes de protection à l'épreuve des éclaboussures de produits chimiques. Éviter le contact avec les yeux et la peau. Tenir hors de la portée des enfants.

5. Mesures à prendre en cas d'incendie

Moyens d'extinction appropriés	Poudre chimique. Mousse antialcool. Dioxyde de carbone.
Méthodes d'extinction inappropriées	Utiliser de l'eau avec précaution - le contact direct de l'eau dégagera de la chaleur et causera des éclaboussures.
Risques spécifiques provenant des produits chimiques	Les pompiers doivent porter un appareil de respiration autonome. Non inflammable mais réagit avec la plupart des métaux pour former un gaz d'hydrogène inflammable.
Produits dangereux résultant de la combustion	Ils peuvent comprendre et ne sont pas limités: Oxydes de soufre. Des fumées ou des gaz irritants et toxiques peuvent être dégagés durant un incendie.
Équipements de protection spéciaux et précautions spéciales pour les pompiers	Les pompiers doivent porter des vêtements protection complets ainsi qu'un appareil respiratoire autonome.
Équipement/directives de lutte contre les incendies	Éloigner les récipients du lieu de l'incendie si cela peut se faire sans risque.
Méthodes particulières d'intervention	Utiliser des procédures standard en cas d'incendie et tenir compte des dangers des autres substances en cause.

6. Mesures à prendre en cas de déversement accidentel

Précautions individuelles, équipements de protection et mesures d'urgence	Tenir à l'écart le personnel non requis. Ternir les gens à l'écart de l'endroit du déversement/de la fuite et en amont du vent. Porter un équipement et des vêtements de protection appropriés durant le nettoyage. Ne pas respirer les vapeurs ou les brouillards de pulvérisation. Ne pas toucher les récipients endommagés ou le produit déversé à moins de porter des vêtements de protection appropriés. S'assurer une ventilation adéquate. Prévenir les autorités locales si des fuites significatives ne peuvent pas être contenues. Pour la protection individuelle, voir la section 8 de la FDS.
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Méthodes et matériaux pour le confinement et le nettoyage

Arrêter la fuite si cela peut se faire sans risque. Ne doit pas être rejeté dans l'environnement. Empêcher l'entrée dans les cours d'eau, les égouts, les sous-sols ou les zones confinées.

Déversements importants : Endiguer le matériau déversé, lorsque cela est possible. Recouvrir d'une feuille de plastique pour empêcher la dispersion. Absorber toute substance répandue pour éviter qu'elle attaque les matériaux environnants. Utiliser un matériau non combustible comme la vermiculite, le sable ou la terre pour absorber le produit et le mettre dans un récipient pour élimination ultérieure. Après avoir récupéré le produit, rincer la zone à l'eau.

Déversements peu importants : Essuyer avec une matière absorbante (par ex., tissu, lainage). Nettoyer la surface à fond pour éliminer la contamination résiduelle. Ne jamais réintroduire le produit déversé dans son récipient d'origine en vue d'une réutilisation.

Ne jamais réintroduire le produit répandu dans son récipient d'origine en vue d'une réutilisation. Pour l'élimination des déchets, voir la section 13 de la FDS. Empêcher de pénétrer dans les voies d'eau, les égouts, les sous-sols, les espaces réduits

Précautions pour la protection de l'environnement

Empêcher d'autres fuites ou déversements lorsqu'il est possible de le faire en toute sécurité. Ne pas contaminer l'eau. Ne pas évacuer dans les lacs, les ruisseaux, les étangs et les eaux publiques.

7. Manutention et stockage

Précautions relatives à la sûreté en matière de manutention

DANGER -- CORROSIF

Se procurer les instructions avant utilisation. Ne pas manipuler avant d'avoir lu et compris toutes les précautions de sécurité. Ne pas respirer les vapeurs ou les brouillards de pulvérisation. Éviter tout contact avec les yeux, la peau ou les vêtements. Utiliser seulement en plein air ou dans un endroit bien ventilé. Éviter une exposition prolongée. Porter un équipement de protection individuelle approprié. Doit être manipulé dans des systèmes fermés, si possible. Se laver soigneusement après manipulation. Employer de bonnes pratiques d'hygiène du travail lors de la manipulation de ce matériau. Tenir le récipient bien fermé. Ne pas manger et ne pas boire pendant l'utilisation.

Conditions de sûreté en matière de stockage, y compris les incompatibilités

Garder sous clef. Stocker dans un endroit frais et sec, à l'écart de la lumière solaire directe. Stocker dans un récipient résistant à la corrosion avec doublure intérieure. Stocker dans un récipient fermé, à l'écart des matériaux incompatibles. Stocker dans un endroit bien ventilé. Stocker à l'écart des matériaux incompatibles (Consulter la section 10 de la FDS). Conserver à l'abri de la chaleur, des flammes nues ou autres sources d'inflammation. Conserver hors de la portée des enfants.

8. Contrôle de l'exposition/protection individuelle

Limites d'exposition

ÉTATS-UNIS. Valeurs limites d'exposition de l'ACGIH

Composants	Type	Valeur	Forme
Acide sulfurique (CAS 7664-93-9)	MPT	0.2 mg/m3	Fraction thoracique.

Canada. LEMT pour l'Alberta (Code de l'hygiène et de la sécurité au travail, Annexe 1, Tableau 2)

Composants	Type	Valeur
Acide sulfurique (CAS 7664-93-9)	LECT	3 mg/m3
	MPT	1 mg/m3

Canada. LEMT pour la Colombie-Britannique. (Valeurs limites d'exposition en milieu de travail pour les substances chimiques, Réglementation sur la santé et sécurité au travail 296/97, ainsi modifiée)

Composants	Type	Valeur	Forme
Acide sulfurique (CAS 7664-93-9)	MPT	0.2 mg/m3	Brouillard.

Canada. LEMT de Manitoba (Règlement 217/2006, Loi sur la sécurité et l'hygiène du travail)

Composants	Type	Valeur	Forme
Acide sulfurique (CAS 7664-93-9)	MPT	0.2 mg/m3	Fraction thoracique.

Canada. LEMT pour l'Ontario. (Contrôle de l'exposition à des agents biologiques et chimiques)

Composants	Type	Valeur	Forme
Acide sulfurique (CAS 7664-93-9)	MPT	0.2 mg/m3	Fraction thoracique.

Composants	Type	Valeur
Acide sulfurique (CAS 7664-93-9)	LECT	3 mg/m ³
	MPT	1 mg/m ³
Valeurs biologiques limites	Aucune limite d'exposition biologique observée pour les ingrédients.	
Directives au sujet de l'exposition	Voir ci-dessus	
Contrôles d'ingénierie appropriés	Il faut utiliser une bonne ventilation générale (habituellement dix changements d'air l'heure). Les débits de ventilation doivent être adaptés aux conditions. S'il y a lieu, utiliser des enceintes d'isolement, une ventilation locale ou d'autres mesures d'ingénierie pour maintenir les concentrations atmosphériques sous les limites d'exposition recommandées. Si des limites d'exposition n'ont pas été établies, maintenir les concentrations atmosphériques à un niveau acceptable. Il faut s'efforcer d'éviter tout contact avec la peau et les yeux, et de limiter l'exposition par inhalation.	
Mesures de protection individuelle, telles que les équipements de protection individuelle		
Protection du visage/des yeux	Porter des lunettes de sécurité à écrans latéraux (ou des lunettes à coques) et un écran facial. Une douche oculaire est recommandée.	
Protection de la peau		
Protection des mains	Gants imperméables. Confirmer d'abord avec un fournisseur connu.	
Autre	Porter des gants appropriés résistants aux produits chimiques Il est recommandé d'utiliser un tablier imperméable. Conformément aux directives de votre employeur.	
Protection respiratoire	Si les limites d'exposition risquent d'être dépassées, utiliser un appareil respiratoire approuvé de NIOSH. Le respirateur devrait être choisi près et employé sous la direction des exigences après de professionnel d'une salubrité qualifiée et de sûreté trouvées dans la norme du respirateur de l'OSHA (29 CFR 1910.134), CAN/CSA-Z94.4 et la norme de la norme ANSI pour la protection respiratoire (Z88.2).	
Dangers thermiques	Sans objet.	
Considérations d'hygiène générale	Toujours adopter de bonnes pratiques d'hygiène personnelle, comme se laver après avoir manipulé la substance et avant de manger, de boire ou de fumer. Laver régulièrement les vêtements de travail et l'équipement de protection pour éliminer les contaminants Ne pas manger et ne pas boire pendant l'utilisation.	

9. Propriétés physiques et chimiques

Aspect	Liquide
État physique	Liquide.
Forme	Liquide
Couleur	Incolore
Odeur	Inodore
Seuil de l'odeur	> 1 mg/m ³
pH	< 1
Point de fusion et point de congélation	Pas disponible.
Point initial d'ébullition et domaine d'ébullition	287 °C (548.6 °F)
Point d'éclair	Sans objet
Vitesse d'évaporation	Sans objet
Inflammabilité (solides et gaz)	Sans objet.
Limites supérieures et inférieures d'inflammabilité ou d'explosibilité	
Limites d'inflammabilité - inférieure (%)	Sans objet
Limites d'inflammabilité - supérieure (%)	Sans objet
Limite d'explosibilité - inférieure (%)	Pas disponible.
Limite d'explosibilité - supérieure (%)	Pas disponible.
Tension de vapeur	0.0018 mmHg

Densité de vapeur	3.4 (air=1,0)
Densité relative	1.834 - 1.836 g/cm3
Solubilité	
Solubilité (eau)	Miscible
Coefficient de partage n-octanol/eau	Pas disponible.
Température d'auto-inflammation	Sans objet
Température de décomposition	Pas disponible.
Viscosité	Pas disponible.
Autres informations	
Propriétés explosives	Non explosif.
Propriétés comburantes	Non oxydant.

10. Stabilité et réactivité

Réactivité	Ce produit peut réagir avec des agents réducteurs. Peut être corrosif pour les métaux. Réagit violemment avec des matières alcalines. Ce produit peut réagir avec des agents oxydants puissants.
Stabilité chimique	Stable dans les conditions recommandées d'entreposage.
Risque de réactions dangereuses	Une polymérisation dangereuse ne se produit pas.
Conditions à éviter	Chaleur, flammes et étincelles. Ne pas mélanger avec d'autres produits chimiques.
Matériaux incompatibles	Humidité. Agents comburants forts. Agents réducteurs. Métaux. Substances caustiques. Le contact avec les métaux peut produire un gaz d'hydrogène inflammable. Diluer le produit par ajoutant lentement à l'eau.
Produits de décomposition dangereux	Ils peuvent comprendre et ne sont pas limités: Oxydes de soufre.

11. Données toxicologiques

Renseignements sur les voies d'exposition probables

Inhalation	Mortel par inhalation.
Peau	Provoque de graves brûlures de la peau.
Yeux	Provoque de graves lésions des yeux.
Ingestion	Provoque des brûlures du tube digestif. Peut causer un malaise gastro-intestinal, des nausées ou des vomissements.

Les symptômes correspondant aux caractéristiques physiques, chimiques et toxicologiques Douleur brûlante et lésions corrosives graves de la peau. Provoque de graves lésions des yeux. Les symptômes peuvent inclure un picotement, un larmoiement, une rougeur, un gonflement et une vision trouble. Peut causer une lésion permanente aux yeux, y compris la cécité. Peut irriter les voies respiratoires.

Renseignements sur les effets toxicologiques

Toxicité aiguë Mortel par inhalation. Peut irriter les voies respiratoires.

Composants

Acide sulfurique (CAS 7664-93-9)

Aiguë

Cutané

DL50

Inhalation

CL100

CL50

Espèces

Pas disponible

Cobaye, souris, lapin, rat

cobaye

Cobaye, souris, lapin, rat

Divers(es)

Résultats d'épreuves

0.1 mg/L, 2.75 heures, ECHA

> 0.1 mg/L, 8 heures, ECHA

0.1 mg/L, 8 heures, ECHA

0 mg/L, 8 heures, ECHA/HSDB

0 mg/L, 8 heures, ECHA/HSDB

1.6 mg/L, 2.75 heures, ECHA

1610 mg/m3, ECHA

1470 mg/m3, ECHA

Composants	Espèces	Résultats d'épreuves
		420 ppm, ECHA
		347 ppm, ECHA
		109 mg/m3, ECHA
		50 mg/m3, ECHA
		30.3 mg/m3, ECHA
		18 mg/m3, ECHA
	Rat	375 mg/m3, 1 heures, ECHA
		347 mg/L, 1 heures
	souris	0.9 mg/L, 1 heures, ECHA
		0.6 mg/L, 1 heures, ECHA
	Souris, rat	0.5 mg/L, 2 heures, ECHA
		0.3 mg/L, 2 heures, ECHA
<i>Orale</i>		
DL50	Rat	2140 mg/kg, CCOHS
Corrosion cutanée/irritation cutanée	Provoque de graves brûlures de la peau et de graves lésions des yeux.	
Minutes d'exposition	Pas disponible.	
Indice d'érythème	Pas disponible.	
Valeur d'un œdème	Pas disponible.	
Lésions oculaires graves/irritation oculaire	Provoque de graves lésions des yeux.	
Valeur de l'opacité de la cornée	Pas disponible.	
Valeur de la lésion de l'iris	Pas disponible.	
Valeur des rougeurs de la conjonctive	Pas disponible.	
Valeur d'un œdème de la conjonctive	Pas disponible.	
Jours de récupération	Pas disponible.	
Sensibilisation respiratoire ou cutanée		
Sensibilisation respiratoire	Pas un sensibilisant respiratoire.	
Sensibilisation cutanée	L'exposition prolongée ou répétée peut causer l'assèchement, la délipidation et des dermatites.	
Mutagénicité sur les cellules germinales	Non dangereux d'après les critères du SIMDUT.	
Cancérogénicité	Peut provoquer le cancer. Il y a d'évidence suffisante que l'exposition professionnelle aux brumes acides inorganiques fortes contenant l'acide sulfurique est cancérogène. Voir ci-dessous.	
Carcinogènes selon l'ACGIH		
Acide sulfurique (CAS 7664-93-9)	A2 Probablement cancérogène pour l'homme.	
Canada - LEMT pour l'Alberta : Catégorie de carcinogène		
Acide sulfurique (CAS 7664-93-9)	Probablement cancérogène pour l'homme.	
Canada - LEMT pour le Manitoba : cancérogénicité		
ACIDE SULFURIQUE, LORSQUE CONTENU DANS DES BROUILLARDS D'ACIDES INORGANQUES FORTS (CAS 7664-93-9)	Probablement cancérogène pour l'homme.	
Monographies du CIRC. Évaluation globale de la cancérogénicité		
Acide sulfurique (CAS 7664-93-9)	Volume 54, Volume 100F 1 Cancérogène pour l'homme.	
Toxicité pour la reproduction	On ne s'attend pas à ce que ce produit présente des effets sur la reproduction ou le développement.	
Toxicité pour certains organes cibles - exposition unique	Peut irriter les voies respiratoires.	
Toxicité pour certains organes cibles - expositions répétées	Non classé.	
Danger par aspiration	Pas un danger par aspiration.	

Effets chroniques	Toute inhalation prolongée peut être nocive. Une exposition prolongée peut causer des effets chroniques. Dommages de poumon étendus vus chez les cobayes exposés à 4 mg/m3 de acide sulphurique. Dommages de poumon causés dans les singes exposés à 4.79 mg/m3 pendant 78 semaines. L'exposition répétée peut causer la bronchite chronique, l'oedème pulmonaire, et l'érosion ou la décoloration des dents.
Autres informations	Pas disponible.

12. Données écologiques

Écotoxicité	En raison du pH peu élevé de ce produit, on peut s'attendre à ce qu'il produise une importante écotoxicité s'il est exposé aux organismes et aux systèmes aquatiques. Voir ci-dessous		
Données écotoxicologiques			
Composants	Espèces	Résultats d'épreuves	
Acide sulfurique (CAS 7664-93-9)			
Aquatique			
Poisson	CL50	Gambusie (<i>Gambusia affinis</i>)	42 mg/L, 96 heures
Persistence et dégradation	Aucune donnée n'est disponible sur la dégradabilité du produit.		
Potentiel de bioaccumulation	Aucune donnée disponible.		
Mobilité dans le sol	Aucune donnée disponible.		
Mobilité générale	Pas disponible.		
Autres effets nocifs	On ne s'attend pas à ce que ce composant ait des effets néfastes sur l'environnement (par ex., appauvrissement de la couche d'ozone, potentiel de formation photochimique d'ozone, perturbation endocrinienne, potentiel de réchauffement de la planète).		

13. Données sur l'élimination

Instructions pour l'élimination	Recueillir et réutiliser ou éliminer dans des récipients scellés dans un site d'élimination des déchets autorisé. Ne pas laisser la substance s'infiltrer dans les égouts/les conduits d'alimentation en eau. Éliminer le contenu/récipient conformément à la réglementation locale/régionale/nationale/internationale.
Règlements locaux d'élimination	Détruire conformément à toutes les réglementations applicables.
Code des déchets dangereux	Les codes de déchets doivent être attribués dans le cadre d'une consultation entre l'utilisateur, le fabricant et l'entreprise de décharge.
Déchets des résidus / produits non utilisés	Éliminer conformément à la réglementation locale. Les récipients ou pochettes vides peuvent conserver certains résidus de produit. Éliminer ce produit et son récipient d'une manière sûre (voir : instructions d'élimination).
Emballages contaminés	Comme les récipients vides peuvent contenir un résidu du produit, suivre les avertissements de l'étiquette, même une fois le récipient vide. Les contenants vides doivent être acheminés vers une installation certifiée de traitement des déchets en vue de leur élimination ou recyclage.

14. Informations relatives au transport

Généralités	Canada: Preuve de classification: Méthode de Classification: Classée selon la partie 2, articles 2,1 à 2,8 du règlement sur le TMD. Le cas échéant, le nom de la technique et la classification du produit seront affichés ci-dessous.
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Transport des marchandises dangereuses (TMD - Canada)

Requêtes fondamentales pour le transport:

Numéro UN	UN1830
Appellation réglementaire adéquate	ACIDE SULFURIQUE contenant plus de 51% d'acide
Classe de danger	8
Groupe d'emballage	II

TMD



15. Informations sur la réglementation

Règlements fédéraux canadiens

Ce produit a été classé conformément aux critères de danger énoncés dans le Règlement sur les produits dangereux et la FDS contient tous les renseignements exigés par le Règlement sur les produits dangereux.

Liste des marchandises d'exportation contrôlée (LCPE 1999, Annexe 3)

Non inscrit.

Gaz à effet de serre

Non inscrit.

Règlements sur les précurseurs

Acide sulfurique (CAS 7664-93-9)

Classe B

Situation SIMDUT

Contrôlé

Règlements internationaux

Inventaires

Pays ou région

Nom de l'inventaire

En stock (Oui/Non)*

Canada

Liste intérieure des substances (LIS)

Oui

Canada

Liste extérieure des substances (LES)

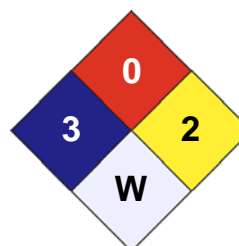
Non

*La réponse « Oui » indique que tous les composants du produit sont conformes aux exigences d'entreposage du pays ayant compétence

16. Autres informations

LÉGENDE	
Extrême	4
Grave	3
Modéré	2
Faible	1
Minimal	0

Santé	* 3
Inflammabilité	0
Danger physique	2
Protection individuelle	X



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02

Autres informations

Pour obtenir une FTSS actualisée, s'il vous plaît contacter le fournisseur/ le fabricant figurant à la première page de ce document.

Clause d'exonération de responsabilité

L'information ci-incluse a été obtenue de sources considérées techniquement précises et fiables. Bien qu'il ait été fait le maximum d'effort possible à fin d'assurer la totale portée à connaissance des risques associés à ce produit, dans les cas où il n'a pas été possible d'obtenir information cela a été déclaré expressément. Étant donné que les conditions particulières d'usage du produit sont au-delà du contrôle du fournisseur, il est présumé que les utilisateurs de ce matériel ont été correctement instruits des exigences de toute la législation applicable et de tout autre instrument de réglementation. Le fournisseur ne donne aucune garantie, ni expresse ni tacite, et ne sera tenu responsable d'aucune perte, dommages ou conséquence dommageable pouvant résulter de l'usage ou bien de la fiabilité de n'importe quelle information contenue dans ce document. Les renseignements contenus dans cette fiche ont été écrits selon les meilleures connaissances et la meilleure expérience actuellement disponibles.

Préparée par

Dell Tech Laboratories Ltd. Téléphone: (519) 858-5021



APPENDIX D

- AIR TOXICS ANALYSIS

