SAFETY DATA SHEET

Version: 1.2
Revision Date: 6/30/20

This material is to be used for research purposes only under the supervision of a technically qualified individual. The toxicological properties may have not been completely characterized. Please determine your responsibilities under your local regulations.

1. Identification of the substance or mixture and of the supplier

Identification

Product Name:	**Single Clean**
Additional identification	
Chemical name:	Mixture

Recommended use and restriction on use

Recommended use:	Not Determined
Restrictions on use:	Not Determined

Details of the supplier of the safety data sheet

Company Name:	Opti-Lube Inc
Address:	1646 W Business Park Drive, Suite B Orem, UT 84058 USA
Telephone:	801-491-3717

Emergency telephone number:

FOR TRANSPORT EMERGENCY CALL (+1) 801-850-8553, OR WITHIN THE USA 801-491-3717

2. Hazard(s) identification

Hazard Classification

Physical Hazards	
Flammable liquids	Category 4
Health Hazards	
Acute toxicity (Oral)	Category 4
Acute toxicity (Inhalaon—dust and mist)	Category 4
Acute toxicity (Dermal)	Category 4
Skin Corrosion/Irritation	Category 2
Serious eye damage/Eye irritation	Category 2A
Carcinogenicity	Category 2
Reproductive Toxicity:	Category 2
Organ Systemic Toxicity - Single Exposure	Category 3 - Narcotic effects
Specific Target Organ Toxicity (Single Exposure)	3-Respiratory irritation

Specific Target Organ Toxicity (Single Exposure)	Category 1 (Lungs, Eye)
Specific Target Organ Toxicity (Single Exposure)	Category 2
Organ Systemic Toxicity - Repeat Exposure	Category 1
	Category 2 (Hemopoietic system [blood forming], respiratory system)
Aspiration Hazard	Category 1
Aquatic Toxicity (Acute)	Category 1
Aquatic Toxicity (Chronic)	Category 2

Unknown toxicity	0.0 %
Acute toxicity, Oral	0.0 %
Acute toxicity, Dermal	0.0 %
Acute toxicity, Inhalaon, vapor	0.0 %
Acute toxicity, Inhalaon, dust or mist	0.0 %

Label Elements

Hazard Symbol:

Signal Word: Danger

Hazard Statement:

Combustible liquid.

H226:	Flammable liquid and vapour.
H302:	Toxic if swallowed.
H304:	May be fatal if swallowed and enters airways.
H312:	Harmful in contact with skin.
H315:	Causes skin irritation.
H319:	Causes serious eye irritation.
H332:	Harmful if inhaled.
H335:	May cause respiratory irritation.
H336:	May cause drowsiness or dizziness.
H350:	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
	Causes damage to organs (lungs, eyes). May cause damage to orgnas (central nervous system) through prolonged or repeated exposure.
H373:	May cause damage to organs through prolonged or repeated exposure. (hematoponic system [blood forming], respiratory system, and nose)
H401:	Toxic to aquatic life.

	H411:	Very toxic to aquatic life with long lasting effects.

Precautionary Statement:

Prevention:	P201:	Obtain special instructions before use.
	P202:	Do not handle until all safety precautions have been read and understood.
	P210:	Keep away from heat/sparks/open flames/hot surfaces – No smoking.
	P233:	Keep container tightly closed.
	P240:	Ground/bond container and receiving equipment.
	P241:	Use explosion-proof electrical/ventilating/light/ and other equipment.
	P242:	Use only non-sparking tools.
	P243:	Take precautionary measures against static discharge.
	P260:	Do not breathe dust / fume / gas / mist / vapors / spray. Specific treatment (see Section 4.1 of SDS).
	P261	Avoid breathing vapor**.**
	P264:	Wash thoroughly after handling.
	P270:	Do not eat, drink, or smoke when using this product.
	P271	Use only outdoors or in a well-ventilated area.
	P273:	Avoid release to the environtment.
	P280:	Wear nitril protective gloves and wear protective clothing including eye protection.face protection.
		Wear eye protection.
		When handling this substance: take actions to prevent static discharges; keep away from heat, sparks, open flames and/or hot surface.
Response:	P301 + 310:	IF SWALLOWED: Immediately call a POISON CENTER / doctor. Rinse mouth. Do not induce vomiting.
	P302 + 352:	IF ON SKIN: Wash with plenty of soap and water. Specific treatment (see Section 4 on the SDS). Call a POISON CENTER or physician if you feel unwell. Take off contaminated clothing and wash it before reuse.
	P303 + 361 + 353:	IF ON SKIN (or hair): Remove / take off immediately all contaminated clothing. Rinse skin with water / shower.
	P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
	P305 + 351 + 338:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. If eye irritation persists: get medical advice.
	P337 + 313:	If eye irritation persists: Get medical advice or attention.
	P362:	Take off contaminated clothing and wash before reuse.
	P370 + 378:	IN CASE OF FIRE: Use extinguishing media listed in Section 5 of SDS for extinction.
	P391:	Collect spillage.
Storage:	P405	Store locked up.
	P403	Store this substance in a well-ventilated place and keep container tightly closed. Keep cool.

Disposal: P501 Dispose of contents/container to in accordance with local/regional/national/international regulation.

3. Composition/Information on Ingredients

Chemical name	CAS number	Percent by Weight
2-Ethylhexyl Nitrate	27247-96-7	43%
Proprietary material	Proprietary	9.5-19%
Aromatic Hydrocarbons	Proprietary	5-17.5%
1,2,4-Trimethylbenzene	95-63-6	6-14%
Solvent Naphtha, Heavy Aromatic	64742-94-5	5-12.5%
m-Ethyltoluene	620-14-4	2-5%
2-Butoxyethanol	111-76-2	2-4%
1,3,5-Trimethylbenzene	108-67-8	1-3%
Solvent Naptha, Light Aromatic	64742-95-6	1-3%
Naphthalene	91-20-3	1-3%
Cymenes	25155-15-1	1-3%
1-ethyl-2-Methylbenzene	611-14-3	1-3%
n-Propylbenzene	103-65-1	1-3%
1,2,3-Trimethylbenzene	526-73-8	1-2%
p-Ethyltoluene	622-96-8	1-2%
Cumene	98-82-8	< 1 %
Xylene	1330-20-7	< 1 %
Copolymer of maleic and olefin	Trade Secret	< 1 %
2,6-Di-tert-butylphenol	128-39-2	< 1 %
Isooctanol mixture	68526-83-0	< 1 %

* Note that the chemical identity of some or all of the above components is considered confidential business information and is being withheld as permitted by 29 CFR 1910.1200 and various State Right-To-Know Laws.
*A subset of the components listed above has been tested as a mixture.

4. First-aid Measures

General Information: Warning before intervention. Before attempting to rescue casualties, isolate area from all potential sources of ignition including disconnecting electrical supply. Ensure adequate ventilation and check that a safe, breathable atmosphere is present before entry into confined spaces. Drench contaminated clothing with water before removing to avoid risk of sparks from static electricity. In all cases of doubt, or when symptoms persist, seek medical attention.

Ingestion: Ingestion (swallowing) of this material may result in an altered state of consciousness and loss of coordination. The person should be sent immediately to a hospital. Do not wait for symptoms to develop. 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, clean mouth with water, remove dentures if any, and then give small quantities of water to drink. Do not give milk or alcoholic beverages. Never give

anything by mouth to an unconscious person. Stop if the exposed person feels sick as vomiting may be dangerous. Do NOT induce vomiting, if vomiting occurs spontaneously, keep head below hips to prevent aspiration. Always assume that aspiration has occurred. and get medical attention immediately. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, beltor waistband.

Inhalation:

Remove to fresh air as quickly as possible and keep at rest in a position comfortable for breathing (keep the head below the level of the torso). Administer oxygen if necessary. Obtain medical attention if casualty has an altered state of consciousness or if symptoms do not resolve. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. Symptoms: inhalation of vapors may cause headache, nausea, vomiting and an altered state of consciousness. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If victim is unconscious, place in recovery position and get medical attention immediately. If not breathing, ensure that there is no obstruction to breathing (prostheses such as false teeth, which may block airway, should be removed where possible prior to initiating first air procedures) give artificial respiration preferably with a demand valve resuscitator, bag-valve mask device, or pock mask as trained. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If necessary, give external cardiac massage and obtain medical assistance immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Eye Contact:

Immediately flush with plenty of water, alternately lifting the upper and lower eyelids. If appropriate, after 5 minutes, remove contact lenses and continue flushing the eyes for an additional 15 minutes. Get medical attention if irritation persists.
Symptoms: slight irritation (unspecific). Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. If irritation, blurred vision or swelling occurs and persists, obtain medical advice from a specialist.

Skin Contact:

Wash affected area with soap and water. Remove contaminated clothing and footwear and wash clothing separately before reuse. Seek medical attention ifskin irritation, swelling or redness develops and persists.

Most Important Symptoms and Effects, Both Acute and Delayed:

Overview:

Inhalation may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result.
Ingestion of petroleum hydrocarbons can irritate the pharynx, esophagus, stomach and small intestine, and cause swellings and ulcers of the mucous. Symptoms include a burning mouth and throat; larger amounts can cause nausea and vomiting, narcosis, weakness, dizziness, slow and shallow breathing, abdominal swelling, unconsciousness and convulsions.
This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. This material can cause eye irritation and damage in some persons. There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment. Skin contact with the material is more likely to cause a sensitization reaction in some persons compared to the general population.

Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects. Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following. Constant or exposure over long periods to mixed hydrocarbons may produce stupor with dizziness, weakness and visual disturbance, weight loss and anemia, and reduced liver and kidney function. Skin exposure may result in drying and cracking and redness of the skin.

Note To Physician:

Possible cancer hazard. Contains an ingredient which may cause cancer based on animal data (See Section 3 and Section 15 for each ingredient). Risk of cancer depends on duration and level of exposure. Aspirated during vomiting may produce lung injury. Do not induce vomiting. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.
For petroleum distillates:
• Ingestion: gastric lavage with activated charcoal can be used promptly to prevent absorption - decontamination (induced emesis or lavage) is controversial and should be considered on the merits of each individual case; of course the usual precautions of an endotracheal tube should be considered prior to lavage, to prevent aspiration.
• Individuals intoxicated by petroleum distillates should be hospitalized immediately, with acute and continuing attention to neurologic and cardiopulmonary function.
• Positive pressure ventilation may be necessary.
• Acute central nervous system signs and symptoms may result from large ingestions of aspiration-induced hypoxia.
• After the initial episode, individuals should be followed for changes in blood variables and the delayed appearance of pulmonary edema and chemical pneumonitis. Such patients should be followed for several days or weeks for delayed effects, including bone marrow toxicity, hepatic and renal impairment Individuals with chronic pulmonary disease will be more seriously impaired, and recovery from inhalation exposure may be complicated.
• Gastrointestinal symptoms are usually minor and pathological changes of the liver and kidneys are reported to be uncommon in acute intoxications.
• Hydrocarbons may sensitize the heart to epinephrine and other circulating catecholamines so that arrhythmias may occur. Careful consideration of this potential adverse effect should precede administration of epinephrine or other cardiac stimulants and the selection of bronchodilators. Check section 2.2 (GHS Label Elements) for further details.
Inhalation: May be fatal if swallowed and enters airways.
Eyes: Causes serious eye irritation.
Skin: Causes skin irritation.
Ingestion: Toxic if swallowed.

5. Fire-fighting measures

Flash Point: 50℃ (122℉)

Explosive Limits: Not determined.

Autoignition Point: Not determined

Suitable Extinguishing Media:	AFFF Foam, BC powder, dry sand, dry chemical powder, BCF (where regulations permit), carbon dioxide, water spray or fog – large fires only. Adapt extinguishing media to the environment.
Specific hazards arising from the chemical:	Hazardous decomposition: Harmful vapors. Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire. Keep away from heat, sparks, open flames, and other ignition sources - No smoking. Keep container tightly closed. Ground, bond container and receiving equipment. Use explosion-proof electrical, ventilating, light, equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is toxic 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.
Fire Fighting Instructions:	As with all fires, wear positive pressure, self-contained breathing apparatus, (SCBA) with a full-face piece and protective clothing. Persons without respiratory protection should leave area. Wear SCBA during clean-up immediately after fire. No smoking. Avoid contamination with oxidizing agents, i.e. nitrates, oxidizing acids, chlorine bleaches, etc. as ignition may result. 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool, spray from a protected location. Do not use direct water jets on the burning product; they could cause splattering and spread the fire. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam. Prevent, by any means available, spillage from entering drains or water course. Avoid spraying water onto liquid pools. DO NOT approach containers suspected to be hot.
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.
Flammable Properties And Hazards:	Thermal decomposition products may include C, CO, CO2, H2O, organic vapors. May emit acrid smoke. Mists containing combustible materials may be explosive. Heating may cause expansion or decomposition leading to violent rupture of containers.
Hazardous thermal decomposition products:	Decomposition products may include the following materials: carbon dioxide, carbon mc

6. Accidental release measures

Protective Precautions, Protective Equipment and Emergency Procedures:	Wear appropriate personal protective equipment as specified in Section 8. Keep unnecessary and unprotected personnel from entering. Isolate hazard area. Keep personnel removed and upwind of spill. Ventilate area of leak or spill. Eliminate all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Exposure to heat: have neighborhood close doors and windows, and evacuate. Wash contaminated clothes. Do not touch or walk through spilled material.
Environmental Precautions: Steps To Be Taken In Case Material Is Released Or Spilled:	**Initial Containment:** Eliminate all sources of ignition - heat, sparks, flame, electricity, and impact. Contain spilled material with dikes or absorbents. Marine Pollutant. Do not allow material to enter soil, surface water, or sewer system. Water polluting material may be harmful to the environment if released in large quantities.

Large Spills Procedure: Stop the source of the leak, if it is safe to do so. Contain spilled material. Vacuum or sweep up material and place in a disposal container. Absorb residue with inert material (e.g. dry sand or earth,) then place in a chemical waste container. Do not flush to sewer. Use explosion-proof equipment during clean-up.
Small Spills Procedure: Absorb spills with inert material. Transfer to a chemical waste container and dispose of properly. Spills are extremely slippery and should be cleaned up immediately. Clean contaminated surfaces with an excess of water and soap solution.

Miscellaneous: Treat or dispose of in accordance with all federal, state, and local requirements. Report spills to local authorities and / or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

Methods and materials for containment and cleaning up: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. 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.

7. Handling and Storage

Precautions for Safe Handling:

Handling and Storage Measures: The conductivity of this material may make it a static accumulator. A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10 000 pS/m. Whether a liquid is nonconductive or semi-conductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid. Containers, even those that have been emptied, may contain explosive vapors. Electrostatic discharge may be generated during pumping - this may result in fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. DO NOT cut, drill, grind, weld or perform similar operations on or near containers. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<=1 m/sec until fill pipe submerged to twice its diameter, then <= 7 m/sec). Avoid splash filling. Prevent concentration in hollows and sumps. DO NOT use compressed air for filling discharging or handling operations. Take precautionary measures against static discharges. If delivered in plastic packing, highest permissible emptying temperature is 5 Kelvin below the flash point. Check section 2.2 (GHS Label Elements) for further details. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Avoid contact with incompatible materials. Protect containers against physical damage and check regularly for leaks. DO NOT enter confined spaces until atmosphere has been checked. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions. Wear protective clothing when risk of exposure occurs (see Section 8). Avoid contact with eyes. Avoid prolonged or repeated contact with skin. DO NOT allow clothing wet with material to stay in contact with skin. Work clothes should be laundered separately. Avoid release to the environment. Secure container after each use. Keep out of reach of children. Protect containers against physical damage.

Use in a well-ventilated area. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Always wash hands with soap and water after handling. When handling, DO NOT eat, drink or smoke. Avoid smoking, naked lights or ignition sources. Keep in the original container or an approved alternative made from a compatible material, kept securely sealed when not in use. Use good occupational work practice. Store and use away from heat, sparks, open flame or any other ignition source. Keep away from (Strong) acids and (Strong) bases. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container. Prevent heating above 100 °C due to severe risk of pressure rise and explosion (refer to section 10). Maximal recommended handling temperature : 60 °C. (refer to section 10).

Maximum Recommended Handling Temperature: 60 °C

Maximum Recommended Storgae Temperature: 40°C (refer to section 10)

8. Exposure Controls / Personal Protection

Control Parameters: Occupational Exposure Limits

CAS No.	Ingredient	Source/Value
91-20-3	Naphthalene	OSHA TWA 10 ppm (50 mg/m3) STEL 15 ppm, PEL TWA 50 mg/m3, PEL TWA 10 ppm, TWA 400 mg/m3, TWA 100 ppm, ACGIH TWA: 10 ppm STEL: 15 ppm, NIOSH TWA 10 ppm (50 mg/m3) ST 15 ppm (75 mg/m3)
95-63-6	1,2,4-trimethylbenzene	OSHA No Established Limit OSHA No Established Limit ACGIH No Established Limit TWA 123 mg/m3 TWA 25 ppm NIOSH TWA 25 ppm (125 mg/m3)
103-65-1	Benzene, propyl-	OSHA No Established Limit ACGIH No Established Limit NIOSH No Established Limit
108-67-8	1,3,5-trimethylbenzene	OSHA No Established Limit ACGIH No Established Limit TWA 123 mg/m3 TWA 23 ppm NIOSH TWA 25 ppm (125 mg/m3)

526-73-8	1,2,3-trimethylbenzene	OSHA No Established Limit ACGIH No Established Limit TWA 123 mg/m3 TWA 25 ppm NIOSH TWA 25 ppm (125 mg/m3)
611-14-3	Benzene, 1-ethyl-2-methyl-	OSHA No Established Limit ACGIH No Established Limit NIOSH No Established Limit
620-14-4	m-Methyleethyl Benzene	OSHA No Established Limit ACGIH No Established Limit NIOSH No Established Limit
622-96-8	p-Ethyltoluene	OSHA No Established Limit ACGIH No Established Limit NIOSH No Established Limit
25155-15-1	Cymene	OSHA No Established Limit ACGIH No Established Limit NIOSH No Established Limit
64742-94-5	Naphtha (petroleum), heavy aromatic	OSHA No Established Limit ACGIH No Established Limit NIOSH No Established Limit
Proprietary	Aromatic hydrocarbons (C9-C10)	OSHA No Established Limit ACGIH No Established Limit NIOSH No Established Limit
Proprietary	Proprietary material	OSHA No Established Limit ACGIH No Established Limit NIOSH No Established Limit
1330-20-7	Xylene	TWA 221 mg/m3 TWA 50 ppm (OEL (EU)) indicative STEL 442 mg/m3 STEL 100 ppm (OEL (EU)) indicati
64742-48-9	Naphtha (petroleum), hydrotreated Heavy	TWA 10 ppm PEL TWA 50 mg/m3 PEL TWA 10 ppm TWA 400 mg/m3 TWA 100 ppm
98-82-8	Cumene	TWA 245 mg/m3 TWA 50 ppm PEL TWA 50 ppm
111-76-2	2-Butoxyethanol	ACGIH TWA 20 ppm OSHA TWA 50 ppm NOISH IDLH 700 ppm

Exposure controls:

Respiratory:	In poorly ventilated areas, emergency situations or if exposure levels are exceeded, use NIOSH approved full face respirator. Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)
Eyes:	Wear safety glasses with side shields to protect the eyes (or goggles), unless the assessment indicates a higher degree of protection. An eye wash station is suggested. Avoid exposure to liquid splashes, mists, gases or dusts.
Skin:	Can be absorbed through the skin (CAS# 91-20-3)Wear long sleeves to prevent repeated or prolonged skin contact. Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products. When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material. Wash hands thoroughly after handling. 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. 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.
Engineering Controls:	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors or particles below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Other Work Practices:	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. 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.

Check section 2.2 (GHS Label Elements) for further details.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

Physical state:	Liquid. [Slightly viscous.] (20 °C).
Colour:	Clear to slightly amber
Odour:	Pungent. Fatty. Fruity. Ester, Aromatic Hydrocarbon, mild-aromatic petroleum smell.
Odour threshold:	No data available
pH:	< 7
Relative evaporation rate (butylacetate=1):	No data available
Melting Point:	<-50°C (<-58°F)
Boiling Point:	> 250 °C
Autoignition Point:	215°C (419°F)
Flash Point:	122 oF (50°C)

Explosive Limits:	Not determined
Upper / Lower Flammability or Explosive Limits:	Lower: 0.25%
Specific Gravity (Water = 1):	0.897 at 60 ℉
Vapor Pressure (vs. Air or mm Hg):	0.027 kPa (0.20252 mm Hg) (20 °C).
Vapor Density (vs. Air = 1):	Not determined
Relative Density:	Not determined
Evaporation Rate:	Not determined
Solubility:	Easily soluble in the following materials: Methanol. Hydrocarbons. Chlorinated solvent Very slightly soluble in the following materials: cold water and hot water.
Log Pow:	> 5 (est.)
Solubility in Water:	Water: < 0,005 g/100ml (25 °C)
Percent Volatile:	Not determined
Partition coefficient n-octanol / water (Log Kow):	5.24
Decomposition Temperature:	130°C (266°F)
Viscosity:	Not determined
Explosive Properties:	Risk of explosion if heated under confinement.
Oxidising properties:	No data available

Other:

VOC content:	< 0,1 % (2010/75/EU)
Flow time (ISO 2431)	Not available.
Molecular weight	175.23 g/mole

10. Stability and reactivity

Reactivity:	Corrosion to metals: No corrosive effect on metal.
Chemical Stability:	Product is considered stable but is unstable in the presence of incompatible materials. Chemically stable under normal storage (60°C in handling and 40°C in storage) (refer to section 7).
Possibility of hazardous reactions:	Hazardous reactions are possible in the presence of incompatible materials and conditions.
Incompatibility - Materials To Avoid:	Strong oxidizing agents, strong acids, strong bases. Sources of ignition. Direct sunlight. Heat sources. Combustible materials.
Hazardous Decomposition Or Byproducts:	Thermal decomposition products may include C, CO, CO2, H2O, organic vapors. Harmful vapors. Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.
Hazardous Polymerization:	Will not occur.

Conditions To Avoid:	Avoid all sources of ignition: heat, sparks, open flame. Avoid electro-static discharge. Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas. Vapors may be explosive.

11. Toxicological Information

Information on likely routes of exposure:

Inhalation:	Harmful if inhaled.
Ingestion:	Harmful if swallowed.
Skin contact:	Harmful if contact with skin.
Eye contact:	Causes serious eye irritaon.
Solvent naptha	LD50 rat (Oral): >2,000 mg/kg LD50 rat (Dermal): > 2,000 mg/kg LC50 rat(Inhalation): >5 mg/l/4h inhalation form: Aerosol (mist)
1,2,4-Trimethylbenzene	LD50 rat (oral): 5000 mg/kg LD50 rat (oral): 3400 mg/kg LD50 rabbit (dermal): >3160 mg/kg LC50 rat (inhalation): 18 mg/l/4h
1,3,5-Trimethylbenzene	LD50 rat(oral): 5000 mg/kg LD50 rabbit (dermal): >3160 mg/kg LC50 rat (inhalation): 10.2 mg/l/4h LC50 rat (inhalation): 24.00 mg/l/4hr
n-Propylbenzene	LD50 rat (oral): 6040 (6040-7500) mg/kg LD50 rat (dermal): 10600 mg/kg Based on Isopropyl benzene LC50 rat (inhalation): 422 g/m3 (Exposure time: 2h)
Xylenes (o-, m-, p- isomers)	LD50 rat (oral): 4300 mg/kg LD50 rabbit (dermal): >4200 mg/kg LC50 rat (inhalation): 21.7 mg/l/4h
Cumene	LD50 rat (oral): 1400 mg/kg LD50 rat (dermal): 10600 mg/kg LC50 rat (inhalation): 39 mg/l/4h
2-Butoxyethanol	LD50 guinea pig (oral): 1414 mg/kg Based on ethyl tertiary butyl ether LD50 guinea pig (dermal): >2000 mg/kg LC0 guinea pig (inhalation): >3.1 mg/lg (Exposure time: 1 hour)
Isooctanol mixture	LD50 rabbit (dermal): >2520 mg/kg LD50 rat (oral): >1480 mg/kg
Naphtha (petroleum), heavy aromatic	LD50 rat (oral): >5000 mg/kg LD50 rabbit (dermal): >2000 mg/kg
Aromatic hydrocarbons	LD50 rat (oral): 6800 mg/kg LD50 rabbit (dermal): 3400 mg/kg
p-Ethyltoluene	LD50 rat (oral): 4.85 mg/kg

Benzene, propyl-	LD50 rat (oral): 6040 mg/kg
Naphthalene	LD50 rat (oral): 490.0 mg/kg LD50 rabbit (dermal): 20000 mg/kg

Target Organ Systemic Toxicant:

Single Exposure:	Routes of exposure: Dermal contact. Eye contact. Inhalation. Ingestion. Target Organs: Central nervous system Symptoms: May cause drowsiness or dizziness. High concentrations may cause central nervous system depression. Causes damage to organs (lungs). May cause damage to organs (central nervous system, brain).
Repeated Exposure:	Solvent naptha, Causes damage to organs (nervous system) through prolonged or repeated exposure. May cause damage to organs, (hematopoietic system [blood forming], respiratory system) through prolonged or repeated exposure.
Aspiration Hazard:	May be fatal if swallowed and enters airways.
Carcinogenicity:	Suspected of causing cancer.

Naphthalene (91-20-3)	OSHA Regulated Carcinogen: No (NTP) known: No; Suspected: Yes. IARC Group 1: No; Group 2a: No; Group 2b: Yes; Group 3: No; Group 4: No. ACGIH: A3
1,2,4-trimethyl benzene (95-63-6)	OSHA Regulated Carcinogen: No NTP Known: No; Suspected: No IARC Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No; ACGIH No established limit
Benzene, propyl- (103-65-1)	OSHA Regulated Carcinogen: No NTP Known: No; Suspected: No IARC Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No; ACGIH No established limit
1,3,5-trimethylbenzene (108-67-8)	OSHA Regulated Carcinogen: No NTP Known: No; Suspected: No IARC Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No; ACGIH No established limit
1,2,3-trimethylbenzene (526-73-8)	OSHA Regulated Carcinogen: No NTP Known: No; Suspected: No IARC Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No; ACGIH No established limit
Benzene, 1-ethyl-2-methyl- (611-14-3)	OSHA Regulated Carcinogen: No NTP Known: No; Suspected: No IARC Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No; ACGIH No established limit

m-Methyleethyl Benzene (620-14-4)	OSHA Regulated Carcinogen: No NTP Known: No; Suspected: No IARC Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No; ACGIH No established limit
p-Ethyltoluene (622-96-8)	OSHA Regulated Carcinogen: No NTP Known: No; Suspected: No IARC Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No; ACGIH No established limit
Cymene (25155-15-1)	OSHA Regulated Carcinogen: No NTP Known: No; Suspected: No IARC Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No; ACGIH No established limit
Naphtha (petroleum), heavy aromatic (64742-94-5)	OSHA Regulated Carcinogen: No NTP Known: No; Suspected: No IARC Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No; ACGIH No established limit
Cumene (98-82-8)	OSHA Regulated Carcinogen: No NTP: Reasonably Anticipated to be a Human Carcinogen IARC: 2B- Possibly carcinogenic to humans ACGIH: No established limit
Xylenes (o-m-, p- isomers) (1330-20-7)	OSHA Regulated Carcinogen: No NTP Known: No; Suspected: No IARC Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No; ACGIH No established limit
Aromatic hydrocarbons	OSHA Regulated Carcinogen: No NTP Known: No; Suspected: No IARC Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No; ACGIH No established limit
Proprietary material	OSHA Regulated Carcinogen: No NTP Known: No; Suspected: No IARC Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No; ACGIH No established limit

Germ Cell Mutagenicity: No data available

Repeated dose toxicity *Information on Solvent Naphtha* - Assessment of chronic effects: Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

Information on Ethylene Glycol Monobutyl Ether - Long-term exposure via inhalation at concentrations up to 125 ppm caused an increase in the incidence of liver tumors in male mice and forestomach tumors in female mice. A slight increase in adrenal tumors was observed in female rats. The NTP has determined that EGBE displays some evidence of carcinogenicity in mice, and equivocal evidence of carcinogenicity in female rats.

Other information: The product has not been tested. The statements have been derived from the properties of the individual components.

12. Ecological Information

Ecotoxicity:

Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment. The product hasn't been tested. The statement derived from the properties of the individual components.

Fish

Product:	LC 50 (Zebra Fish, 4d): 2mg/l NOEC (Zebra Fish, 4 d): 1.52 mg/l
2-Ethylhexyl nitrate	LC 50 (Zebra Fish, 4d): 2mg/l NOEC (Zebra Fish, 4 d): 1.52 mg/l
Petroleum naphtha	LC 50 (Rainbow Trout, 4 d): >1 000 mg/l
2-Ethylhexanol	LC 50 (Fathead Minnow, 4 d): 28,2 mg/l LC50 (Golden Orfe, 4 d): 17, 1 mg/l NOEC (Golden Orfe, 4 d): 14 mg/l

Aquac Invertebrates

Product:	EC50 (Water flea (Daphnia magna), 2d): > 12.6 mg/l
2-Ethylhexyl nitrate	EC50 (Water flea (Daphnia magna), 2d): > 12.6 mg/l
Petroleum naphtha	EC 50 (Water flea (Daphnia magna), 2 d): >1 000 mg/l
2-Ethylhecanol	EC 50 (Water flea (Daphnia magna), 2 d): 39 mg/l

Toxicity to Aquactic Plants

Product:	EC50 (Alga, 3 d): 3.222 mg/l
2-Ethylhexyl nitrate	EC50 (Alga, 3 d): 3.22 mg/l
Petroleum naphtha	LC 50 (Green algae (Selenastrum capricornutum), 3 d): >1 000 mg/l EC 50 (Green algae (Selenastrum capricornutum), 3 d): >1 000 mg/l
2-Ethylhecanol	EC 50 (Green algae (Selenastrum capricornutum), 3 d): 16.6 mg/l

Toxicity to soil dwelling organisms	No data available
Sediment Toxicity	No data available
Toxicity to Terrestrial Plants	No data available
Toxicity to above-ground organisms	No data available

Toxicity to microorganisms

Product:	EC50 (Sludge, 0.3 d): > 1,000 mg/l

2-Ethylhexyl nitrate	EC50 (Sludge, 0.3 d): > 1,000 mg/l
2-Ethylhexanol	EC 50 (Pseudomonas puda, 0.1 d): 540 mg/l EC 50 (Sludge, 0.5 d): > 100mg/l

Persistence and Degradability

Biodegradaon

Product:	Miscellaneous, 0%, 28 d, Not really degradable.
2-Ethylhexyl nitrate	Miscellaneous, 0%, 28 d, Not really degradable.
Petroleum naphtha	OECD TG 301 F, 80%, 28 d, Readily biodegradable
2-Ethylhexanol	OECD TG 302 B, 95%, 5 d, Readily biodegradable OECD TG 301 C, 100%, 14 d, Readily biodegradable

Bioaccumulave Potenal

Bioconcentraon Factor (BCF)

2-Ethylhexanol	Bioconcentraon Factor (BCF): 25,35 (Calculated)

Paral Coefficient n-octanol / water (log Kow)

Product:	Log Kow: 5.24 (Measured)
2-Ethylhexyl nitrate	Log Kow: 5.24 (Measured)
2-Ethylhexanol	Log Kow: 2,9 (Measured)

Mobility

Product:	soil - 3.75
2-Ethylhexyl nitrate	soil - 3.75
2-Ethylhexanol	soil - 1.42

Other Adverse Effects: No data available.

13. Disposal considerations

Disposal Methods:

Under the CERCLA / RCRA regulations currently in effect, this material is regulated as a hazardous waste or material. Therefore, it must be disposed of in a “permitted” hazardous waste facility in compliance with EPA and/or other applicable local, state and federal regulations. Containers may still present a chemical hazard/ danger when empty. Return to supplier for reuse/ recycling if possible.
Otherwise:
• If container cannot be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorized landfill
• Where possible retain label warnings and SDS and observe all notices pertaining to the product

• DO NOT allow wash water from cleaning or process equipment to enter drains
• It may be necessary to collect all wash water for treatment before disposal
• In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first
• Where in doubt contact the responsible authority
• Recycle wherever possible or consult manufacturer for recycling options
• Consult State Land Waste Authority for disposal
• Bury or incinerate residue at an approved site
• Recycle containers if possible, or dispose of in an authorized landfill

Contaminated Packaging: Container packaging may exhibit hazards.

14. Transport Information

DOT

UN Number: NA 1993

Packing Group: III

UN Proper Shipping Name: Combustible liquid, n.o.s. (Contains Solvent Naptha, 1,3,5-trimethylbenzene, 2 - Ethylhexyl nitrate) FLAMMABLE LIQUIDS, N.O.S. (contains Solvent Naptha, 1,2,4-

Land Transport ADR/RID and GGVS/GGVE (Cross Border / Domestic)

Transport Hazard Class(es): 3*

Secondary Hazard Class: Marine Pollutant (1,3,5-Trimethylbenzene, naphthalene)

Maritime Transport IMDG/GGVSea

UN Number: UN 1993

Packing Group: III

UN Proper Shipping Name: Flammable, n.o.s. (Contains Naphtha [petroleum], heavy aromatic, 1,3,4-trimethylbenzene, 1,3,5-Trimethylbenzene, Naphthalene, 2- Ethylhexyl nitrate)

Transport Hazard Class(es): 3

Marine Pollutant: Yes** (2- Ethylhexyl nitrate, 1,3,5-trimethylbenzene)

IATA-DGR and Air Transport ICAO-TI

UN Number: UN3082

Packing Group: III

UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.,FLAMMABLE LIQUIDS, N.O.S. (contains SOLVENT NAPTHA, 1,2,4-TRIMETHYLBENZENE,1,3,5-trimethylbenzene)

Transport Hazard Class(es): 3

Substance	RQ	Weight to Require RQ on BOL
Cumene	5,000 lbs.	500,000 lbs. of product
Naphthalene	100 lbs.	>11,000 lbs. of product
Xylenes	100 lbs.	>10,000 lbs. of product

Additional information

DOT Classification:	Non-bulk packages (less than or equal to 119 gal) of combustible liquids, that are marine pollutants, are not regulated as hazardous materials, unless transported by vessel.This product is not regulated as a marine pollutant when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes, provided the packagings meet the general provisions of §§ 173.24 and 173.24a.
TDG Classification	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark). Non-bulk packages of this product are not regulated as dangerous goods when transported by road or rail.
IMDG	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1. 4 to 4.1.1.8.
IATA	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.
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.

* This material is not regulated for US DOT transportation in quantities less than 119 gallons per 49 CFR 173:120 (b)(1). Does not apply to transportation by vessel, aircraft or package shipping services.

** This material is a marine pollutant when shipped in quantities greater than 119 gallons.

Shipping descriptions may vary based on mode of transport, quantities, temperature of the material, package size, and/or origin and destination. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transport of the material. Review classification requirements before shipping materials at elevated temperatures.

15. Regulatory Information

EPCRA 311/312 Categories:

1. Immediate (Acute) Health Effects: YES
2. Delayed (Chronic) Health Effects: YES
3. Fire Hazard: YES
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

US Federal Regulaons

New Jersey Right to Know list:

2-Ethylhexyl Nitrate, CAS # 27247-96-7
2-Butoxyethanol (111-76-2)
Naphthalene (91-20-3)
Solvent naphtha (64742-94-5)111

Minnisota Right to Know List:

2-Butoxyethanol (111-76-2)

Pennsylvania Right to Know List:

2-Ethylhexyl Nitrate, (27247-96-7)
Naphthalene (91-20-3)
2-Butoxyethanol (111-76-2)
Solvent naphtha (64742-94-5)

Rhode Island Right to Know List: 2-Butoxyethanol (111-76-2)

TSCA Secon 12(b) Export Noficaon (40 CFR 707, Subpt. D)

None present or none present in regulated quanes.

Superfund Amendments and Reauthorizaon Act of 1986 (SARA)

SARA 302 Extremely Hazardous Substance

SARA 304 Emergency Release Noficaon

SARA 311/312 Hazardous Chemical

SARA 313 (TRI Reporng) This product may contain chemical(s) regulated under the superfund Amendments and Reauthorization Act (SARA). For additional information please contact Opti-Lube Customer Assistance: sales@op-lube.com.

SARA Title III - Section 313 Fire hazard, acute health hazard, chronic health hazard

US State Regulations

US. California Proposistion 65 WARNING: This product can expose you to chemicals including cumene and naphthalene, which is known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov.

CERCLA and Section 313

Chemical	CERCLA RQ	Section 313
Cumene	5,000 lbs.	313
Naphthalene	100 lbs.	313
Xylenes	100 lbs.	313
1,2,4-trimethyl benzene		313

Inventory Status:

Australia (AICS) All components are in compliance with chemical noficaon requirements in Australia.

Canada (DSL/NDSL) All components are in compliance with the Canadian Environmental Protecon Act and are present on the Domestic Substance List.

China (IECSC) All components of this product are listed on the Inventory of Exisng Chemical Substances in China.

European Union (REACH) To obtain informaon on the REACH compliance status of this product, please email us at sales@op-lube.com

Japan (ENCS) All components are in compliance with the Chemical Substances Control Law of Japan

Korea (ECL) All components are in compliance in Korea

New Zealand (NZIoC) All components are in compliance with chemical noficaon requirements in New Zealand.

Philippines (PICCS)	All components are in compliance with the Philippines Toxic Substance and Hazardous and Nuclear Wastes Control Act of 1990 (R.A. 6969).
Switzerland (SWISS)	All components are in compliance with the Environmentally Hazardous Substances Ordinance in Switzerland.
Taiwan (TCSCA)	All components of this product are listed on the Taiwan Inventory.
United States (TSCA)	All components of this material are on the US TSCA Inventory.

The information on that was used to confirm the compliance status of this product may deviate from the chemical information shown in Section 3.

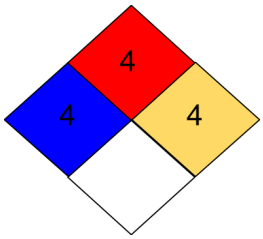
16. Other information, including date of preparation or last revision

HMIS Hazard ID

Health	4
Flammability	4
Physical Hazards	4

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating Not Possible;

NFPA Hazard ID



Flammability
Health
Physical Hazards
Reactivity

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating Not Possible;

Issue Date:	6/30/20
Version #:	1.2
Source of Information:	Internal Company data and other publically available resources.
Further Information:	Contact Supplier (see Section 1)
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