

I - Identification of substance / preparation and company

Name of the substance or preparation	HyflowSAFE HFDU
Grade(s)	ISO 46, ISO 68
CAS Number	Mixture
Product use	Fire-resistant hydraulic fluids
Name/Company address	U & P Private Limited
Address	No. 2 Banyan Place Jurong Island Singapore 627700
Telephone	(65) 6789 9898
Fax	(65) 6861 2629

II - Identification of hazards

Classification: Not classified as hazardous according to Singapore Standard SS 586: 2014.	
Label Symbol	No label
Signal word	No signal word
Hazard Statement(s)	No known significant effects or critical hazards
Precautionary Statement(s)	<u>General:</u> P101: If medical advice is needed, have product container or label on hand. P102: Keep out of reach of children. P103: Read label before use. <u>Disposal:</u> P501: Dispose of contents and container in accordance with local regulations.

III - Composition / Component Data

Substance/mixture: Mixture
CAS number : Not applicable.

Components	CAS number	Approx. % wt
2- ethyl- 2- [[[1-(1-oxooleyl)oxy]methyl]- 1,3-propanediyl dioleate	57675-44-2	>95
Proprietary additives	Mixture	<5

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

IV - First Aid

In the event of serious problems :	Call a doctor or summon medical assistance urgently.
Information in the event of :	
- inhalation :	Take the person into the fresh air.
- contact with the skin	Rinse off with water and remove contaminated clothing.
- contact with the eyes:	As a precaution, remove contact lenses, if worn. Bathe the eyes with sterile water

- ingestion :	Do not induce vomiting. If person is conscious, give water or milk. Never give anything by mouth to an unconscious person. Take the victim to hospital as soon as possible.
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V - Fire-fighting procedures

Methods of extinguishing	CO ₂ , foam or dry chemical. Use fire extinguishing methods suitable to surrounding conditions.
Flash point	> 180°C
Fire fighting instructions	See Section 7 for proper handling and storage.
Special methods of action	None.
Combustion or decomposition products	Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.
Protection for fire-fighters	Wear full protective clothing and positive pressure breathing apparatus.

VI - Measures to be taken in the event of accidental dispersion

Individual precautions :	Depending on the risk of exposure, wear gloves, goggles, and protective clothing.
Environmental protection precautions:	Design the installations and take all the measures necessary to avoid water and soil pollution : Containment, absorbent materials, etc.
Methods of cleaning :	Remove all sources of fire
Recovery :	Dam and then recover with the aid of physical resources.
Disposal :	Send contaminated materials to an approved collection facility.

VII - Handling and storage

General handling information	Avoid contaminating soil or releasing this material into sewage, drainage systems and bodies of water. Do not get into eyes, on skin, or on clothing. Keep out of the reach of children. Wash thoroughly after handling.
Prevention of worker exposure	Ensure adequate ventilation is provided if there is any risk of vapours, mists, or aerosols forming
Storage	Keep well away from sources of heat. Avoid the accumulation of static electricity. Provide earthing. Use only receptacles, joints, pipes etc. which are resistant to hydrocarbons. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum

	truck operations) and use appropriate mitigating procedures.
Storage conditions	Periods of exposure to high temperatures should be minimized. Water contamination should be avoided.
Container warning	Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapour) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

VIII - Exposure controls / personal protection

General considerations	Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.		
Technical measures	Use the product in a well-ventilated atmosphere with anti-deflagrating materials		
Monitoring parameters :			
Occupational Exposure limit (Oil Mist)	Country/ Agency	TWA	Ceiling/ Notation
	ACGIH	5 mg/m ³	10 mg/m ³ (STEL)
	Singapore	5 mg/m ³	10 mg/m ³ (STEL)
	Note: Limits/standards shown for guidance only. Follow applicable regulations.		
Respiratory protection	Wear appropriate breathing equipment if exposure levels exceed the limit values.		
Protection for the hands	Use impermeable hydrocarbon-resistant gloves. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.		
Protection for the eyes	Wear goggles in the event of the risk of emissions.		
Hygiene measures	Avoid prolonged and repeated contact with skin.		

IX - Physical and chemical properties

Physical state at 20°C	Liquid
Colour	Light amber
Odour	Mild odour
pH	Not applicable
Flash point (Cleveland Open Cup)	>300°C
Auto ignition temperature	No data available
Boiling point	>320°C
Vapour pressure	<0.01 mmhg @ 37.8°C (100°F)
Vapour density (Air = 1)	>1
Density at 15 °C	0.920 kg/l
Solubility	Soluble in hydrocarbon and most solvents; Insoluble in water
Freezing point	<-40°C
Viscosity at 40°C	40 - 75 cSt

X - Stability and reactivity

Stability	Stable product at conventional temperatures for storage, handling, and use.
Dangerous reactions	-
Substances to be avoided	Avoid powerful acids and oxidising agents

XI - Toxicological data

Contact with the eyes	Not expected to cause prolonged or significant irritation or injury during normal industrial use based on toxicological tests on this product.
Contact with the skin	Not expected to cause irritation or injury during normal industrial use based on toxicological tests on this product. Prolonged or repeated skin contact may cause skin irritation including redness, burning, drying, cracking, dermatitis, oil acne and folliculitis.
- Acute dermal toxicity	The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.
- Skin irritation	The skin irritation hazard is based on evaluation of data for similar materials or product components.
- Skin sensitization	The skin sensitization hazard is based on evaluation of data for similar materials or product components.
Ingestion	Not expected to be harmful if swallowed. May cause irritation of the gastrointestinal system. Symptoms may include nausea.
- Acute oral toxicity	The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.
Inhalation	Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil

	mist at airborne levels above the recommended oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.
- Acute inhalation toxicity	The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.
Acute toxicity estimate	Non-toxic if swallowed (LD50 oral, rat >5000 mg/kg)
Additional toxicological information	Waste oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

XII - Ecological data

Ecotoxicity	This material is not expected to be harmful to aquatic organisms. The product has not been tested. The statement has been derived from the properties of the individual components. According to literature: no environmental hazard - No data available on ecotoxicity
Mobility	No data available
Persistence and degradability	Biodegradability in soil: no specific data available for this material
Potential to bioaccumulate	Bioconcentration factor: no data available Octanol/water partition coefficient: no data available

XIII – Disposal considerations

Surplus or wastes	Do not discharge into the sewerage system or natural environment. This product can be disposed of in a suitable incinerator provided that national/local legislation is complied with.
Methods relating to elimination	Recovery by a Specialist Waste Contractor, with recycling or incineration in an approved facility.

XIV - Data relating to transport

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.	
DOT Classifications:	Lubricating Oil. Not regulated as Hazardous material for transportation under 49 CFR.
IMO/IMDG shipping description	Lubricating Oil. Not regulated as Dangerous goods for transportation under IMDG code
ICAO/IATA shipping description	Lubricating Oil. Not regulated as Dangerous goods for transportation under ICAO TI or IATA DGR
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable

Other information	Not dangerous cargo.
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XV - Regulatory data

TSCA Inventory	This product and/or its components are listed on the Toxic Substances Control Act (TSCA) inventory.
SARA 302/304 Emergency Planning and Notification	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355. No component was identified.
SARA 311/312 Hazard Identification	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under the following hazard categories: No SARA 311/312 hazard categories identified.
SARA 313 Toxic Chemical Notification and Release Reporting	This product contains the following components in concentrations above <i>de minimis</i> levels that are listed as toxic chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 of SARA: No component was identified.
CERCLA	The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center concerning release of quantities of "hazardous substances" equal to or greater than the reportable quantities (RQ's) listed in 40 CFR 302.4. As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically designated in 40 CFR 302.4. Chemical substances present in this product or refinery stream that may be subject to this statute are: No component was identified.
Clean Water Act (CWA)	This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.
OSHA Classification	Product is hazardous according to the OSHA

	Hazard Communication Standard, 29 CFR 1910.1200, because it carries the occupational exposure limit for mineral oil mist
Ozone Depleting Substances (40 CFR 82 Clean Air Act)	This material does not contain nor was it directly manufactured with any Class I or Class II ozone depleting substances

XVI - Other information

Recommended uses and restriction on use :	Use of the product : see section I
Revision date	26 Feb 2019
Reason(s) for revision	Updates Company's address
Others	No further information

This dossier supplements the technical notifications for use, but does not replace them. The information which it contains is based on our knowledge relating to the product in question on the date indicated.

The information is given in good faith. The user's attention is also drawn to possible risks incurred if a product is employed for uses other than those for which it was designed.

The information dossier does not, under any circumstances, discharge the user from the obligation of being aware of, and of applying, all the texts which govern his sphere of activity. He shall be solely responsible for taking the precautions associated with the use which he makes of the product.

All the statutory provisions referred to are intended simply to assist the recipient in fulfilling the obligations incumbent upon him. This enumeration must not be considered to be exhaustive.

The recipient must ensure that no obligations are incumbent upon him, as a result of texts other than those cited, relating to the holding and handling of the product, for which he alone is responsible.

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