



SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

SDS # : 089532

NORAUTO Multi HF

Date of the previous version: 2020-03-05

Revision Date: 2020-03-20

Version 3

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name	NORAUTO Multi HF
UFI	EQXY-2785-X00C-JHV7***
Number	UEM
Substance/mixture	Mixture

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

Identified uses	Transmission fluid.
------------------------	---------------------

1.3. Details of the supplier of the safety data sheet

Supplier	TOTAL LUBRIFIANTS 562 Avenue du Parc de L'île 92029 Nanterre Cedex FRANCE Tél: +33 (0)1 41 35 40 00 Fax: +33 (0)1 41 35 84 71
-----------------	----------------------------------------------------------------------------------------------------------------------------------------------

For further information, please contact:

Contact Point	HSE
E-mail Address	rm.msds-lubs@total.com

1.4. Emergency telephone number

Emergency telephone: +44 1235 239670
 France - ORFILA (INRS) Tél : +33 (0)1 45 42 59 59
 In France - Poison centers:
 ANGERS : 02 41 48 21 21
 BORDEAUX : 05 56 96 40 80
 LILLE : 08 00 59 59 59
 LYON : 04 72 11 69 11
 MARSEILLE : 04 91 75 25 25
 NANCY : 03 83 22 50 50
 PARIS : 01 40 05 48 48
 STRASBOURG : 03 88 37 37 37
 TOULOUSE : 05 61 77 74 47

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture



SDS # : 089532

NORAUTO Multi HF

Revision Date: 2020-03-20

Version 3

REGULATION (EC) No 1272/2008

For the full text of the H-Statements mentioned in this Section, see Section 2.2.

Classification

The product is classified as dangerous in accordance with Regulation (EC) No. 1272/2008

Aspiration toxicity - Category 1 - (H304)

Acute inhalation toxicity - dust/mist - Category 4 - (H332)

2.2. Label elements

Labelled according to REGULATION (EC) No 1272/2008

Contains Hydrogenated dimerization products of 1-decene and reaction products of 1-decene,hydrogenated, Hydrogenated dimerization products of 1-decene, 1-dodecene and 1-octene, reaction mass of: branched icosane; branched docosane; branched tedocosane



Signal word

DANGER

Hazard Statements

H304 - May be fatal if swallowed and enters airways

H332 - Harmful if inhaled

Precautionary Statements

P101 - If medical advice is needed, have product container or label at hand

P102 - Keep out of reach of children

P271 - Use only outdoors or in a well-ventilated area

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor

P312 - Call a POISON CENTER or doctor if you feel unwell

P331 - Do NOT induce vomiting

P405 - Store locked up

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Supplemental Hazard Statements

EUH208 - Contains Methyl methacrylate. May produce an allergic reaction

2.3. Other hazards

Physical-Chemical Properties Contaminated surfaces will be extremely slippery.

Environmental properties The product may form an oil film on the water surface that may stop the oxygen exchange.



SDS # : 089532

NORAUTO Multi HF

Revision Date: 2020-03-20

Version 3

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixture

Chemical nature

The product is made from refined mineral base oils and synthetic oils.

Hazardous ingredients

Chemical Name	EC-No	REACH registration No	CAS-No	Weight %	Classification (Reg. 1272/2008)
Hydrogenated dimerization products of 1-decene and reaction products of 1-decene,hydrogenated	931-652-2	01-2119537268-33	^	30-<40	Asp. Tox. 1 (H304) Acute Tox. 4 (H332)
Hydrogenated dimerization products of 1-decene, 1-dodecene and 1-octene	700-308-1	01-2119411393-49	^	30-<40	Asp. Tox. 1 (H304) Acute Tox. 4 (H332)
reaction mass of: branched icosane; branched docosane; branched tedocosane	604-766-2	01-2119527647-31	151006-58-5	20-<30	Asp. Tox. 1 (H304) Acute Tox. 4 (H332)
Distillates (petroleum), hydrotreated middle***	265-148-2	no data available	64742-46-7	5-<10	Asp. Tox. 1 (H304)
2,2'-(C16-18 (evennumbered, C18 unsaturated) alkyl imino) diethanol	620-540-6	01-2119510877-33	1218787-32-6	0.1-<0.25	Skin Corr. 1C (H314) Eye Dam. 1 (H318) Acute Tox. 4 (H302) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) Acute M Factor 10 Chronic M factor 1
Methyl methacrylate	201-297-1	01-2119452498-28	80-62-6	0.1-<1	STOT SE 3 (H335) Skin Irrit. 2 (H315) Skin Sens. 1B (H317) Flam Flam. Liq. 2 (H225)
Naphthalene	202-049-5	-	91-20-3	0.001-<0.01	Acute Tox. 4 (H302) Carc. 2 (H351) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) Acute M factor = 1

Additional information

Product containing mineral oil with less than 3% DMSO extract as measured by IP 346.

For the full text of the H-Statements mentioned in this Section, see Section 16.

Section 4: FIRST AID MEASURES

4.1. Description of first-aid measures

General advice

IN CASE OF SERIOUS OR PERSISTENT CONDITIONS, CALL A DOCTOR OR EMERGENCY MEDICAL CARE.

Eye contact

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing.

Skin contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. High pressure jets may



SDS # : 089532

NORAUTO Multi HF

Revision Date: 2020-03-20

Version 3

cause skin damage. Take victim immediately to hospital.

Inhalation	Remove casualty to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration.
Ingestion	Clean mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Protection of First-aiders	First aider needs to protect himself. See Section 8 for more detail. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

4.2. Most important symptoms and effects, both acute and delayed

Eye contact	Not classified based on available data.
Skin contact	Not classified based on available data. May produce an allergic reaction. High pressure injection of the products under the skin may have very serious consequences even though no symptom or injury may be apparent.
Inhalation	Harmful if inhaled.
Ingestion	May be fatal if swallowed and enters airways. If swallowed accidentally, the product may enter the lungs due to its low viscosity and lead to the rapid development of very serious pulmonary lesions (medical survey during 48 hours).

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

Section 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media	Carbon dioxide (CO ₂). ABC powder. Foam. Water spray or fog.
Unsuitable Extinguishing Media	Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Special Hazard	Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot. These may be highly dangerous if inhaled in confined spaces or at high concentration. Combustion products include sulphur oxides (SO ₂ and SO ₃) and Hydrogen sulphide H ₂ S, Mercaptans, Nitrogen oxides (NO _x), Phosphorous oxides, Silicon dioxide.
-----------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

5.3. Advice for fire-fighters

Special protective equipment for fire-fighters	Wear self-contained breathing apparatus and protective suit.
Other information	Cool containers / tanks with water spray. Fire residues and contaminated fire extinguishing



SDS # : 089532

NORAUTO Multi HF

Revision Date: 2020-03-20

Version 3

water must be disposed of in accordance with local regulations.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

General Information Do not touch or walk through spilled material. Contaminated surfaces will be extremely slippery. Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition.

6.2. Environmental precautions

General Information Do not allow material to contaminate ground water system. Prevent entry into waterways, sewers, basements or confined areas. Local authorities should be advised if significant spillages cannot be contained.

6.3. Methods and material for containment and cleaning up

Methods for containment Dike to collect large liquid spills. If necessary dike the product with dry earth, sand or similar non-combustible materials.

Methods for cleaning up Dispose of contents/container in accordance with local regulation. In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

6.4. Reference to other sections

Personal Protective Equipment See Section 8 for more detail.

Waste treatment See section 13.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling For personal protection see section 8. Use only in well-ventilated areas. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing.

Prevention of fire and explosion Take precautionary measures against static discharges.

Hygiene measures Ensure the application of strict rules of hygiene by the personnel exposed to the risk of contact with the product. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Regular cleaning of equipment, work area and clothing is recommended. Do not use abrasives, solvents or fuels. Do not dry hands with rags that have been contaminated with product. Do not put product contaminated rags into workwear pockets.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions Keep away from food, drink and animal feedingstuffs. Keep in a banded area. Keep container tightly closed. Keep preferably in the original container. Otherwise reproduce all indication of the regulation label on the new container. Do not remove the hazard labels of

SDS # : 089532

NORAUTO Multi HF

Revision Date: 2020-03-20

Version 3

the containers (even if they are empty). Design the installations in order to avoid accidental emissions of product (due to seal breakage, for example) onto hot casings or electrical contacts. Store at room temperature. Protect from moisture.

Materials to Avoid Strong oxidizing agents.

7.3. Specific end uses

Specific use(s) Please refer to Technical Data Sheet for further information.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits Mineral oil mist:
 USA: OSHA (PEL) TWA 5 mg/m³, NIOSH (REL) TWA 5 mg/m³, STEL 10 mg/m³, ACGIH (TLV) TWA 5 mg/m³ (highly refined)

Chemical Name	European Union	France
Methyl methacrylate 80-62-6	STEL 100 ppm TWA 50 ppm	VME 50 ppm VME 205 mg/m ³ VLCT 100 ppm VLCT 410 mg/m ³
Naphthalene 91-20-3	TWA 10 ppm TWA 50 mg/m ³	VME 10 ppm VME 50 mg/m ³ C2

Legend See section 16

Derived No Effect Level (DNEL)

DNEL Worker (Industrial/Professional)

Chemical Name	Short term, systemic effects	Short term, local effects	Long term, systemic effects	Long term, local effects
Hydrogenated dimerization products of 1-decene and reaction products of 1-decene, hydrogenated ^	60 mg/m ³ (inhalation)			
Hydrogenated dimerization products of 1-decene, 1-dodecene and 1-octene ^	22.9 mg/m ³ (inhalation)	3.9 mg/m ³ (inhalation)		
reaction mass of: branched icosane; branched docosane; branched tetracosane 151006-58-5	60 mg/m ³ (inhalation)			
Distillates (petroleum), hydrotreated middle*** 64742-46-7	5000 mg/m ³ /15 min (aerosol - inhalation)		2.9 mg/kg bw/8h (dermal) 16 mg/m ³ /8h (aerosol - inhalation)	
2,2'-(C16-18)			2.112 mg/m ³ (inhalation)	

SDS # : 089532

NORAUTO Multi HF

Revision Date: 2020-03-20

Version 3

(evennumbered, C18 unsaturated) alkyl imino) diethanol 1218787-32-6			0.300 mg/kg bw/day (dermal)	
Methyl methacrylate 80-62-6		1.5 mg/cm ² Dermal	208 mg/m ³ Inhalation 13.67 mg/kg Dermal	208 mg/m ³ Inhalation 1.5 mg/cm ² Dermal
Naphthalene 91-20-3			25 mg/m ³ Inhalation 3.57 mg/kg Dermal	25 mg/m ³ Inhalation

DNEL Consumer

Chemical Name	Short term, systemic effects	Short term, local effects	Long term, systemic effects	Long term, local effects
Hydrogenated dimerization products of 1-decene and reaction products of 1-decene,hydrogenated ^	50 mg/m ³ (inhalation)			
Hydrogenated dimerization products of 1-decene, 1-dodecene and 1-octene ^	16.8 mg/m ³ (inhalation)	3.9 mg/m ³ (inhalation)		3.9 mg/m ³ (inhalation)
reaction mass of: branched icosane; branched docosane; branched tedocosane 151006-58-5	50 mg/m ³ (inhalation)			
Distillates (petroleum), hydrotreated middle*** 64742-46-7	3000 mg/m ³ /15min (aerosol - inhalation)		1.3 mg/kg bw/8h (dermal) 4.8 mg/m ³ /8h (aerosol - inhalation)	
2,2'-(C16-18 (evennumbered, C18 unsaturated) alkyl imino) diethanol 1218787-32-6			0.745 mg/m ³ (inhalation) 0.214 mg/kg bw/day (dermal) 0.214 mg/kg bw/day (oral)	
Methyl methacrylate 80-62-6		1.5 mg/cm ² Dermal	74.3 mg/m ³ Inhalation 8.2 mg/kg Dermal	104 mg/m ³ Inhalation 1.5 mg/cm ² Dermal

Predicted No Effect Concentration (PNEC)

Chemical Name	Water	Sediment	Soil	Air	STP	Oral
2,2'-(C16-18 (evennumbered, C18 unsaturated) alkyl imino) diethanol 1218787-32-6	0.000214 mg/l (fw) 0.0000214 mg/l (mw) 0.000870 mg/l (ir)	1.692 mg/kg sediment dw (fw) 0.1692 mg/kg sediment dw (mw)	5 mg/kg soil dw		1.5 mg/l	
Methyl methacrylate 80-62-6	0.94 mg/l fw 0.94 mg/l mw 0.94 mg/l or	5.74 mg/kg dw fw	1.47 mg/kg dw		10 mg/l	
Naphthalene 91-20-3	0.0024 mg/l fw 0.0024 mg/l mw 0.020 mg/l or	0.0672 mg/kg dw fw 0.0672 mg/kg dw	0.0533 mg/kg dw		2.9 mg/l	



SDS # : 089532

NORAUTO Multi HF

Revision Date: 2020-03-20

Version 3

		mw				
--	--	----	--	--	--	--

8.2. Exposure controls

Occupational Exposure Controls

Engineering Measures

Apply technical measures to comply with the occupational exposure limits. Ensure adequate ventilation, especially in confined areas. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

Personal Protective Equipment

General Information

Protective engineering solutions should be implemented and in use before personal protective equipment is considered. The personal protective equipment (PPE) recommendations apply to the product ITSELF. In case of mixtures or formulations, it is suggested that you contact the relevant PPE suppliers.

Respiratory protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Respirator with combination filter for vapour/particulate (EN 14387). Type A/P2. Warning ! filters have a limited use duration. The use of breathing apparatus must comply strictly with the manufacturer's instructions and the regulations governing their choices and uses.

Eye Protection

Safety glasses with side-shields. EN 166.

Skin and body protection

Wear suitable protective clothing. Protective shoes or boots. Long sleeved clothing. Type 4/6.

Hand Protection

Hydrocarbon-proof gloves. Fluorinated rubber. Nitrile rubber. In case of prolonged contact with the product, it is recommended to wear gloves complying with EN 420 and EN 374 standards, protecting at least for 480 minutes and having a thickness of 0,38 mm at least. These values are indicative only. The level of protection is provided by the material of the glove, its technical characteristics, its resistance to the chemicals to be handled, the appropriateness of its use and its replacement frequency. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

Environmental exposure controls

General Information

The product should not be allowed to enter drains, water courses or the soil.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	limpid
Color	orange
Physical State @20°C	liquid
Odor	Characteristic
Odor Threshold	No information available



SDS # : 089532

NORAUTO Multi HF

Revision Date: 2020-03-20

Version 3

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH		Not applicable	
Melting point/range		Not applicable	
Boiling point/boiling range		No information available	
Flash point	> 150 °C > 302 °F		ASTM D 92 ASTM D 92
Evaporation rate		No information available	
Flammability Limits in Air			
upper		No information available	
Lower		No information available	
Vapor Pressure		No information available	
Vapor density		No information available	
Relative density	0.817 - 0.827	@ 15 °C	ASTM D 1298
Density	817 - 827 kg/m ³	@ 15 °C	ASTM D 1298
Water solubility		Insoluble	
Solubility in other solvents		No information available	
logPow		No information available	
Autoignition temperature		No information available	
Decomposition temperature		No information available	
Viscosity, kinematic	17 - 19 mm ² /s	@ 40 °C	ASTM D 445
Explosive properties	Not explosive		
Oxidizing Properties	Not applicable		
Possibility of hazardous reactions	None under normal processing		

9.2. Other information

Freezing Point	No information available
----------------	--------------------------

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

General Information	None under normal processing.
---------------------	-------------------------------

10.2. Chemical stability

Stability	Stable under recommended storage conditions.
-----------	----------------------------------------------

10.3. Possibility of hazardous reactions

Hazardous Reactions	No dangerous reaction known under conditions of normal use.
---------------------	-------------------------------------------------------------

10.4. Conditions to avoid

Conditions to avoid	Keep away from open flames, hot surfaces and sources of ignition. Keep away from heat and sparks.
---------------------	---------------------------------------------------------------------------------------------------



SDS # : 089532

NORAUTO Multi HF

Revision Date: 2020-03-20

Version 3

10.5. Incompatible materials

Materials to Avoid Strong oxidizing agents.

10.6. Hazardous Decomposition Products

Hazardous Decomposition Products Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot. Combustion products include sulphur oxides (SO₂ and SO₃) and Hydrogen sulphide H₂S, Mercaptans, Nitrogen oxides (NO_x), Phosphorous oxides, Silicon dioxide.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity Local effects Product Information

Skin contact	. Not classified based on available data. May produce an allergic reaction. High pressure injection of the products under the skin may have very serious consequences even though no symptom or injury may be apparent.
Eye contact	. Not classified based on available data.
Inhalation	. Harmful if inhaled.
Ingestion	. May be fatal if swallowed and enters airways. If swallowed accidentally, the product may enter the lungs due to its low viscosity and lead to the rapid development of very serious pulmonary lesions (medical survey during 48 hours).
ATEmix (inhalation-dust/mist)	1.60 mg/l
ATEmix (inhalation-vapor)	40.20 mg/l

Acute toxicity - Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hydrogenated dimerization products of 1-decene and reaction products of 1-decene,hydrogenated	LD50 2000 - 5000 mg/kg bw (rat)	LD50 2000 mg/kg bw (rat - OECD 402)	1.17 mg/l (rat - OECD 403)
Hydrogenated dimerization products of 1-decene, 1-dodecene and 1-octene	LD50 >5000 mg/kg bw (rat-OECD 401)	LD50 >2000 mg/kg bw (rat-OECD 402)	LC50 (4h) 1170 mg/m ³ (aerosol rat-OECD 403) LC50 (4h) 1400 - 2000 mg/m ³ (aerosol rat-OECD 403) LC50 (4h) 900 - 1400 mg/m ³ (aerosol rat-OECD 403)
reaction mass of: branched icosane; branched docosane; branched tedocosane	LD50 > 2000 mg/kg (rat - OECD 420)	LD50 > 2000 mg/kg (rat - OECD 402)	
Distillates (petroleum), hydrotreated middle***	> 5000 mg/kg bw (Rat - OECD TG 401)	> 2000 mg/kg bw 24h (Rabbit - OECD TG 402)	= 4.6 mg/l aerosol (4h- rat) OECD TG 403
2,2'-(C16-18 (evennumbered, C18 unsaturated) alkyl imino) diethanol	LD50 1350 mg/kg (rat) (OECD test guideline 401)		
Methyl methacrylate	LD50 > 5000 mg/kg (Rat)	LD50 > 5000 mg/kg (Rabbit)	LD50(4h) 29.8 mg/kg (Rat - Vapour)
Naphthalene	LD50 490 mg/kg (Rat)	LD50 2201 mg/kg (Rat)	LD50 (8h) > 500 mg/m ³ (Rat)

Sensitization



SDS # : 089532

NORAUTO Multi HF

Revision Date: 2020-03-20

Version 3

Sensitization Not classified based on available data. Contains sensitizer(s). May produce an allergic reaction.

Specific effects

Carcinogenicity Not classified based on available data. Contains substance(s) listed as carcinogen.

Chemical Name	European Union
Naphthalene 91-20-3	Carc. 2 (H351)

Mutagenicity
Germ Cell Mutagenicity Not classified based on available data.

Reproductive toxicity Not classified based on available data.

Repeated dose toxicity**Target Organ Effects (STOT)**

Specific target organ systemic toxicity (single exposure) Not classified based on available data.

Specific target organ systemic toxicity (repeated exposure) Not classified based on available data.

Aspiration toxicity May be fatal if swallowed and enters airways. The fluid can enter the lungs and cause damage (chemical pneumonitis, potentially fatal).

Other information

Other adverse effects No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Not classified based on available data.

Acute aquatic toxicity - Product Information

No information available.

Acute aquatic toxicity - Component Information

Chemical Name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish	Toxicity to microorganisms
Hydrogenated dimerization products of 1-decene, 1-dodecene and 1-octene ^	EL50 (72h) > 1000 mg/l (Selenastrum capricornutum)	LL50 (96h) > 5056 mg/l (Americamysis bahia) EL50 (48h) > 1000 mg/l (Daphnia magna)	EL50 (96h) > 1000 mg/l (Pseudokirchneriella subcapitata) LL50 (96h) > 1000 mg/l (Oncorhynchus mykiss) LL50 (96h) > 5003 mg/l (Cyprinodon variegatus - OECD 203)	



SDS # : 089532

NORAUTO Multi HF

Revision Date: 2020-03-20

Version 3

reaction mass of: branched icosane; branched docosane; branched tedocosane 151006-58-5	EC50(96h) > 1000 mg/l (Pseudokirchneriella subcapitata)	EL50(48h) > 150 mg/l (Daphnia magna)	LL50(96h) > 1000 mg/l (Oncorhynchus mykiss)	
Distillates (petroleum), hydrotreated middle*** 64742-46-7	ErL50 (72h) = 22 mg/l (OECD TG 201)	EL50 (48h) = 68 mg/l (OECD TG 202)	LL50 (96h) = 21 mg/l (OECD TG 203)	
2,2'-(C16-18 (evennumbered, C18 unsaturated) alkyl imino) diethanol 1218787-32-6	EC50(72h) 0.119 mg/l		LC50(96h) 0.6 mg/l	
Methyl methacrylate 80-62-6	EC50 (72h) > 110 mg/l (Selenastrum capricornutum)	EC50 (48h) = 69 mg/L Daphnia magna	LC50 (96h) > 79 mg/l (Oncorhynchus mykiss)	
Naphthalene 91-20-3		LC50 (48h) = 2.16 mg/L Daphnia magna EC50 (48h) = 1.96 mg/L Daphnia magna Flow through EC50 (48h) 1.09 - 3.4 mg/L Daphnia magna Static	LC50 (96h) = 1.6 mg/L Oncorhynchus mykiss (flow-through) LC50 (96h) = 5.74-6.44 mg/L Pimephales promelas (flow-through) LC50 (96h) = 0.91-2.82 mg/L Oncorhynchus mykiss (static) LC50 (96h) = 1.99 mg/L Pimephales promelas (static) LC50 (96h) = 31.0265 mg/L Lepomis macrochirus (static)	EC50 = 0.93 mg/L 30 min EC50 > 20 mg/L 18 h

Chronic aquatic toxicity - Product Information

No information available.

Chronic aquatic toxicity - Component Information

Chemical Name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish	Toxicity to microorganisms
Hydrogenated dimerization products of 1-decene, 1-dodecene and 1-octene ^		EL50 (21d) > 1000 mg/l (Daphnia magna - OECD 211) LL50 (21d) > 1000 mg/l (Daphnia magna - OECD 211) NOEL (21d) 1000 mg/l (Daphnia magna - OECD 211) NOELR (21d) > 1000 mg/l (Daphnia magna)	NOEL (96h) > 5003 mg/l (Cyprinodon variegatus - OECD 203)	
Distillates (petroleum), hydrotreated middle*** 64742-46-7		NOEL (21d) = 0.163 mg/l (QSAR modelled data)	NOEL (14d) = 0.069 mg/l (QSAR modelled data)	
Methyl methacrylate 80-62-6		NOEC(21d) 37 mg/l (Daphnia magna)		

Effects on terrestrial organisms

No information available.

12.2. Persistence and degradability



SDS # : 089532

NORAUTO Multi HF

Revision Date: 2020-03-20

Version 3

General Information

No information available

12.3. Bioaccumulative potential**Product Information** No information available.**logPow** No information available**Component Information**

Chemical Name	log Pow
Hydrogenated dimerization products of 1-decene and reaction products of 1-decene,hydrogenated - ^	6.5 @ 20 °C
Methyl methacrylate - 80-62-6	1.38
Naphthalene - 91-20-3	3.3

12.4. Mobility in soil**Soil** Given its physical and chemical characteristics, the product generally shows low soil mobility.**Air** Loss by evaporation is limited.**Water** The product is insoluble and floats on water.12.5. Results of PBT and vPvB assessment**PBT and vPvB assessment** No information available.12.6. Other adverse effects**General Information** No information available.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues / Unused Products Should not be released into the environment. Do not empty into drains. Dispose of in accordance with the European Directives on waste and hazardous waste. Where possible recycling is preferred to disposal or incineration. After use, this oil must be sent to a licensed waste oil facility. Incorrect disposal of used oil poses a risk to the environment. Mixture with other waste types such as solvents, brake- and cooling liquids is forbidden. Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

EWC Waste Disposal No. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: 13 02 05. 13 02 06.



SDS # : 089532

NORAUTO Multi HF

Revision Date: 2020-03-20

Version 3

Other information Refer to section 8 for safety and protective measures for disposal personnel.

Section 14: TRANSPORT INFORMATION

ADR/RID Not regulated

IMDG/IMO Not regulated

ICAO/IATA Not regulated

ADN Not regulated

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

REACH

All substances contained in this mixture have been pre-registered, registered or are exempt from registration in accordance with Regulation (CE) No. 1907/2006 (REACH)

International Inventories All the substances contained in this product are listed or exempted from listing in the following inventories:
Europe (EINECS/ELINCS/NLP)
Korea (KECL)

Further information

No information available

15.2. Chemical Safety Assessment

Chemical Safety Assessment No information available

15.3. National regulatory information

France

- Avoid exceeding occupational exposure limits (see section 8).
- France - Art. R. 4624-18 to 4624-19 of the labour code (Special medical surveillance).

Occupational Illnesses Applicable table(s) n° 36
FR - Art. L 461-6, Art. D.461-1, annexe A, n° 601 (Table of occupational illnesses and diseases)



SDS # : 089532

NORAUTO Multi HF

Revision Date: 2020-03-20

Version 3

Chemical Name	Occupational Illnesses
Methyl methacrylate 80-62-6	RG 65, RG 82

Section 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H225 - Highly flammable liquid and vapor
 H302 - Harmful if swallowed
 H304 - May be fatal if swallowed and enters airways
 H314 - Causes severe skin burns and eye damage
 H315 - Causes skin irritation
 H317 - May cause an allergic skin reaction
 H318 - Causes serious eye damage
 H332 - Harmful if inhaled
 H335 - May cause respiratory irritation
 H351 - Suspected of causing cancer
 H400 - Very toxic to aquatic life
 H410 - Very toxic to aquatic life with long lasting effects

Abbreviations, acronyms

ACGIH = American Conference of Governmental Industrial Hygienists
 bw = body weight
 bw/day = body weight/day
 EC x = Effect Concentration associated with x% response
 GLP = Good Laboratory Practice
 IARC = International Agency for Research of Cancer
 LC50 = 50% Lethal concentration - Concentration of a chemical in air or a chemical in water which causes the death of 50% (one half) of a group of test animals
 LD50 = 50% Lethal Dose - Chemical amount, given at once, which causes the death of 50% (one half) of a group of test animals
 LL = Lethal Loading
 NIOSH = National Institute of Occupational Safety and Health
 NOAEL = No Observed Adverse Effect Level
 NOEC = No Observed Effect Concentration
 NOEL = No Observed Effect Level
 OECD = Organization for Economic Co-operation and Development
 OSHA = Occupational Safety and Health Administration
 UVCB = Substance of unknown or Variable composition, Complex reaction products or Biological material
 ATE = Acute Toxicity Estimate
 QSAR = Quantitative Structure-Activity Relationship
 EL50 = median Effective Loading
 NOELR = No Observed Effect Loading Rate
 PAH = Polycyclic aromatic hydrocarbons
 LOEC = Lowest Observed Effect Concentration
 PVA = Polyvinyl alcohol
 PVC = Polyvinyl chloride
 ECOSAR = Ecological Structure Activity Relationships
 CNS = Central nervous system
 EPA = Environmental Protection Agency
 ErL50 = effective loading on growth rate in algae test, to cause a 50% response
 EbL50 = effective loading on growth with the control in algae test, to cause a 50% response
 DNEL = Derived No Effect Level



SDS # : 089532

NORAUTO Multi HF

Revision Date: 2020-03-20

Version 3

PNEC = Predicted No Effect Concentration

dw = dry weight

fw = fresh water

mw = marine water

or = occasional release

Legend Section 8

OEL = Occupational Exposure Limit

TWA: Time Weight Average

STEL: Short Time Exposure Limit

PEL: Permissible exposure limit

REL: Recommended exposure limit

TLV: Threshold Limit Values

+	Sensitizer	*	Skin designation
**	Hazard Designation	C:	Carcinogen
M:	Mutagen	R:	Toxic to reproduction

Revision Date: 2020-03-20

Revision Note: *** Indicates updated section.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

This safety data sheet serves to complete but not to replace the technical product sheets. The information contained herein is given in good faith and is accurate to the best of knowledge at the date indicated above. It is understood by the user that any use of the product for purposes other than those for which it was designed entails potential risk. The information given herein in no way dispenses the user from knowing and applying all provisions regulating his activity. The user bears sole liability for the precautions required when using the product. The regulatory texts indicated herein are intended to aid the user to fulfil his obligations. This list is not to be considered complete and exhaustive. It is the user's responsibility to ensure that he is subject to no other obligations than those mentioned.

End of the Safety Data Sheet

LUBGES-AI-31686

1. Exposure scenario

Formulation additives, lubricants and greases, Industrial.

Use Descriptor

Sector of use

SU10 - Formulation

SU3 - Industrial Manufacturing (all)

Process category

PROC1 - Use in closed process, no likelihood of exposure

PROC2 - Use in closed, continuous process with occasional controlled exposure

PROC3 - Use in closed batch process (synthesis or formulation)

PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises

PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC15 - Use as laboratory reagent

Environmental Release Category

ERC2 - Formulation of preparations

Specific Environmental Release Category

ATIEL-ATC SpERC 2.Ai-I.v1.

Processes, tasks, activities covered

Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small scale packing, sampling, maintenance.

2. Operational conditions and risk management measures

2.1. Control of environmental exposure

No exposure scenario required

2.2. Control of exposure - Workers / Consumers

Product characteristics

Physical State

Liquid, vapor pressure < 0.5 kPa at STP

Concentration of substance in product

Covers percentage substance in the product up to 100 % (unless stated differently).

Amounts used

Not applicable.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently)

Human factors not influenced by risk management

not applicable

Other operational conditions affecting exposure

Covers percentage substance in the product up to 100 % (unless stated differently).

2.2a. Control of worker exposure

Contributing Scenarios	Operational conditions and risk management measures
General measures applicable to all activities	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.
General exposures. Use in contained systems elevated temperature - PROC 2	No other specific measures identified.
Mixing operations (closed systems). Batch processes at elevated temperatures - PROC 3	Provide extract ventilation to points where emissions occur.
Mixing operations (open systems). Batch processes at elevated temperatures - PROC 4; 5	Provide extract ventilation to points where emissions occur. Avoid carrying out activities involving exposure for more than 4 hours.
Mixing operations (open systems) - PROC 4; 5	Provide extract ventilation to points where emissions occur.
Process sampling - PROC 4; 8b	Avoid carrying out activities involving exposure for more than 1 hour. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Bulk transfers; dedicated facility - PROC 8b	Avoid carrying out operation for more than 4 hours. Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.
Drum/batch transfers; dedicated facility - PROC 8b	Provide extract ventilation to points where emissions occur.
Drum/batch transfers; non-dedicated facility - PROC 8a	Provide a good standard of general or controlled ventilation (10 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour. Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.
Equipment cleaning and maintenance - PROC 8a; 8b	Drain down and flush system prior to equipment break-in or maintenance. Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Clear spills immediately.
Drum and small package filling - PROC 9	Provide a good standard of general or controlled ventilation (10 to 15 air changes per hour). Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Laboratory activities - PROC 15	Avoid carrying out activities involving exposure for more than 4 hours.
Storage - PROC 1; 2	Store substance within a closed system.

2.2b. Control of consumer exposure

Product Category(ies)	Operational conditions and risk management measures
Not applicable	

3. Exposure estimation and references

Health

The risk Management Measures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product

Environment

Used ECETOC TRA model.

4. Guidance for Downstream User to check compliance with the Exposure scenario

Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>). If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

General

For further information see www.atiel.org/reach/introduction

LUBGES-BI-31686

1. Exposure scenario

General use of lubricants and greases in vehicles or machinery. Industrial.

Use Descriptor

Sector of use

SU3 - Industrial Manufacturing (all)

Process category

PROC1 - Use in closed process, no likelihood of exposure

PROC2 - Use in closed, continuous process with occasional controlled exposure

PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Environmental Release Category

ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

ERC7 - Industrial use of substances in closed systems

Specific Environmental Release Category

ATIEL-ATC SpERC 4.Bi.v1.

Processes, tasks, activities covered

Covers general use of lubricants and greases in vehicles or machinery in closed systems. Includes filling and draining of containers and operation of enclosed machinery (including engines) and associated maintenance and storage activities.

2. Operational conditions and risk management measures

2.1. Control of environmental exposure

Not applicable

2.2. Control of exposure - Workers / Consumers

Product characteristics

Physical State

liquid

Vapor Pressure

<0.5 kPa

Concentration of substance in product

Covers percentage substance in the product up to 100 % (unless stated differently).

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting exposure

Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented.

2.2a. Control of worker exposure

Contributing Scenarios	Operational conditions and risk management measures
General measures applicable to all activities	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.
General exposures (closed systems) - PROC 1	No other specific measures identified.
Initial factory fill of equipment Use in contained systems - PROC 2; 9	No other specific measures identified.
Initial factory fill of equipment (open systems) - PROC 8b	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours.
Operation of equipment containing engine oils and similar Use in contained systems - PROC 1	No other specific measures identified.
Equipment cleaning and maintenance - PROC 8b	Drain down system prior to equipment break-in or maintenance. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Retain drain downs in sealed storage pending disposal or for subsequent recycle.
Equipment cleaning and maintenance Operation is carried out at elevated temperature (> 20°C above ambient temperature) - PROC 8b	Drain down system prior to equipment break-in or maintenance. Provide extract ventilation to emission points when contact with warm (>50°C) lubricant is likely. Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls. Retain drain downs in sealed storage pending disposal or for subsequent recycle.
Storage - PROC 1; 2	Store substance within a closed system.

2.2b. Control of consumer exposure

Product Category(ies)	Operational conditions and risk management measures
Not applicable	

3. Exposure estimation and references

Health

The risk Management Measures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product

Environment

Used ECETOC TRA model.

4. Guidance for Downstream User to check compliance with the Exposure scenario

Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>). If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

General

For further information see www.atiel.org/reach/introduction

LUBGES-BP-31686

1. Exposure scenario

General use of lubricants and greases in vehicles or machinery. Professional.

Use Descriptor

Sector of use

Professional

Process category

PROC1 - Use in closed process, no likelihood of exposure

PROC2 - Use in closed, continuous process with occasional controlled exposure

PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC20 - Heat and pressure transfer fluids in dispersive, professional use but closed systems

Environmental Release Category

ERC9a - Wide dispersive indoor use of substances in closed systems

ERC9b - Wide dispersive outdoor use of substances in closed systems

Specific Environmental Release Category

ATIEL-ATC SpERC 9.Bp.v1.

Processes, tasks, activities covered

Covers general use of lubricants and greases in vehicles or machinery in closed systems. Includes filling and draining of containers and operation of enclosed machinery (including engines) and associated maintenance and storage activities.

2. Operational conditions and risk management measures

2.1. Control of environmental exposure

Not applicable

2.2. Control of exposure - Workers / Consumers

Product characteristics

Physical State

liquid

Vapor Pressure

<0.5 kPa

Concentration of substance in product

Covers percentage substance in the product up to 100 % (unless stated differently).

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting exposure

Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented.

2.2a. Control of worker exposure	
Contributing Scenarios	Operational conditions and risk management measures
General measures applicable to all activities	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.
Operation of equipment containing engine oils and similar Use in contained systems - PROC 1	No other specific measures identified.
Material transfers; non-dedicated facility - PROC 8a	Avoid carrying out activities involving exposure for more than 4 hours. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Equipment cleaning and maintenance; dedicated facility - PROC 8b; 20	Drain down system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle.
Storage - PROC 1; 2	Store substance within a closed system.

2.2b. Control of consumer exposure	
Product Category(ies)	Operational conditions and risk management measures
Not applicable	

3. Exposure estimation and references

Health

The risk Management Measures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product

Environment

Used ECETOC TRA model.

4. Guidance for Downstream User to check compliance with the Exposure scenario

Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>). If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

General

For further information see www.atiel.org/reach/introduction