



Eni Radula 320

Safety Data Sheet

According to Regulation (EU) No. 830/2015

Revision date: 10/01/2018

Version: 4.0

Supersedes: 24/04/2014

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

1.1. Product identifier

Product form : Mixture
Trade name : Eni Radula 320
Product code : 2147
Type of product : Lubricants
Formula : 1001-2018
Product group : Trade product

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

1.2.1. Relevant identified uses

Main use category : Industrial use, Professional use
Industrial/Professional use spec : Wide dispersive use
Used in closed systems
Use of the substance/mixture : Functional fluids
Hydraulic oil

Do not use the product for any purposes that have not been advised by the manufacturer.
Function or use category : Hydraulic fluids and additives

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Eni Schmiertechnik GmbH
Paradiesstr. 14, D-97080 Würzburg
Tel (+49) 931 900 98-0, Fax (+49) 931 98442

Sachkundigen Person verantwortlich für das Sicherheitsdatenblatt (Reg. EG Nr. 1907/2006):

Abteilung Anwendungstechnik, Tel. (+49) 931 900 98-145

technik.wuerzburg@agip.de

www.enischmiertechnik-datenblaetter.de

1.4. Emergency telephone number

Notrufnummer (24 h) : Beratungsstelle für Vergiftungserscheinungen, (D) Bonn, Tel. (+49) 228 19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [EU-GHS / CLP]

Not classified

Adverse physicochemical, human health and environmental effects

Contact with eyes may cause temporary reddening and irritation. Prolonged or repeated skin contact may cause a slight transient irritation. For specific information about the toxicological/ecotoxicological properties and classification of this product, see Sect. 11 and/or Sect. 12.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

EUH-statements : EUH210 - Safety data sheet available on request.
Security closing plug for children : Not applicable
Tactile warning : Not applicable

Other:

General advice : None to be reported.

2.3. Other hazards (not relevant for classification)

Physical/chemical : This product is combustible, but not classified as Flammable. The creation of flammable vapour mixtures takes place at temperatures which are higher than normal ambient levels.

Health : If the product is handled or used at high temperature, contact with hot product or vapours may cause burns,Any substance, in case of accidents involving pressurized circuits and the like, may be accidentally injected under the skin, even without external damage. In such a case, the victim should be brought to an hospital as soon as possible, to get specialized medical treatment,Do not wait for symptoms to develop.

Environment : None

Contaminants : In exceptional cases (i.e prolonged storage in tanks contaminated with water, and presence of anaerobic sulfate-reducing microbial colonies), the product may undergo a degradation and generate small amounts of sulfur compounds, including H₂S,See Heading 16

(air contaminants or other substances)

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Composition/information on ingredients : Mixture of hydrocarbons
Additives

Hazardous ingredients and/or with : See table
relevant occupational exposure limits

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [EU-GHS / CLP]
Residual oils (petroleum,) solvent-refined (Main component, see note [*])	(CAS-No.) 64742-01-4 (EC-No.) 265-101-6 (EC Index-No.) 649-459-00-4 (REACH-no) 01-2119488707-21	70 - 80	Not classified
Lubricating oils (petroleum), C24-50, solvent-extd., dewaxed, hydrogenated (Component, see note [*])	(CAS-No.) 101316-72-7 (EC-No.) 309-877-7 (EC Index-No.) 649-530-00-X (REACH-no) 01-2119489969-06	20 - 30	Not classified

Note [*]: this product has a value of DMSO extract < 3 % wt, according to IP 346/92. According to the criteria laid out by the EU (note L, Annex VI of Regulation (CE) 1272/2008), this product must be regarded as non carcinogenic.

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : In case of disturbances owing to inhalation of vapours or mists, remove the victim from exposure; keep at rest; if necessary, seek medical attention. See also section 4.3.
- First-aid measures after skin contact : Take off contaminated clothing and shoes. Wash thoroughly with soap and water. If inflammation or irritation persists, seek medical advice. In case of contact with hot product, cool affected part with plenty of cold water, and cover with gauze or clean cloth. Call a doctor or bring to an hospital. Do not use salves or ointments, unless directed by doctor. Body hypothermia must be avoided. Do not put ice on the burn.
- First-aid measures after eye contact : Rinse eyes thoroughly for at least 15 minutes. Keep eyelids well apart. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, seek medical advice. In case of contact with hot product, cool affected part with plenty of cold water, and cover with gauze or clean cloth. Call a doctor or bring to an hospital. Do not use salves or ointments, unless directed by doctor.
- First-aid measures after ingestion : Do not induce vomiting to avoid aspiration into the lungs. If the person is conscious, rinse mouth with water without swallowing. Keep at rest. Call for medical assistance or bring to an hospital. If the casualty is unconscious, place in the recovery position. In case of spontaneous vomiting, keep head low, to avoid the risk of aspiration into the lungs. Do not give anything by mouth to an unconscious person.

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

- Symptoms/effects after inhalation : This product has a low vapour pressure, and in normal conditions at ambient temperature the concentration in the air is negligible. A significant concentration may build up only if the product is used at high temperature, or in case of sprays and mists. In these cases overexposure to vapours may cause irritation to airways, nausea and dizziness.
- Symptoms/effects after skin contact : Prolonged or repeated skin contact may cause a slight transient irritation. Contact with hot product may cause thermal burns.
- Symptoms/effects after eye contact : Contact with eyes may cause temporary reddening and irritation. Contact with hot product or vapours may cause burns.
- Symptoms/effects after ingestion : Accidental ingestion of small quantities of the product may cause irritation, nausea and gastric disturbances. Taking into account the taste of the product, however, ingestion of dangerous quantities is very unlikely.
- Symptoms/effects upon intravenous administration : No information available.
- Chronic symptoms : None to be reported, according to the present classification criteria.

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

Obtain medical attention if casualty has an altered state of consciousness or if symptoms do not resolve. If there is any suspicion of inhalation of H₂S (hydrogen sulphide). The casualty should be sent immediately to hospital. Immediately begin artificial respiration if breathing has ceased. Administer oxygen if necessary.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Small-size fires: carbon dioxide, dry chemicals, foam, sand or earth. Large fires: foam or water fog (mist). These means should be used by trained personnel only. Other extinguishing gases (according to regulations).
- Unsuitable extinguishing media : Do not use water jets. 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.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : This product is combustible, but not classified as Flammable. The creation of flammable vapour mixtures takes place at temperatures which are higher than normal ambient levels.
- Explosion hazard : The vapours are flammable and may form explosive mixtures with air.
- Combustion products : Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, NOx, H2S and SOx (harmful/toxic gases), Oxygenated compounds (aldehydes, etc.)

5.3. Advice for firefighters

- Firefighting instructions : Shut off source of product, if possible. Spilled product which is not burning should be covered with sand or foam. If possible, move containers and drums away from danger area. Use water sprays to cool containers and surfaces exposed to the flames. If the fire cannot be controlled, evacuate area.
- Special protective equipment for firefighters : Personal protection equipment for firefighters (see also sect. 8). EN 443. EN 469. EN 659. In case of a large fire or in confined or poorly ventilated spaces, wear full fire resistant protective clothing and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Other information : In case of fire, do not discharge residual product, waste materials and runoff water: collect separately and use a proper treatment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Stop or contain leak at the source, if safe to do so. Eliminate all ignition sources if safe to do so (e.g. electricity, sparks, fires, flares). Avoid accidental sprays on hot surfaces or electrical contacts. Avoid direct contact with released material. Keep upwind.

6.1.1. For non-emergency personnel

- Protective equipment : See Section 8.
- Emergency procedures : Keep non-involved personnel away from the area of spillage. Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency.

6.1.2. For emergency responders

- Protective equipment : Small spillages: normal antistatic working clothes are usually adequate. Large spillages: full body suit of chemically resistant and antistatic material. If necessary heat resistant and insulated. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons. Gloves made of PVA are not water-resistant, and are not suitable for emergency use. If contact with hot product is possible or anticipated, gloves should be heat-resistant and thermally insulated. Antistatic non-skid safety shoes or boots, chemical resistant, if necessary heat resistant and insulated. Work helmet. Goggles and /or face shield, if splashes or contact with eyes is possible or anticipated. Respiratory protection: A half or full-face respirator with filter(s) for organic vapours (A) (or A+B when applicable for H2S), or a Self-contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.
- Emergency procedures : Notify local authorities according to relevant regulations.

6.2. Environmental precautions

Do not let the product accumulate in confined or underground spaces. Do not let the product flow into sewers or water courses, or in any way contaminate the environment. In case of contamination of environment compartments (soil, subsoil, surface or underground waters), remove contaminated soil when possible, and in any case treat all involved compartments in accordance

with local regulations. The site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.

6.3. Methods and material for containment and cleaning up

- For containment : Contain spilled liquid with sand, earth or other suitable absorbents (non-flammable). Recover free liquid and waste materials in suitable waterproof and oil-resistant containers. Clean contaminated area. Dispose of according to local regulations. If in water: Confine the spillage. Remove from surface by skimming or suitable floating absorbents. Collect recovered product and other waste materials in suitable waterproof, oil resistant containers. Recover or dispose of according to local regulations. Do not use solvents or dispersants, unless specifically advised by an expert, and, if required, approved by local authorities.
- Other information : Recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air/water temperature, wave/current direction and speed) may significantly influence the choice of appropriate actions. Local regulations may also prescribe or limit actions to be taken. For this reason, local experts should be consulted when necessary.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure that all relevant regulations regarding handling and storage facilities of flammable products are followed. Do not use compressed air for filling, discharging, or handling operations. Keep away from heat/sparks/open flames/hot surfaces. Use and store only outdoors or in a well-ventilated area. During transfer and mixing operations, ensure that all equipment is correctly grounded. Avoid the build-up of electric charges. Emptied containers can contain combustible product residues. Do not cut, weld, drill, burn or incinerate empty containers or drums, unless they have been drained and cleaned. Before entering storage tanks and commencing any operation in a confined area (e.g. tunnels), carry out an adequate clean-up, and check the atmosphere for oxygen content, flammability, and the presence of sulphur compounds. See also Section 16, "Other information".
- Handling temperature : This product can be handled at ambient temperatures.
- Hygiene measures : Avoid contact with skin. Do not breathe fume/ mist/ vapours. Do not ingest. Do not smoke. Do not eat and do not drink during use. Do not clean hands with dirty or oil-soaked rags. Do not re-use clothes, if they are still contaminated. Keep away from food and beverages.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in dry, well ventilated area. Keep away from open flames, hot surfaces and sources of ignition. Do not smoke.
- Incompatible products : Keep away from: strong oxidants.
- Storage temperature : This product can be stored at ambient temperatures.
- Storage area : Storage area layout, tank design, equipment and operating procedures must comply with the relevant European, national or local legislation. Storage installations should be designed with adequate bunds so as to prevent ground and water pollution in case of leaks or spills. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations.
- Packages and containers: : If the product is supplied in containers: Keep containers tightly closed and properly labelled. Keep only in the original container or in a suitable container for this kind of product.
- Packaging materials : For containers, or container linings use materials specifically approved for use with this product. Compatibility should be checked with the manufacturer.

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Residual oils (petroleum,) solvent-refined (64742-01-4)		
Austria	MAK (mg/m ³)	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)

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Belgium	Limit value (mg/m ³)	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Denmark	Grænseværdi (langvarig) (mg/m ³)	1 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Denmark	Grænseværdi (kortvarig) (mg/m ³)	2 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Hungary	AK-érték	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Netherlands	MAC TGG 8h (mg/m ³)	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Spain	VLA-ED (mg/m ³)	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Spain	VLA-EC (mg/m ³)	10 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Sweden	Nivågränsvärde (NVG) (mg/m ³)	1 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Sweden	Kortidsvärde (KTV) (mg/m ³)	3 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
United Kingdom	WEL TWA (mg/m ³)	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
United Kingdom	WEL STEL (mg/m ³)	10 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Canada (Quebec)	VECD (mg/m ³)	10 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Canada (Quebec)	VEMP (mg/m ³)	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
USA - ACGIH	ACGIH TLV®-TWA (mg/m ³)	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
USA - ACGIH	ACGIH TLV®-STEL (mg/m ³)	10 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
USA - NIOSH	NIOSH REL (TWA) (mg/m ³)	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
USA - NIOSH	NIOSH REL (STEL) (mg/m ³)	10 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
USA - OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Lubricating oils (petroleum), C24-50, solvent-extd., dewaxed, hydrogenated (101316-72-7)		
Austria	MAK (mg/m ³)	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Belgium	Limit value (mg/m ³)	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Denmark	Grænseværdi (langvarig) (mg/m ³)	1 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Denmark	Grænseværdi (kortvarig) (mg/m ³)	2 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Hungary	AK-érték	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Netherlands	MAC TGG 8h (mg/m ³)	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Spain	VLA-ED (mg/m ³)	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Spain	VLA-EC (mg/m ³)	10 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Sweden	Nivågränsvärde (NVG) (mg/m ³)	1 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Sweden	Kortidsvärde (KTV) (mg/m ³)	3 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
United Kingdom	WEL TWA (mg/m ³)	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)

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United Kingdom	WEL STEL (mg/m ³)	10 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Canada (Quebec)	VECD (mg/m ³)	10 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
Canada (Quebec)	VEMP (mg/m ³)	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
USA - ACGIH	ACGIH TLV®-TWA (mg/m ³)	5 mg/m ³
USA - ACGIH	ACGIH TLV®-STEL (mg/m ³)	10 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
USA - NIOSH	NIOSH REL (TWA) (mg/m ³)	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
USA - NIOSH	NIOSH REL (STEL) (mg/m ³)	10 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)
USA - OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³ (Mineral base oil mist, severely refined, DMSO extract <3% m/m)

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DNEL/DMEL (additional information)

Additional information Not applicable

PNEC (additional information)

Additional information Not applicable

Monitoring methods : Monitoring procedures should be chosen according to the indications set by national authorities or labour contracts, Refer to relevant legislation and in any case to the good practice of industrial hygiene.

Note : The Derived No Effect Level (DNEL) is an estimated safe level of exposure that is derived from toxicity data in accord with specific guidance within the European REACH regulation. The DNEL may differ from an Occupational Exposure Limit (OEL) for the same chemical. OELs may be recommended by an individual company, a governmental regulatory body or an expert organization, such as the Scientific Committee for Occupational Exposure Limits (SCOEL) or the American Conference of Governmental Industrial Hygienists (ACGIH). OELs are considered to be safe exposure levels for a typical worker in an occupational setting for an 8-hour work shift, 40 hour work week, as a time weighted average (TWA) or a 15 minute short-term exposure limit (STEL). While also considered to be protective of health, OELs are derived by a process different from that of REACH.

8.2. Exposure controls

Appropriate engineering controls : Before entering storage tanks and commencing any operation in a confined area, carry out an adequate clean-up, and check the atmosphere for oxygen content, flammability, and the presence of sulphur compounds. See also Section 16, "Other information".

Personal protective equipment (for industrial or professional use) : Face shield. Gloves. Protective clothing. Safety glasses. Safety shoes or boots. Dust/aerosol mask.



Hand protection	: When there is a risk of contact with the skin, use hydrocarbon-resistant, felt-lined gloves. Adequate materials: nitrile (NBR) or PVC with a protection index > 5 (permeation time > 240 mins). Use gloves respecting all the conditions and within the limits set by the manufacturer. Replace gloves immediately in case of cuts, holes or other signs of damages or degradation. If necessary, refer to the EN 374 standard. Personal hygiene is a key element for an effective hand care. Gloves must be worn only with clean hands. After wearing gloves, hands must be carefully washed and dried.
Eye protection	: When there is a risk of contact with the eyes, use safety goggles or other means of protection (face shield). If necessary, refer to national standards or to the EN 166 standard.
Skin and body protection	: Long-sleeved overalls. If necessary, refer to the EN 340 and related standards, for definition of characteristics and performance according to the risk rating of the area. Antistatic non-skid safety shoes or boots, chemical resistant, if necessary heat resistant and insulated.
Respiratory protection	: Independently from other possible actions (technical modifications, operating procedures, and other means to limit the exposure of workers), personal protection equipment can be used according to necessity. Open or well ventilated spaces: in presence of oil mists and if the product is handled without adequate containment means: use full or half-face masks with filter for mists/aerosols. In case there is a significant presence of vapours (e.g. through handling at high temperature), use full or half-face masks with filter for hydrocarbon vapours. (EN 136/140/145). Combination filter device (DIN EN 141). Approved respiratory protection equipment shall be used in spaces where hydrogen sulphide may accumulate: full face mask with cartridge/filter type "B" (grey for inorganic vapours including H2S) or self-contained breathing apparatus (SCBA). (EN 136/140/145). Closed or confined areas (e.g. tank interiors): the use of protection measures for airways (masks or self-contained breathing apparatus), must be assessed according to the specific activity, as well as level and duration of predicted exposure. (EN 136/140/145)
Thermal hazard protection	: If contact with hot product is possible or anticipated, gloves should be heat-resistant and thermally insulated.
Environmental exposure controls	: Do not discharge the product into the environment. Storage areas/installations should be designed with adequate bunds so as to prevent ground and water pollution in case of leaks or spills. Prevent discharge of undissolved substance to or recover from onsite wastewater. Onsite wastewater treatment required. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Consumer exposure controls	: Not applicable.

8.3. Hygiene measures

General protective and hygienic measures	: Avoid contact with skin and eyes, Do not breathe vapours or mists, Do not clean hands with dirty or oil-soaked rags, Do not keep dirty rags in the overall pockets, Do not drink, eat or smoke with dirty hands, Wash hands with water and mild soap, do not use solvents or other irritant products which have a defatting effect on the skin, Do not re-use clothes, if they are still contaminated.
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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid, bright & clear.
Molecular mass	: Not applicable for mixtures
Colour	: Yellow-brown.
Odour	: Slight odour of petroleum.
Odour threshold	: There are no data available on the preparation/mixture itself.
pH	: Not applicable.
Relative evaporation rate (butylacetate=1)	: Negligible.
Melting point	: -6 °C (pour point) (ASTM D 97)

Freezing point	: No data available
Boiling point	: No data available
Flash point	: 281 °C (ASTM D 92)
Critical temperature	: Not applicable for mixtures
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: No data available
Critical pressure	: Not applicable for mixtures
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 905 kg/m ³ (15 °C) (ASTM D 4052)
Solubility	: Water: Immiscible and insoluble
Log Pow	: Not applicable for mixtures
Log Kow	: Not applicable for mixtures
Viscosity, kinematic	: 320 mm ² /s (40 °C) (ASTM D 445)
Viscosity, dynamic	: No data available
Explosive properties	: None (according to composition).
Oxidising properties	: None (according to composition).
Explosive limits	: No data available

9.2. Other information

Additional information : No data available

The above data (9.1 - 9.2) are typical values and do not constitute a specification.

SECTION 10: Stability and reactivity

10.1. Reactivity

This mixture does not offer any further hazard for reactivity, except what is reported in the following paragraphs.

10.2. Chemical stability

Stable product, according to its intrinsic properties (in normal conditions of storage and handling).

10.3. Possibility of hazardous reactions

None (in normal conditions of storage and handling). Contact with strong oxidizers (peroxides, chromates, etc.) may cause a fire hazard. Sensitivity to heat, friction or shock cannot be assessed in advance.

10.4. Conditions to avoid

Keep away from strong oxidizers. Keep away from open flames, hot surfaces and sources of ignition. Avoid the build-up of electrostatic charge.

10.5. Incompatible materials

Strong oxidants.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition may produce : Toxic fumes. In exceptional cases (i.e prolonged storage in tanks contaminated with water, and presence of anaerobic sulfate-reducing microbial colonies), the product may undergo a degradation and generate small amounts of sulfur compounds, including H₂S. See also Section 16, "Other information".

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified (Based on available data, the classification criteria are not met) (according to composition)

Residual oils (petroleum,) solvent-refined (64742-01-4)

LD50 oral rat	> 5000 mg/kg (OECD 401)
LD50 dermal rat	> 5000 mg/kg (OECD 402)

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LC50 inhalation rat (mg/l)	> 5 mg/l/4h (OECD 403)
Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met) (according to composition) pH: Not applicable.
Serious eye damage/irritation	: Not classified (Based on available data, the classification criteria are not met) (according to composition) pH: Not applicable.
Respiratory or skin sensitisation	: Not classified (Based on available data, the classification criteria are not met) (according to composition)
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met) (according to composition)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met) (according to composition) This product contains : Residual oils (petroleum) solvent-refined, Baseoil - unspecified, [A complex combination by hydrocarbons obtained as the solvent insoluble fraction from solvent refining of a residuum using a polar organic solvent such as phenol or furfural. It consists of hydrocarbons having carbon numbers predominantly higher than C25 and boiling above approximately 400 °C (752 °F).], Lubricating oils (petroleum), C24-50, solvent-extd, dewaxed, hydrogenated, Baseoil - unspecified, [A complex combination of hydrocarbons obtained by solvent extraction and hydrogenation of atmospheric distillation residues. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C24 through C50 and produces a finished oil with a viscosity in the order of 16cSt to 75cSt at 40 °C (104 °F).] this product has a value of DMSO extract < 3 % wt, according to IP 346/92. According to the criteria laid out by the EU (note L, Annex VI of Regulation (CE) 1272/2008), this product must be regarded as non carcinogenic.
Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met) (according to composition)
STOT-single exposure	: Not classified (Based on available data, the classification criteria are not met) (according to composition)
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met) (according to composition)

Residual oils (petroleum,) solvent-refined (64742-01-4)

LOAEL (oral, rat, 90 days)	125 mg/kg bodyweight/day (OECD TG 408)
Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met) (according to composition) Viscosity, kinematic: > 20,5 mm ² /s (40 °C) (ASTM D 445)

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Viscosity, kinematic	320 mm ² /s (40 °C) (ASTM D 445)
Potential adverse human health effects and symptoms	: Contact with eyes may cause temporary reddening and irritation. Prolonged or repeated skin contact may cause a slight transient irritation. Avoid all eye and skin contact and do not breathe vapour and mist.
Other information	: None.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. An uncontrolled release to the environment may nevertheless produce a contamination of different environmental compartments (soil, underground, surface water bodies, aquifers). Handle according to general working hygiene practices to avoid pollution and release into the environment.
Ecology - air	: This product has a low vapour pressure. A significant exposure may happen only if the product is used at high temperature, or in case of sprays and mists.
Ecology - water	: This product is not soluble in water. It floats on water and forms a film on the surface. The damage to aquatic organisms is of mechanical kind (immobilization and entrapment)

Residual oils (petroleum,) solvent-refined, Baseoil - unspecified (64742-01-4)

LC50 fish 1	> 100 mg/l (LL 50)
EC50 Daphnia 1	> 10000 mg/l WAF, 48 h (OECD 202)

12.2. Persistence and degradability

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Persistence and degradability	The most significant constituents of the product should be considered as "inherently biodegradable", but not "readily biodegradable", and they may be moderately persistent, particularly in anaerobic conditions.
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Residual oils (petroleum,) solvent-refined, Baseoil - unspecified (64742-01-4)

Persistence and degradability	The most significant constituents of the product should be considered as "inherently biodegradable", but not "readily biodegradable", and they may be moderately persistent, particularly in anaerobic conditions.
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12.3. Bioaccumulative potential

Eni Radula 320

Log Pow	Not applicable for mixtures
Log Kow	Not applicable for mixtures
Bioaccumulative potential	Not established.

12.4. Mobility in soil

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Ecology - soil	No data available.
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12.5. Results of PBT and vPvB assessment

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This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

Results of PBT-vPvB assessment	The components in this formulation do not meet the criteria for classification as PBT or vPvB. The product should be considered prudentially as "Persistent" in the environment, according to the REACH Annex XIII criteria (point 1.1)
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Component

Residual oils (petroleum,) solvent-refined, Baseoil - unspecified (64742-01-4)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII This substance does not meet the criteria for classification as PBT or vPvB. The product should be considered prudentially as "Persistent" in the environment, according to the REACH Annex XIII criteria (point 1.1)
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12.6. Other adverse effects

Other adverse effects	: None.
Additional information	: This product has no specific properties for inhibition of bacterial activity. In any case, wastewater containing this product should be treated in plants that are suited for the specific purpose.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Do not dispose of the product, either new or used, by discharging into sewers, tunnels, lakes or water courses. Deliver to a qualified official collector. Dispose of empty containers and wastes safely.
Sewage disposal recommendations	: Dispose of in a safe manner in accordance with local/national regulations. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Product/Packaging disposal recommendations	: European Waste Catalogue code(s) (Decision 2001/118/CE): 13 02 05* (mineral-based non-chlorinated engine, gear and lubricating oils). This EWC code is only a general indication, and takes into account the original composition of the product and its intended use. The user has the responsibility of choosing the right EWC code, considering the actual use of the product, alterations and contaminations.
Additional information	: Empty containers may contain combustible product residues. Do not cut, weld, drill, burn or incinerate empty containers or drums, unless they have been cleaned, and declared safe.

Ecology - waste materials : The product as it is does not contain halogenated substances.
 EURAL code (EWC) : 13 02 05* - Mineral-based non-chlorinated engine, gear and lubricating oils

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not regulated for transport				
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
Other information : None.				

14.6. Special precautions for user

Special transport precautions : None.

- Overland transport

Transport regulations (ADR) : Not subject

- Transport by sea

Transport regulations (IMDG) : Not subject
 Limited quantities (IMDG) : Not applicable

- Air transport

Transport regulations (IATA) : Not subject

- Inland waterway transport

Transport regulations (ADN) : Not subject

- Rail transport

Transport regulations (RID) : Not subject

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

IBC code : Not applicable.

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

3. Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008	Lubricating oils (petroleum), C24-50, solvent-extd., dewaxed, hydrogenated
28. Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as Carcinogen category 1A or 1B (Table 3.1) or Carcinogen category 1 or 2 (Table 3.2) and listed as follows: Carcinogen category 1A (Table 3.1)/Carcinogen category 1 (Table 3.2) listed in Appendix 1 Carcinogen category 1B (Table 3.1)/Carcinogen category 2 (Table 3.2) listed in Appendix 2	Lubricating oils (petroleum), C24-50, solvent-extd., dewaxed, hydrogenated

No ingredients are included in the REACH Candidate list (> 0,1 % m/m).

Contains no REACH Annex XIV substances

Relevant EU Legislation : Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). (et sequens).
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (et sequens).
Directives 89/391/CEE, 89/654/CEE, 89/655/CEE, 89/656/CEE, 90/269/CEE, 90/270/CEE, 90/394/CEE, 90/679/CEE, 93/88/CEE, 95/63/CE, 97/42/CE, 98/24/CE, 99/38/CE, 99/92/CE, 2001/45/CE, 2003/10/CE, 2003/18/CE (Health and safety on the workplace)
Directive 98/24/EC (protection of the health and safety of workers from the risks related to chemical agents at work).
Directive 92/85/CE (measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding)
Directive 2012/18/CE (Control of major-accident hazards involving dangerous substances)
Directive 2004/42/CE (Limitation of emissions of Volatile Organic Compounds)

15.1.2. National regulations

National adoption of EU Directives concerning health and safety on the workplace.
National adoption of EU Directives concerning control of major-accident hazards involving dangerous substances (2012/18/CE).
Relevant national laws on prevention of water pollution.
Relevant national laws on protection of the health of pregnant workers (National adoption of Dir. 92/85/EEC).
National adoption of Directives 75/439/CEE - 87/101/CEE concerning disposal of used oils.

France

Maladies professionnelles (F) : RG 36 - Affections provoquées par les huiles et graisses d'origine minérale ou de synthèse

Germany

VwVwS Annex reference : Water hazard class (WGK) (D) 1, low hazard to waters (Classification according to VwVwS, Annex 4)
WGK remark : Classification based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS)
VbF class (D) : Not applicable.
Storage class (LGK) (D) : LGK 12 - Non-combustible liquids
Employment restrictions : Employment prohibitions or restrictions on the protection of young people at work according to § 22 ArbSchG in the case of formation of hazardous substances have to be observed.
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)
Other information, restrictions and prohibition regulations : TRGS 900: Occupational Exposure Limits
TRGS 800: Fire protection measures
TRGS 555: Working instruction and information for workers
TRGS 402: Identification and Assessment of the Risks from Activities involving Hazardous Substances: Inhalation Exposure
TRGS 401: Risks resulting from skin contact - identification, assessment, measures
TRGS 400: Hazard assessment for activities involving Hazardous Substances

Netherlands

Saneringsinspanningen : C - Lozing minimaliseren
SZW-lijst van kankerverwekkende stoffen : None of the components are listed
SZW-lijst van mutagene stoffen : None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : None of the components are listed

Denmark

Recommendations Danish Regulation : Pregnant/breastfeeding women working with the product must not be in direct contact with it

15.2. Chemical safety assessment

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]
No chemical safety assessment has been carried out

A chemical safety assessment has been carried out for the following components of this mixture:

Lubricating oils (petroleum), C24-50, solvent-extd., dewaxed, hydrogenated
Residual oils (petroleum,) solvent-refined

SECTION 16: Other information

Indication of changes:

Modification according to Regulation (EC) 830/2015.

Abbreviations and acronyms:

	Complete text of the H phrases quoted in this Safety Data Sheet. These phrases are reported here for information only, and MAY NOT correspond to the classification of the product.
	N/D = not available
	N/A = not applicable
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Effective concentration for 50 percent of test population (median effective concentration)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Lethal concentration for 50 percent of test population (median lethal concentration)
LD50	Lethal dose for 50 percent of test population (median lethal dose)
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals, Regulation (EC) No 1907/2006
RID	Regulation concerning the International Carriage of Dangerous Goods by Railways
SDS	Safety Data Sheet
STP	Sewage treatment plant
vPvB	Very Persistent and Very Bioaccumulative

Data sources : This Safety Data Sheet is based on the real characteristics of the components and their combination, taking into account the information provided by the suppliers.

Training advice : Provide adequate training to professional operators for the use of PPEs, according to the information contained in this Safety Data Sheet.

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Product code: 2147

Safety Data Sheet

According to Regulation (EU) No. 830/2015

Revision date: 10/01/2018

Version: 4.0

Other information

: Do not use the product for any purposes that have not been advised by the manufacturer. In exceptional cases (i.e prolonged storage in tanks contaminated with water, and presence of anaerobic sulfate-reducing microbial colonies), the product may undergo a degradation and generate small amounts of sulfur compounds, including H₂S. This situation is especially relevant in all those circumstances which require to enter a confined space, with direct exposure to the vapours. If this possibility is suspected, a specific assessment of inhalation risks from the presence of H₂S in confined spaces must be made, to help determine prevention measures and controls (i.e. PPE) appropriate to local circumstances, and adequate emergency procedures. If there is any suspicion of inhalation of H₂S (hydrogen sulphide), Rescuers must wear breathing apparatus, belt and safety rope, and follow rescue procedures. Send patient to hospital. Immediately begin artificial respiration if breathing has ceased. Administer oxygen if necessary.

Full text of H- and EUH-statements:

EUH210	Safety data sheet available on request.
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SDS EU (REACH Annex II) eni 2015

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product