



According to 1907/2006/EG Regulation, Article 31

Substance: DV-100 Vacuum Pump Oil

Stand: 09.12.2019 / Rev.-Nr. 6

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name: Item No.: 4666794 / DV-106-Y und 4666807 / DV-108 / Vacuum Pump Oil (DV-100)

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

Use of the Substance/Mixture: Compressor oil.

Uses advised against: This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the supplier.

1.3 Details of the supplier of the safety data sheet

REFCO Manufacturing Ltd. Industriestrasse 11 | 6285 Hitzkirch Switzerland

Tel. +41 41 919 72 82 | Fax +41 41 919 72 83

E-Mail: info@refco.ch

1.4 Emergency telephone number

Swiss Toxicological Information Centre, CH 8028 Zürich

Notruf 145 oder +41 44 251 51 51

Nicht dringende Anrufe: +41 44 251 66 66

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms: No Hazard Symbol required

Signal word: No signal word.

Physical hazards: Not classified as a physical hazard according to CLP criteria. Hazard statements:

Health Hazards: Not classified as a health hazard under CLP criteria.

Environmental Hazards: Not classified as environmental hazard according to CLP criteria

Precautionary statements: Prevention: No precautionary phrases.

Response: No precautionary phrases. Storage: No precautionary phrases. Disposal: No precautionary phrases.

2.3 Other hazards

This mixture does not contain any REACH registered substances that are assessed to be a PBT or a vPvB. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis. Used oil may contain harmful impurities. Not classified as flammable but will burn.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Highly refined mineral oils and additives. The highly refined mineral oil contains <3% Chemical nature:

(w/w) DMSOextract, according to IP346.



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4. FIRST AID MEASURES

General advice

Not expected to be a health hazard when used under normal conditions.

4.1 Description of first aid measures

Protection of first-aiders

When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

If inhaled

No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.

In case of skin contact

Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.

In case of eye contact

Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention. If swallowed: In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to doctor/physician: Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:

Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media:

Do not use water in a jet.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.

5.3 Advice for firefighters

Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469). Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non emergency personnel: Avoid contact with skin and eyes. For emergency responders: Avoid contact with skin and eyes.

6.2 Environmental precautions

Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Local authorities should be advised if significant spillages cannot be contained.



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6.3 Methods and materials for containment and cleaning up

Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.

6.4 Reference to other sections

For guidance on selection of personal protective equipment see chapter 8 of this safety data sheet. For guidance on disposal of spilled material see chapter 13 of this safety data sheet.

7. HANDLING AND STORAGE

General Precautions

Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

7.1 Precautions for safe handling

Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Product Transfer: This material has the potential to be a static accumulator. Proper grounding and bonding

procedures should be used during all bulk transfer operations.

7.2 Conditions for safe storage, including any incompatibilities

Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.

Other data: Keep container tightly closed and in a cool, well-ventilated place. Use properly labeled

and closable containers. Store at ambient temperature.

Packaging material: Suitable material: For containers or container linings, use mild steel or high density

polyethylene. Unsuitable material: PVC.

Container advice: Polyethylene containers should not be exposed to high temperatures because of

possible risk of distortion.

7.3 Specific end use(s) additional information

Not applicable.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

Occupational exposure limits

Components	CAS N°	Value type (Form of exposure)	Control parameters	Basis
Oil mist, mineral		TWA	5 mg/m3	US. ACGIH Threshold limit values

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory. Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.





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National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods http://www.cdc.gov/niosh/

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods http://www.osha.gov/

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances http://www.hse.gov.uk/

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany http://www.dguv.de/inhalt/index.jsp

L'Institut National de Recherche et de Securité, (INRS), France http://www.inrs.fr/accueil

8.2 Exposure controls

Engineering measures

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information

Define procedures for safe handling and maintenance of controls. Educate and train workers in the hazards and control measures relevant to normal activities associated with this product. Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation. Drain down system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or subsequent recycle. Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

Personal protective

Equipment:

The provided information is made in consideration of the PPE directive (Council Directive 89/686/EEC) and the CEN European Committee for Standardisation (CEN) standards. Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Respiratory protection:



No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [Type A/Type P boiling point > 65°C (149°F)] meeting EN14387 and EN143.

Hand protection:



Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not





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a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35

mm depending on the glove make and model.

Eye protection: If material is handled such that it could be splashed into eyes, protective eyewear is

recommended. Approved to EU Standard EN166.

Skin and body protection: Skin protection is not ordinarily required beyond standard work clothes. It is good

practice to wear chemical resistant gloves.

Thermal hazards: Not applicable.

Environmental

exposure controls:Take appropriate measures to fulfill the requirements of relevant environmental

protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water. Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties Appearance Liquid at room temperature Colour Clear Odour Slight hydrocarbon Odour threshold Data not available pΗ Not applicable Pour point -9°C Method: ASTM D97 Initial boiling point and boiling range > 280 °C estimated value(s) 265 °C Method: ASTM D92 Flash point Evaporation rate Data not available Flammability (solid, gas) Data not available Upper explosion limit Typical 10 %(V) Lower explosion limit Typical 1 %(V) < 0,5 Pa (20 °C) estimated value(s) Vapour pressure Relative vapour density > 1 estimated value(s) Relative density 0,882 (15 °C) Density 882 kg/m3 (15,0 °C) Method: ASTM D1298 Water solubility Negligible Solubility in other solvents Data not available Partition coefficient: noctanol/water Pow: > 6(based on information on similar products) Auto-ignition temperature > 320 °C 108 mm2/s (40,0 °C) Method: ASTM D445 Viscosity, dynamic Viscosity, kinematic 11,8 mm2/s (100 °C) Method: ASTM D445 Not classified Explosive properties Oxidizing properties Data not available



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9.2 Other Information

Conductivity: This material is not expected to be a static accumulator.

Decomposition temperature: Data not available

* 10. STABILITY AND REACTIVITY

10.1 Reactivity

The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.

10.2 Chemical stability

Stable. No hazardous reaction is expected when handled and stored according to provisions.

10.3 Possibility of hazardous reactions

Reacts with strong oxidising agents.

10.4 Conditions to avoid

Extremes of temperature and direct sunlight.

10.5 Incompatible materials

Strong oxidising agents.

10.6 Hazardous decomposition products

Hazardous decomposition products are not expected to form during normal storage.

* 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Basis for assessment: Information given is based on data on the components and the toxicology of similar

products. Unless indicated otherwise, the data presented is representative of the product

as a whole, rather than for individual component(s).

Information on likely

routes of Exposure: Skin and eye contact are the primary routes of exposure although exposure may

occur following accidental ingestion.

Acute oral toxicity: LD50 rat: > 5.000 mg/kg. Remarks: Expected to be of low toxicity.

Acute inhalation toxicity: Not considered to be an inhalation hazard under normal conditions of use.

Acute dermal toxicity: LD50 Rabbit: > 5.000 mg/kg Remarks: Expected to be of low toxicity

Skin corrosion/irritation: Expected to be slightly irritating. Prolonged or repeated skin contact without proper

cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Serious eye damage/irritation: Expected to be slightly irritating.

Respiratory or skin

sensitisation: For respiratory and skin sensitisation: Not expected to be a sensitizer.

Germ cell mutagenicity: Not considered a mutagenic hazard.

Carcinogenicity: Not expected to be carcinogenic. Product contains mineral oils of types shown to be non-

carcinogenic in animal skinpainting studies., Highly refined mineral oils are not classified

as carcinogenic by the International Agency for Research on Cancer (IARC).





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Material	GHS/CLP Carcinogenicity classification
Highly refined mineral oil	No carcinogenicity classification.

Reproductive and

developmental toxicity: Not expected to impair fertility., Not expected to be a developmental toxicant.

Summary on evaluation of the CMR properties

Germ cell mutagenicity-

Assessment: This product does not meet the criteria for classification in categories 1A/1B.

Carcinogenicity -

Assessment: This product does not meet the criteria for classification in categories 1A/1B.

Reproductive toxicity -

Assessment This product does not meet the criteria for classification in categories 1A/1B.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Basis for assessment

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Toxicity to fish (Acute

toxicity): Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l

Toxicity to crustacean

Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (Acute toxicity):

Toxicity to algae/aquatic

plants (Acute toxicity): Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic

Data not available toxicity):

Toxicity to crustacean

(Chronic toxicity): Data not available

Toxicity to microorganisms

(Acute toxicity): Data not available

12.2 Persistence and degradability

Expected to be not readily biodegradable., Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.

12.3 Bioaccumulative potential

Contains components with the potential to bioaccumulate.

12.4 Mobility in soil

Liquid under most environmental conditions., If it enters soil, it will adsorb to soil particles and will not be mobile. Remarks: Floats on water.

12.5 Result of PBT and vPvB assessment

This mixture does not contain any REACH registered substances that are assessed to be a PBT or a vPvB.





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12.6 Other adverse effects

Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities., Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential. Poorly soluble mixture., May cause physical fouling of aquatic organisms. Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product: Waste product should not be allowed to contaminate soil or ground water, or be

disposed of into the environment. Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional, national, and local laws and

regulations. Local regulations may be more stringent than regional or

national requirements and must be complied with.

Dispose in accordance with prevailing regulations, preferably to a recognized Contaminated packaging:

> collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional,

national, and local laws and regulations.

Local legislation

waste catalogue: EU Waste Disposal Code (EWC):

Waste code: 13 02 05*

Remarks: Classification of waste is always the responsibility of the end user.

14. TRANSPORT INFORMATION

14.1 UN number

ADN: Not regulated as a dangerous good ADR: Not regulated as a dangerous good RID: Not regulated as a dangerous good IMDG: Not regulated as a dangerous good IATA: Not regulated as a dangerous good

14.2 Proper shipping name

ADN: Not regulated as a dangerous good ADR: Not regulated as a dangerous good RID: Not regulated as a dangerous good IMDG: Not regulated as a dangerous good IATA: Not regulated as a dangerous good

14.3 Transport hazard class

ADN: Not regulated as a dangerous good ADR: Not regulated as a dangerous good RID: Not regulated as a dangerous good IMDG: Not regulated as a dangerous good IATA: Not regulated as a dangerous good

14.4 Packing group

ADN: Not regulated as a dangerous good

CDNI Inland Water Waste Agreement: NST 3411 Mineral Lubricating Oils

ADR: Not regulated as a dangerous good RID: Not regulated as a dangerous good IMDG: Not regulated as a dangerous good IATA: Not regulated as a dangerous good



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14.5 Environmental hazards

ADN: Not regulated as a dangerous good ADR: Not regulated as a dangerous good RID: Not regulated as a dangerous good IMDG: Not regulated as a dangerous good

14.6 Special precautions for user

Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

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

Pollution Category:
Ship Type:
Product Name:
Special Precaution:
Not applicable.
Not applicable.
Not applicable.

Additional Information: MARPOL Annex 1 rules apply for bulk shipments by sea.

15. REGULATORY INFORMATION

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

REACH - List of substances subject to authorisation

(Annex XIV): Product is not subject to Authorisation under REACH.

Water contaminating class

(Germany): WGK 1 slightly water endangering

Remarks: Classification according VwVwS, Annex 4. Remarks: Swiss Class B, (Appendix 1, ordinance 453 / 2010)

Volatile organic compounds: 0 %

The components of this product are reported in the following inventories:

EINECS/ELINCS/EC : All components listed or polymer exempt.

TSCA: All components listed.

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

★ 16. OTHER INFORMATION

Abbreviations and acronyms:

ACGIH = American Conference of Governmental Industrial Hygienists

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

ASTM = American Society for Testing and Materials

BEL = Biological exposure limits

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes

CAS = Chemical Abstracts Service

CEFIC = European Chemical Industry Council

CLP = Classification Packaging and Labelling

COC = Cleveland Open-Cup

DIN = Deutsches Institut fur Normung

DMEL = Derived Minimal Effect Level

DNEL = Derived No Effect Level

DSL = Canada Domestic Substance List

EC = European Commission

EC50 = Effective Concentration fifty





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ECETOC = European Center on Ecotoxicology and

Toxicology Of Chemicals

ECHA = European Chemicals Agency

EINECS = The European Inventory of Existing Commercial

Chemical Substances

EL50 = Effective Loading fifty

ENCS = Japanese Existing and New Chemical Substances

Inventory

EWC = European Waste Code

GHS = Globally Harmonised System of Classification and

Labelling of Chemicals

IARC = International Agency for Research on Cancer

IATA = International Air Transport Association

IC50 = Inhibitory Concentration fifty

IL50 = Inhibitory Level fifty

IMDG = International Maritime Dangerous Goods

INV = Chinese Chemicals Inventory

IP346 = Institute of Petroleum test method N° 346 for the

determination of polycyclic aromatics DMSO-extractables

KECI = Korea Existing Chemicals Inventory

LC50 = Lethal Concentration fifty

LD50 = Lethal Dose fifty per cent.

LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading

LL50 = Lethal Loading fifty

MARPOL = International Convention for the Prevention of

Pollution From Ships

NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level

OE_HPV = Occupational Exposure - High Production Volume

PBT = Persistent, Bioaccumulative and Toxic

PICCS = Philippine Inventory of Chemicals and Chemical Substances

PNEC = Predicted No Effect Concentration

REACH = Registration Evaluation And Authorisation Of Chemicals

RID = Regulations Relating to International Carriage of Dangerous Goods by Rail

SKIN_DES = Skin Designation

STEL = Short term exposure limit

TRA = Targeted Risk Assessment

TSCA = US Toxic Substances Control Act

TWA = Time-Weighted Average

vPvB = very Persistent and very Bioaccumulative

Further information

Other information:

No Exposure Scenario annex is attached to this safety data sheet as it is a non-classified mixture containing no hazardous substances. Under Article 31 of REACH, a SDS is not required for this product. Therefore, this SDS has been created on a voluntary basis to pass on potentially relevant information required under Article 32.

Disclaimer:

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.

The asterisk (*) on the left side indicate the respective changes from the previous version.

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