



**DIAMOND
CLEAR**
PURITY YOU CAN SEE

SAFETY DATA SHEET

Diamond Clear Vacuum Pump Oil ISO 46

Prepared in accordance with OSHA 29 CFR 1910.1200 (2012) and GHS

SDS NO. DC-01 REVISION 01 ISSUED August 22, 2026 SUPERSEDES None, initial release

01 IDENTIFICATION

Product name	Diamond Clear Vacuum Pump Oil ISO 46
Synonyms	Vacuum pump fluid; rotary vane pump oil; high vacuum pump oil, ISO VG 46
Product codes	DC-01Q (1 U.S. quart), DC-01G (1 U.S. gallon); bulk pail, drum and tote
SDS number	DC-01, Revision 01
Recommended use	Working fluid and lubricant for oil-sealed rotary vane, rotary piston and oil-flooded rotary vacuum pumps in HVACR service, laboratory and light industrial duty.
Restrictions on use	Not for diffusion pumps. Not for pumps in oxygen, chlorine or other strongly oxidizing gas service. Not for breathing air compressors or medical devices. Uses other than the recommended use are the responsibility of the user.

Supplier	Diamond Clear
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02 HAZARD IDENTIFICATION

Classification, OSHA HCS 2012 and GHS

This product has been evaluated against the criteria of 29 CFR 1910.1200 Appendix A (health) and Appendix B (physical) and is **not classified as hazardous**. It is a severely hydrotreated, high viscosity mineral oil with negligible vapor pressure at ambient temperature.

Signal word	None required
Pictograms	None required
Hazard statements	None required
Precautionary statements	None required

Hazards not otherwise classified and use-related hazards

Used oil. In vacuum service this fluid absorbs water, refrigerant residue and corrosive acids from the systems it evacuates. Used oil drained from a pump may be irritating to skin and eyes and should be handled with gloves and eye protection regardless of the condition of the new fluid.

High pressure injection. Fluid escaping under pressure from a fitting or hose can penetrate skin. An injection injury is a medical emergency even if the wound looks minor. See Section 4, note to physician.

Mist and hot surfaces. Prolonged or repeated skin contact may cause drying or dermatitis. Oil mist generated at the pump exhaust or by hot surfaces is subject to the occupational exposure limits in Section 8. Thermal decomposition products are hazardous, see Section 10.

03 COMPOSITION AND INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	CONCENTRATION, WT %
Distillates (petroleum), hydrotreated heavy paraffinic, severely refined base oil	64742-54-7	>99
Ashless performance additive package, rust and oxidation inhibitors, proprietary	Trade secret	<1

The base oil is severely hydrotreated and contains less than 3 percent DMSO extractable material by IP 346, so it is not classified as a carcinogen under the criteria applied to petroleum base oils. The additive package contains no zinc, no barium, no chlorine and no heavy metals. Exact concentrations are withheld as a trade secret under 29 CFR 1910.1200(i).



04 FIRST AID MEASURES

Eye contact	Flush with clean water for at least 15 minutes, holding the eyelids open. Remove contact lenses if present and easy to do. Seek medical attention if irritation persists.
Skin contact	Wash with soap and water. Remove contaminated clothing and laundry before reuse. Seek medical attention if irritation develops or persists.
Inhalation	Not an expected route of exposure at ambient temperature. If mist or fume from heated product causes discomfort, move the person to fresh air. Seek medical attention if symptoms persist.
Ingestion	Do not induce vomiting, aspiration of mineral oil into the lungs can cause chemical pneumonitis. Rinse mouth. Never give anything by mouth to an unconscious person. Seek medical attention.

Most important symptoms and effects

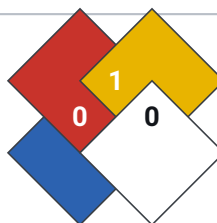
Direct eye contact may cause transient mild irritation. Prolonged or repeated skin contact may cause drying, defatting or dermatitis. No acute systemic effects are expected by any route of exposure under normal conditions of use.

Note to physician

High pressure injection of any hydrocarbon fluid through the skin is a surgical emergency. The wound may appear trivial while extensive subdermal damage develops. Early debridement by a surgeon experienced with injection injuries is indicated. Do not treat by observation alone. Treat other exposures symptomatically.

05 FIRE FIGHTING MEASURES

Suitable media	Dry chemical, carbon dioxide, alcohol resistant foam, water fog.
Unsuitable media	Do not use a straight water jet, it will scatter burning oil.
Combustion products	Carbon monoxide, carbon dioxide, aldehydes, ketones and unidentified organic compounds in dense black smoke.
Protective equipment	Firefighters should wear self contained breathing apparatus and full structural turnout gear. Cool fire exposed containers with water spray. Burning characteristics are those of a Class IIIB combustible liquid, flash point 232 °C (450 °F).



NFPA 704. Health 0, Flammability 1, Instability 0, Special none.

HMIS III. Health 0, Flammability 1, Physical hazard 0, PPE B for service handling of used oil.

The product itself is difficult to ignite. A wick or mist is normally required to sustain combustion below the flash point.

06 ACCIDENTAL RELEASE MEASURES

Personal precautions	Spilled oil is a slipping hazard. Wear oil resistant gloves and footwear. Ventilate if the product is hot and misting. Keep unnecessary personnel away.
Environmental precautions	Prevent entry to drains, sewers, soil and surface water. Oil forms a sheen on water at very low concentration. Report releases as required by federal, state and local regulations.

Containment and cleanup	Stop the release at the source if safe to do so. Dike large spills with inert material. Absorb with clay, sand or commercial oil absorbent, sweep or shovel into a labeled container and dispose per Section 13. Wash the area with detergent and water; the residual film is slippery.
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07 HANDLING AND STORAGE

Safe handling	No special measures are required for the new fluid beyond good industrial hygiene practice. Avoid prolonged or repeated skin contact. Wash hands after handling. Handle used, drained oil with gloves and eye protection, it contains water and corrosive acids drawn from the evacuated system. Do not use pressurized air to empty containers.
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Storage conditions	Store in the original sealed container, indoors, between 40 and 100 °F (4 and 38 °C), away from moisture, sunlight and strong oxidizers. The fluid absorbs atmospheric moisture from an open container and absorbed water degrades vacuum performance. Reseal immediately after pouring. Shelf life 60 months unopened.
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Incompatible materials	Strong oxidizing agents, see Section 10.
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08 EXPOSURE CONTROLS AND PERSONAL PROTECTION

The product has negligible vapor pressure at room temperature and presents no inhalation exposure in normal use. The limits below apply to mineral oil mist, which can be generated at the exhaust of a running vacuum pump or by hot surfaces.

COMPONENT	LIMIT	AGENCY AND BASIS
Oil mist, mineral	5 mg/m ³ TWA	OSHA PEL, 29 CFR 1910.1000 Table Z-1
Oil mist, mineral, inhalable fraction	5 mg/m ³ TWA	ACGIH TLV
Oil mist, mineral	5 mg/m ³ TWA, 10 mg/m ³ STEL	NIOSH REL
Engineering controls	General ventilation is adequate for normal use. Provide local exhaust where the pump discharges visible mist indoors, or fit an exhaust mist filter to the pump.	Skin Nitrile or other oil resistant gloves for used oil service and for prolonged contact with new oil. Wash contaminated clothing before reuse.
Eye and face	Safety glasses with side shields for routine handling. Goggles when draining hot used oil.	Respiratory None required in normal use. If mist exceeds the exposure limit, use a NIOSH approved respirator with R or P series particulate filters.

09 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Water clear, bright and clear liquid	Vapor pressure	Below 1 × 10 ⁻³ torr at 20 °C
Odor	Mild petroleum	Vapor density, air = 1	Greater than 5
Odor threshold	Not determined	Specific gravity at 15.6 °C	0.866
pH	Not applicable	Solubility in water	Negligible, floats on water
Pour point	-15 °C (5 °F)	Partition coefficient	log K _{ow} greater than 6, base oil
Initial boiling point	Above 315 °C (600 °F)	Autoignition temperature	Above 315 °C (600 °F)
Flash point	232 °C (450 °F), Cleveland Open Cup	Decomposition temperature	Not determined
Evaporation rate	Negligible	Kinematic viscosity	44.0 cSt at 40 °C, 6.6 cSt at 100 °C
Flammability, solid or gas	Not applicable	VOC content	Negligible
Flammable limits in air	Not determined		

10 STABILITY AND REACTIVITY

Reactivity	Not reactive under normal conditions.	Conditions to avoid	Open flame, sustained temperatures above the flash point, contact with strong oxidizers.
Chemical stability	Stable at ambient temperature and pressure.		
Hazardous reactions	Hazardous polymerization does not occur.	Incompatible materials	Strong oxidizing agents such as liquid chlorine, concentrated oxygen, sodium hypochlorite and hydrogen peroxide.
		Decomposition products	Thermal decomposition yields carbon monoxide, carbon dioxide, aldehydes and other partially oxidized hydrocarbons.

11 TOXICOLOGICAL INFORMATION

Data are read across from severely hydrotreated paraffinic base oils of the same CAS number. The product is not classified for any health hazard end point.

END POINT	RESULT	BASIS
Acute oral toxicity	LD50, rat, greater than 5,000 mg/kg	Not classified
Acute dermal toxicity	LD50, rabbit, greater than 2,000 mg/kg	Not classified
Acute inhalation toxicity	LC50, rat, 4 h, greater than 5 mg/L, mist	Not classified
Skin corrosion or irritation	Minimal irritation, rabbit	Not classified
Eye damage or irritation	Minimal irritation, rabbit	Not classified

END POINT	RESULT	BASIS
Respiratory or skin sensitization	Not a sensitizer, guinea pig	Not classified
Germ cell mutagenicity	Negative, modified Ames test on base oil	Not classified
Carcinogenicity	Base oil severely refined, IP 346 DMSO extract below 3 percent	Not listed by IARC, NTP or OSHA
Reproductive toxicity	No effects reported for highly refined base oils	Not classified
STOT, single and repeated exposure	No target organ effects at relevant exposures	Not classified
Aspiration hazard	Kinematic viscosity 44 cSt at 40 °C, above the 20.5 cSt classification threshold	Not classified

Chronic effects. Prolonged or repeated skin contact with any mineral oil can cause drying, defatting and oil acne or folliculitis. Used oil from vacuum service contains acids and moisture and may be more irritating than the new fluid.

12 ECOLOGICAL INFORMATION

Aquatic toxicity	LL50, fish, 96 h, greater than 100 mg/L, water accommodated fraction. Practically non-toxic to aquatic organisms on acute exposure.	Bioaccumulative potential	High log K _{ow} suggests a potential to bioaccumulate, but low water solubility and high molecular weight limit bioavailability.
Persistence and degradability	Inherently biodegradable. Not readily biodegradable by OECD 301 criteria.	Mobility in soil	Low. The product is insoluble, floats on water and adsorbs to soil.
		Other adverse effects	An oil film on water reduces oxygen transfer and can coat and kill aquatic organisms and waterfowl. Prevent any release to the environment.

13 DISPOSAL CONSIDERATIONS

Recycle used oil through a licensed used oil collector wherever the service exists; used vacuum pump oil is accepted in the same stream as used crankcase oil. As supplied, the product is not a RCRA listed hazardous waste. Oil drained from vacuum service contains water and acids and may pick up regulated contaminants from the systems it evacuates; the generator is responsible for characterizing used oil before disposal. Do not discharge to drains, soil or surface water. Empty containers retain residue; drain thoroughly and offer for recycling. Do not cut, weld or heat empty containers. Dispose in accordance with all federal, state and local regulations.

14 TRANSPORT INFORMATION

	US DOT, 49 CFR	IATA, AIR	IMDG, VESSEL
UN number	Not regulated	Not regulated	Not regulated
Proper shipping name	Petroleum lubricating oil, not restricted	Not restricted	Not restricted
Hazard class and packing group	None	None	None
Marine pollutant	No	No	No

Flash point 232 °C places the product well outside the Class 3 flammable liquid criteria of every modal regulation. No placard, label or shipping paper entry is required.

15 REGULATORY INFORMATION

TSCA, United States	All components are listed on or exempt from the TSCA Inventory and are active.	SARA 311 and 312	Not a hazardous chemical under 29 CFR 1910.1200, no hazard categories apply.
DSL, Canada	All components are listed on the Domestic Substances List.	SARA 313	Contains no toxic chemicals above de minimis levels subject to reporting.
CERCLA, 40 CFR 302	No reportable quantity has been assigned to this product or its components.	California Proposition 65	This product does not contain any substance known to the State of California to cause cancer, birth defects or other reproductive harm at levels requiring a warning.
SARA 302	Contains no extremely hazardous substances.	WHMIS 2015, Canada	Not classified as a hazardous product.

16 OTHER INFORMATION, PREPARATION AND REVISION

Issue date	August 22, 2026
Revision	01, initial release. Supersedes none.
Prepared by	Diamond Clear Technical Services, (833) 378-7838, hello@dcvacoil.com
Next scheduled review	August 2029, or upon receipt of significant new hazard information, whichever comes first.

Key to abbreviations. ACGIH, American Conference of Governmental Industrial Hygienists. CAS, Chemical Abstracts Service. COC, Cleveland Open Cup. DMSO, dimethyl sulfoxide. GHS, Globally Harmonized System. HMIS, Hazardous Materials Identification System. IARC, International Agency for Research on Cancer. LD50 and LC50, median lethal dose and concentration. NFPA, National Fire Protection Association. NIOSH, National Institute for Occupational Safety and Health. NTP, National Toxicology Program. OEL, occupational exposure limit. PEL, permissible exposure limit. REL, recommended exposure limit. STEL, short term exposure limit. STOT, specific target organ toxicity. TLV, threshold limit value. TWA, time weighted average. WAF, water accommodated fraction.

USED OIL NOTICE

New Diamond Clear Vacuum Pump Oil is water clear. The oil darkens in service as it oxidizes, and used oil drained from a vacuum pump also carries water, refrigerant residue and acid drawn from the evacuated system. Treat all drained oil as contaminated: wear gloves and eye protection, keep it out of drains and soil, and recycle it through a licensed used oil collector.

The information in this Safety Data Sheet is believed to be accurate as of the date of issue and is given in good faith, based on data for this product and for severely hydrotreated paraffinic base oils of the same CAS number. It relates only to the specific material designated and may not be valid for this material used in combination with any other material or in any process. Because conditions of use are outside the supplier's control, the user is responsible for determining the suitability of the product for each application and for compliance with applicable federal, state and local regulations. No warranty, express or implied, is made.