



The Ultimate Lubricant

28

DESCRIPTION:

Omega 28 is a totally new and exclusive Fluoroether Synthetic Grease that displays exemplary inertness to many chemicals, coupled with exceptional oxidative and thermal stability - even under arduous application environments. It will even resist hydrocarbon fuels and most solvents, while providing exceptional lubrication qualities.

EXEMPLARY STABILITY:

Omega 28 is perfect for virtually any hostile operating environment, including radiation exposure, since the advanced chemistry employed provides this in-novative Omega grease with superior resistance and the ability to withstand the harshest operating conditions including exposure and/or direct contact with:

- Nitrogen Tetroxide
- Oxygen
- Ethyl Alcohol
- Aniline
- Ammonia
- Hydrazine
- Fluorine
- Unsymmetrical Dimethylhydrazine
- Turbine Fuel
- Boiling Sulphuric Acid
- Boiling Nitric Acid
- Molten Sodium Hydroxide
- Diethylenetriamine
- up to 90% Hydrogen Peroxide

It is designed and engineered for critical and previously "impossible" lubricating conditions that conventional greases cannot tolerate, such as lubricating pipe threads for high-pressure oxygen pipes, and for seals, threads, joints and stems used for liquids, gas and strenuous vacuum service environments.

Omega 28 features such highly stable properties that thermal degradation will generally not take place until direct contact temperatures exceeding 500°F (260°C) are encountered. It provides excellent lubrication service for severe applications where chemical resistance and resistance to fuel is required, and where superior film strength needs to be maintained at high temperatures.

WIDE RANGE OF APPLICATIONS:

Omega 28 can be used for a wide range of applications which demand the highest performance lubrication, including aeronautical equipment, satellites, aircraft components, ground support equipment, etc.

Suggested applications include:

- Lubrication of mining, plastic compounding and oil-well drilling equipment.
- Lubrication of O-Rings, plastics & ceramics, couplings, instruments, valves, circuit breakers & railway switch machine bearings.
- Food Processing, Canning & Textile equipment & machinery.
- Lubrication of valves and other fittings used in gaseous, liquid oxygen and reactive chemical processing.
- Anti-Seize applications and as a releasing agent and gasket sealant.

- Lubrication of plug valves, pressure release valves and pumping equipment handling highly reactive or corrosive liquids.
- Lubrication of equipment and instruments used in high vacuum applications, cryogenic apparatus and pneumatic systems.
- Lubrication of bearings used in hot air fans in chemical drying processes and sealed roller bearings of track & chain conveyors in high temperature environments.
- Lubrication of shaft bearings in petrochemical plants that come into contact with aromatic hydrocarbons.
- Lubrication of rolling contact bearings and fan bearings used to cool solid state electronic systems including gyroscopes.
- Lubrication of fuel pump bearings pumping jet fuel.

Omega 28 is also eminently suitable for many critical applications in the Drugs & Pharmaceuticals industry, the manufacture of Computer Chips, in Oxygen Producing plants, Automotive Manufacture (where Painting & Drying Ovens and Conveyors are used), in Electroplating plants, Fertilizer Factories, in Wooden Chipboard Manufactories and as an oxygen pipe sealant in Hospitals, Clinics, Hospices, etc.

TYPICAL DATA:

TEST	ASTM TEST METHOD	TEST RESULT
Base Fluid:-		
Viscosity @ 100°F(37.8°C), cSt	D-445	500
Viscosity @ 210°F(98.9°C), cSt	D-445	43
Viscosity Index	D-2270	144
Flash Point	D-92	None
Pour Point	D-97	-20°F (-28.8°C)
Vapour Pressure	Knudsen Method	
	@ 100°F (37.8°C)	6x10 ⁻⁹ torr
	@ 500°F (260°C)	3x10 ⁻⁴ torr
Evaporation, 5-1/2hours @ 400°F (204°C)	D-972	Less that 1%
Unworked Penetration	D-217	249
Worked Penetration (60Times) @ 77°F (25°C)	D-217	265-295
Oil Separation, 24hrs @ 302°F (150°C)	D-1742	7.5%
Evaporation, 22hrs @ 302°F (150°C)	D-2595	1.1%
Neutralization Number	D-974	0.11mg KOH/g
Specific Gravity @ 25°C (77°F)	---	1.93
Copper Corrosion	D-130	2C, No corrosion
NLGI Grade	---	#2
Operating Temperature Range		-30°C to 260°C (-22°F to 500°F)
Color		Off White

CAUTIONARY NOTE:

Since Omega 28 provides superior lubricity when used as a thread sealant, the use of the torque wrench is recommended when mounting nuts on treated threads to avoid over-tightening. In addition, inhaling vapours from Omega 28 at high temperatures over 480°F (250°C) (such as when smoking) should be avoided.

When applying Omega 28 for the first time, parts to be lubricated should be dismantled and thoroughly purged (cleaned) of any existing greases or oils, using chlorinated solvents in an agitated bath and full soak as Omega 28's chemistry is incompatible with ordinary greases.

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

1.1. Product identifier

Product name: Omega 28
Container size: 100 g ****Manufactured in USA****

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

Application: Grease.

1.3. Details of the supplier of the safety data sheet

Supplier: EU importer: Sovereign Lubricants (UK) Ltd, Crowtrees Lane,
Rastrick, West Yorkshire, HD6 3LZ
T: 01484 718674 - F: 01484 400164
enquiries@sovereign-omega.co.uk
www.sovereign-omega.co.uk

Manufacturer: Omega Manufacturing Division
13th floor, Unit B, PAX Tower, 609 Eonju-ro
Gangnam-Gu, Seoul
Korea 06108
Tel:+82-2-2088-3560
Fax:+82-2-513-3567

1.4. Emergency telephone number

Emergency telephone: NHS: 111

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP: The product is not classified.

2.2. Label elements

Safety data sheet available on request.

2.3. Other hazards

Other: Prolonged or repeated contact with skin may cause redness, itching, irritation and eczema/chapping. The harmful effects may increase in used grease.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Only classified substances above threshold limits are shown.

All substances in the product are either registered or exempt from registration under REACH.

CLP:

<u>%:</u>	<u>CAS-No.:</u>	<u>EC No.:</u>	<u>REACH Reg. No.:</u>	<u>Chemical name:</u>	<u>Hazard classification:</u>	<u>Notes:</u>
1-5	7632-00-0	231-555-9	01-2119471836-27-XXXX	Sodium nitrite	Ox. Sol. 3;H272 Acute Tox. 3;H301 Aquatic Acute 1;H400	

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References: The full text for all hazard statements is displayed in section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation: Move into fresh air and keep at rest. In case of persistent throat irritation or coughing: Seek medical attention and bring these instructions.

Skin contact: Remove contaminated clothing immediately and wash skin with soap and water. In case of rashes, wounds or other skin disorders: Seek medical attention and bring along these instructions.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. Remove any contact lenses and open eyelids widely. If irritation persists: Seek medical attention and bring along these instructions.

Ingestion: Immediately rinse mouth and drink plenty of water. Keep person under observation. If person becomes uncomfortable seek hospital and bring these instructions.

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

Symptoms/effects: May cause temporary eye irritation. See section 11 for more detailed information on health effects and symptoms.

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

Medical attention/treatments: Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media: Extinguish with carbon dioxide or dry powder.

5.2. Special hazards arising from the substance or mixture

Specific hazards: The product is non-combustible. If heated, corrosive and toxic vapours/gases may be formed.
Fire creates: Hydrogen fluoride (HF).

5.3. Advice for firefighters

Protective equipment for fire-fighters: Use air-supplied respirator during fire fighting.

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SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Avoid contact with skin and eyes. Follow precautions for safe handling described in this safety data sheet.

6.2. Environmental precautions

Environmental precautions: Do not discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Absorb spillage with oil-absorbing material. Clean contaminated area with oil-removing material.

6.4. Reference to other sections

References: For personal protection, see section 8.
For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Safe handling advice: Observe good chemical hygiene practices. Avoid prolonged and repeated contact with grease, particularly used grease. Always remove grease with soap and water or skin cleaning agent, never use organic solvents.

Technical measures: Work practice should minimise contact.

Technical precautions: When working with heated grease, mechanical ventilation may be required.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures for safe storage: No special precautions.

Storage conditions: Store in tightly closed original container.

7.3. Specific end use(s)

Specific use(s): No information available.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

No occupational exposure limit assigned.

8.2. Exposure controls

<u>Engineering measures:</u>	Provide adequate ventilation. When working with heated grease, mechanical ventilation may be required. Provide access to washing facilities incl. soap, skin cleanser and fatty cream.
<u>Personal protection:</u>	Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.
<u>Respiratory equipment:</u>	In case of inadequate ventilation use suitable respirator. Use respiratory equipment with particle filter, type P2.
<u>Hand protection:</u>	Risk of contact: Wear protective gloves. Nitrile gloves are recommended. Breakthrough time: > 4h; Thickness: > 0.3 mm Other types of gloves can be recommended by the glove supplier.
<u>Eye protection:</u>	Risk of contact: Wear goggles/face shield.
<u>Hygiene measures:</u>	Wash hands after handling. Change contaminated clothing.
<u>Environmental Exposure Controls:</u>	Not available.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance: Grease.
Colour: White
Odour: Not available.
pH: Not relevant.
Melting point / freezing point: > 260°C
Boiling point: Not available.
Flash point: Not available.
Evaporation rate: Not relevant.
Flammability (solid, gas): Not available.
Explosive limits Not available.
Vapour pressure: Not relevant.
Vapour density: Not relevant.
Relative density: 1.98
Solubility: Insoluble in water.
Partition coefficient (n-octanol/water): Not available.
Auto-ignition temperature (°C): Not available.
Decomposition temperature (°C): Not available.
Viscosity: Kinematic viscosity: 400 mm²/s (20°C).
Explosive properties: Not available.
Oxidising properties: Not available.

9.2. Other information

Other data: -

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SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity: Not reactive.

10.2. Chemical stability

Stability: Stable under normal temperature conditions.

10.3. Possibility of hazardous reactions

Hazardous Reactions: None known.

10.4. Conditions to avoid

Conditions to avoid None specific.

10.5. Incompatible materials

Incompatible materials: Strong oxidising substances.

10.6. Hazardous decomposition products

Hazardous decomposition products: None in particular.

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SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute Toxicity (Oral): Based on available data, the classification criteria are not met.

Acute Toxicity (Dermal): Based on available data, the classification criteria are not met.

Acute Toxicity (Inhalation): Based on available data, the classification criteria are not met.

Skin Corrosion/Irritation: Based on available data, the classification criteria are not met.

Serious eye damage/irritation: Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive Toxicity: Based on available data, the classification criteria are not met.

STOT - Single exposure: Based on available data, the classification criteria are not met.

STOT - Repeated exposure: Based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

Inhalation: Inhalation of vapours formed during heating of the product will irritate the respiratory system and provoke coughing.

Skin contact: Degreasing. Prolonged or frequent contact may cause redness, itching, eczema and skin cracking.

Eye contact: Direct contact may irritate.

Ingestion: Contains nitrite. Symptoms of nitrite poisoning are headache, nausea, dizziness, vomiting and bluish colouring of skin and mucous membrane and in serious cases, unconsciousness and death.

Specific effects: Prolonged or repeated contact with used grease may cause serious skin diseases, such as dermatitis. The harmful effects may increase in used grease.

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SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity: Greases are generally hazardous to the environment.

The product contains a substance which is very toxic to aquatic organisms.
Sodium nitrite: $0,1 < LC50 \leq 1$ mg/l

12.2. Persistence and degradability

Degradability: The product is not expected to be biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential: No data available on bioaccumulation.

12.4. Mobility in soil

Mobility: No data available.

12.5. Results of PBT and vPvB assessment

PBT/vPvB: No data available.

12.6. Other adverse effects

Other adverse effects: None known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Dispose of waste and residues in accordance with local authority requirements. Waste is classified as hazardous waste.

Waste from residues: EWC-code: 12 01 12

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SECTION 14: TRANSPORT INFORMATION

The product is not regulated as dangerous goods under IMDG Code, IATA-DGR and ADR/RID.

14.1. UN number

UN-No: Not regulated.

14.2. UN proper shipping name

Proper Shipping Name: Not regulated.

14.3. Transport hazard class(es)

Class: Not regulated.

14.4. Packing group

PG: Not regulated.

14.5. Environmental hazards

Marine pollutant: Not regulated.

Environmentally Hazardous substance: Not regulated.

14.6. Special precautions for user

Special precautions: Not regulated.

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

Transport in bulk: Not regulated.

SECTION 15: REGULATORY INFORMATION

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

National regulation: 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 with amendments.
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), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, with amendments.
The Control of Substances Hazardous to Health Regulations 2002 (S.I. 2002 No. 2677) with amendments.
EH40/2005, Workplace exposure limits 2005, with amendments.
The List of Wastes (England) (Amendment) Regulations 2005. (SI 2005 No. 895).

15.2. Chemical Safety Assessment

CSA status: No information available.

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SECTION 16: OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions.

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Abbreviations and acronyms PBT = Persistent, Bioaccumulative and Toxic.
used in the safety data sheet: vPvB = very Persistent and very Bioaccumulative.

Key literature references and sources for data: None.

Additional information: None.

Wording of H-statements:

H272	May intensify fire; oxidiser.
H301	Toxic if swallowed.
H400	Very toxic to aquatic life.

The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.

Made by DHI - Environment and Toxicology, Agern Allé 5, DK-2970 Hørsholm, Denmark.
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