

SAFETY DATA SHEET (SDS)

PRODUCT NAME : GEARBOX LUBRICANT - DRYNERT 25/6

1. Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product name: Drynert 25/6
Other means of identification: None
Item numbers: H113-12-021, H113-12-022, H113-12-025

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

Identified uses: Lubricant
Uses advised against: Not available

1.3 Details of the supplier of the safety data sheet.

UK contact details

Edwards, Innovation Drive, Burgess Hill, West Sussex,
RH15 9TW, United Kingdom

General enquiries
Tel: +44 (0)8459 212223
Email: info@edwardsvacuum.com

US contact details

Edwards, 6416 Inducon Drive West, Sanborn,
New York, 14132, USA

General enquiries
Toll Free: 1-800-848-9800

1.4 Emergency telephone number

Chemtrec: 1-800-424-9300

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS classification: Mixture.
Classification according to
Regulation (EC) No. 1272/2008: Not classified.
Classification according to
Directive 1999/45/EC: Not classified.

2.2 Label elements

Hazard pictograms: Not applicable.
Signal words: Not applicable.
Hazard statements: Not applicable.
Precautionary statements: Not applicable.

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2.3 Other hazards

PBT criteria: Not applicable.

vPvB criteria: Not applicable.

Other hazards which do not result in a classification:

Thermal decomposition occurs at temperatures > 290 °C / 554 °F producing toxic and corrosive gases including gaseous Hydrogen Fluoride (HF) and Fluorophosgene.

3. Composition/Information on Ingredients

3.1 Substance

Not applicable.

3.2 Mixtures

Ingredient	% Weight	CAS No	Hazard class*	Risk phrase / Hazard Statements*
1-Propene, 1,1,2,3,3,3-hexafluoro-, oxidized, polymd	95	69991-67-9	Not applicable	Not applicable
Perfluoropolyethers derivative	5	370097-12-4	Not applicable	Not applicable

*Hazard class, Risk phrase and Hazard Statements. These columns are only completed for ingredients which are classified as hazardous under EU Directive No 1272/2008 (as amended) and are present in sufficient concentration to make the overall substance hazardous. In all other situations, the column will be completed as "Not applicable".

4. First Aid Measures

4.1 Description of first aid measures

Eyes: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Continue to rinse for at least 15 minutes. Seek medical attention if symptoms persist.

Skin: Wash skin with soap and plenty of water. Seek medical attention if symptoms persist.

Ingestion/Oral: If swallowed, give one to two glasses water to drink, and seek medical assistance. DO NOT give anything to drink to an unconscious person. Do not induce vomiting. Seek medical attention if symptoms persist.

Inhalation: Not expected. If high concentrations of fumes are inhaled following overheating or combustion, remove to fresh air. If breathing problems occur, a qualified individual should administer oxygen or artificial respiration as indicated. Seek immediate medical attention.

General advice: None.

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4.2 Most important symptoms and effect, both acute and delayed

Potential acute health effects:

Eyes:	Irritation and redness.
Skin:	Irritation and redness.
Ingestion / Oral:	Nausea, vomiting and diarrhoea.
Inhalation:	None known.
Over-exposure symptoms:	
Eyes:	Not available.
Skin:	Not available.
Ingestion / Oral:	Not available.
Inhalation:	Not available.

4.3 Indication of any immediate medical attention and special treatment needed

Not available.

5. Fire Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media:	Water, powder, foam, dry chemical and Carbon Dioxide (CO ₂).
Unsuitable extinguishing media:	None.

5.2 Special hazards arising from the substance or mixture

Fire and explosion hazard:	The product is not flammable or explosive.
Hazardous combustion products	Thermal decomposition occurs at temperatures > 290 °C / 554 °F producing toxic and corrosive gases including gaseous Hydrogen Fluoride (HF) and Fluorophosgene.

5.3 Advice for fire-fighters

Special precautions for fire-fighters:	Evacuate all non-emergency personnel to a safe area. Approach upwind from the fire and protect the intervention team with a water spray. Water spray should also be used to keep containers and the surrounding area cool.
Special protective equipment for fire-fighters:	Fire-fighters should wear a Self-Contained Breathing Apparatus (SCBA) which meets appropriate standards operated in positive pressure mode and full turn out gear. If in close proximity, wear acid resistant protective clothing.

For Flammability Properties - see Section 9.

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6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Evacuate non-essential staff, or those not equipped with personal protective equipment. Turn leaking containers leakerside up to prevent the escape of the product if safe to do so. Avoid inhalation and contact with skin and eyes. Be aware that the spilt product may create slippery conditions.

For emergency responders: Ensure adequate ventilation and keep container/spilt product away from open flames, hot surfaces and sources of ignition. Personal protective equipment as described in Section 8 must be used.

6.2 Environmental precautions

Stop the leak if it is safe/possible to do so. Use dykes to prevent spreading. Avoid contaminating sewers, streams, rivers and other water courses with spilled product. Notify the appropriate authorities if significant contamination occurs.

6.3 Methods and material for containment and cleaning up

Put on the necessary personal protective equipment: refer to Section 8. Exercise caution; the area of the spill area may be slippery. Extinguish all ignition sources and evacuate the area. Absorb material onto vermiculite, dry sand, earth or similar inert absorbent. Place spilled material into covered container for disposal. Use a suitable cleaning solution to clean up any remaining product. Dispose of according to applicable local, state and federal regulations. Do not flush into surface water or sanitary sewer system.

6.4 Reference to other sections

Refer to Section 8 for information on personal protective equipment.

Refer to Section 13 for information on disposal considerations.

7. Handling and Storage

7.1 Precautions for safe handling

Ensure Personal Protective Equipment is used whenever handling the product, refer to Section 8. Avoid eating, drinking and smoking in areas where the product is used. Practice good hygiene. Wash hands after use and prior to consuming food and drink.

Make sure adequate ventilation is provided and take measures to ensure the product is not heated above the hazardous decomposition temperature of 290 °C / 554 °F. Keep away from sources of heat and ignition.

Make sure that all equipment is electrically grounded before beginning transfer operations. Electrostatic charges may be generated during handling.

7.2 Conditions for safe storage, including any incompatibilities

No special storage conditions required. DO NOT store together with food. Store in original, sealed containers protected from direct sunlight in a dry, cool, well ventilated area away from combustible and incompatible products (refer to Section 10). Keep away from sources of heat and ignition. Provide tight electrical equipment well protected against corrosion.

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7.3 Specific end use(s)

Not available.

8. Exposure Controls/Personal Protection

8.1 Control parameters

The Occupational Exposure Limits (OEL) identified in the table below are for by-products of thermal decomposition.

Ingredient	ACGIH - TLV	OSHA - PEL	Occupational Exposure Limits EH40 (UK)
Hydrogen Fluoride Anhydrous	0.5 ppm - 8 hr TWA 2 ppm - CLV	2.5 mg/m ³ 3 ppm - 8TWA * 6 ppm STEL *	1.8 ppm / 1.5 mg/m ³ - 8 hr TWA 3 ppm / 2.5 mg/m ³ - STEL
Carbonyl Difluoride	2 ppm - 8 hr TWA 5 ppm - STEL	2.5 mg/m ³ 2 ppm / 5 mg/m ³ - 8hr TWA 5 ppm / 15 mg/m ³ - STEL	2.5 mg/m ³ - 8 hr TWA

* US OSHA Table Z-1-A (29 CFR 1910.1000) 1989

8.2 Exposure controls

Appropriate engineering controls: Ensure adequate ventilation, especially in confined areas, that is appropriate to the risk of hazardous decomposition. Apply technical measure to comply with the OELs identified above.

Individual protection measures:

Eye/Face Protection: Safety glasses with side shields.

Hand/Skin Protection: Rubber, Latex or Plastic gloves.
Wear long-sleeved clothing or overalls/coveralls.

Respiratory Protection: Use of an personal respirator and approved filter that conform to local and national standards when potentially exposed to hazardous decomposition products.

Hygiene Measures: Make sure eyewash and safety showers are located close to the work area.
Wash face, hands and any exposed skin thoroughly after handling.
Immediately remove all soiled and contaminated clothing.
Do not eat, drink or smoke while handling the product.

Other/General Protection: None.

Environmental exposure controls:

Dispose of rinse water in accordance with local and national regulations.

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9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance	Colourless liquid	Melting point / freezing point	Not applicable	°C / °F
Odour	Odourless	Initial boiling point and boiling range	> 270 / 518	°C / °F
Odour threshold	Not applicable	Flash point	Not applicable	°C / °F
pH	Not available	Upper/lower flammability or explosive limits	Not applicable	°C / °F
Evaporation rate	Not available	Vapour pressure	< 0.00005 @ 20 °C	hPa
Flammability (solid, gas)	Not flammable	Vapour density	1.90 @ 20 °C	g/cm ³
Solubility(ies)	Water insoluble Fluorinated solvents soluble	Relative density	Not available	g/cm ³
Partition coefficient: n-octanol/water	Not available	Auto-ignition temperature	Not available	°C / °F
Explosive properties	Non-explosive	Decomposition temperature	> 290 / 554	°C / °F
Oxidising properties	Non-oxidising	Viscosity	503 - 580	mPa.s

9.2 Other information

Not applicable.

10. Stability and Reactivity

10.1 Reactivity

None under normal conditions of use.

10.2 Chemical stability

Stable under normal conditions of use.

10.3 Possibility of hazardous reactions

None under normal conditions of use.

10.4 Conditions to avoid

To avoid hazardous decomposition, do not heat product above > 290 °C / 554 °F. Naked flames and sources of ignition.

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10.5 Incompatible materials

Combustible materials, flammable materials, metals that promote and lower the decomposition temperature, Lewis acids (Friedel-Crafts) above 100 °C / 212 °F, Aluminium and Magnesium in powder form above 200 °C / 392 °F

10.6 Hazardous decomposition products

Gaseous Hydrogen Fluoride (HF) and Fluorophosgene.

11. Toxicological Information

11.1 Information on toxicological effects

Acute toxicity:	Perfluorinated Polyethers LD50 Oral: > 15,000 mg/kg (rat) LD50 Dermal: > 5,000 mg/kg (rat) Perfluoropolyethers Derivative LD50 Oral: > 5,000 mg/kg (rat) LD50 Dermal: > 2,000 mg/kg (rat)
Irritation:	Perfluorinated Polyethers No evidence of skin or eye irritation. Perfluoropolyethers Derivative Evidence of slight irritation to the skin and eye (rabbit).
Corrosivity:	Not available.
Sensitisation:	No evidence of respiratory or skin sensitisation.
Repeat dose toxicity:	Not available.
Carcinogenicity:	Not available.
Mutagenicity:	No evidence of Mutagenicity.
Specific Target Organ Toxicity (STOT) - single exposure:	Not available.
STOT - repeated exposure:	Not available.
Aspiration hazard:	Not available.
Toxicity for reproduction:	Not available.

Information on likely routes of exposure

Not available.

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Symptoms related to the physical, chemical and toxicological characteristics

Eye Effects:	Irritation and redness.
Skin Effects:	Irritation and redness.
Ingestion/Oral Effects:	Nausea, vomiting and diarrhoea.
Inhalation Effects:	Not available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Not available.

Other information

Exposure to hazardous decomposition products causes severe irritation of skin, eyes and mucous membranes.

12. Ecological Information

There are no known incidents of ecological damage, nor would be this be expected in normal use.

12.1 Toxicity

Perfluorinated Polyethers	LC50, 96 h: > 360 mg/l (Fishes, Brachydanio rerio) EC50, 48 h: > 360 mg/l (Daphnia Magna (Water Flea))
Perfluoropolyethers Derivative	EC50, 48 h: > 100 mg/l (Daphnia Magna (Water Flea))

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

Not available.

12.5 Results of PBT and vPvB assessment

PBT:	Not available.
vPvB:	Not available.

12.6 Other adverse effects

No known adverse effects.

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13. Disposal Considerations

13.1 Waste treatment methods

Product: If recycling is not practical, dispose of the product in accordance with all local and national regulations.

Waste product can incinerated at a licensed disposal plant equipped to neutralise or recover HF.

Packaging: Empty containers can be landfilled, when in accordance with local and national regulations.

14. Transport Information

14.1 UN number

ADR/RID	IMDG	IATA	Canadian TDG	United States DOT
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

14.2 UN proper shipping name

ADR/RID	IMDG	IATA	Canadian TDG	United States DOT
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

14.3 Transport hazard class

ADR/RID	IMDG	IATA	Canadian TDG	United States DOT
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

14.4 Packing group

ADR/RID	IMDG	IATA	Canadian TDG	United States DOT
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

14.5 Environmental hazards

ADR/RID	IMDG	IATA	Canadian TDG	United States DOT
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

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14.6 Special precautions for user

ADR/RID	IMDG	IATA	Canadian TDG	United States DOT
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

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

Not applicable.

15. Regulatory Information

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

European

This product has been classified in accordance with EU Regulation No 1272/2008 (as amended) on the Classification, Labelling and Packaging of Substances and Mixtures.

Classified as dangerous to supply: No.

German Federal Water Management Act: Water contaminating class - Not available

United States

All materials contained in this product are on the U.S. Toxic Substances Control Act (TSCA).

SARA TITLE III - SECTION 313 SUPPLIER NOTIFICATION:

This product does not contain toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 and 40 CFR Part 372.

California Proposition 65: This product does not contain chemicals known to the State of California to cause cancer or reproductive toxicity.

Canadian

WHMIS Classification: Not available.

This product is not in compliance with the Canadian DSL.

16. Other Information

This SDS is compiled in accordance with ANSI Z400.1, Regulation (EC) No 1907/2006 (as amended by Regulation No 453/2010) concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

16.1 Full text of abbreviated statements and phrases

Not applicable.

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16.2 NFPA / HMIS hazard codes

NFPA Hazard codes		HMIS Hazard codes		Rating System
Health	1	Health	1	0 = No Hazard
Flammability	0	Flammability	0	1 = Slight Hazard
Instability	0	Reactivity	0	2 = Moderate Hazard
				3 = Serious Hazard
				4 = Severe Hazard

16.3 Sources of information for this data sheet

- Solvay Solexis "DRYNERT 25/6" Safety Data Sheet. Ref: P 19824 USA: 29/03/2012.
- Solvay Solexis "DRYNERT 25/6" Safety Data Sheet. Ref: P 19824 UK: 14/02/2011.

16.4 Glossary

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; ANSI - American National Standards Institute; Canadian TDG - Canadian Transportation of Dangerous Goods; CAS - Chemical Abstracts Service; Chemtrec - Chemical Transportation Emergency Center (US); CLV - Ceiling Limit Value; DSL - Domestic Substances List; EC - Effective Concentration; EH40 (UK) - HSE Guidance Note EH40 Occupational exposure limits; EPCRA - Emergency Planning and Community Right-to-Know Act; GHS - Globally Harmonized System of Classification and Labelling of Chemicals; HMIS - Hazardous Material Information Service; IATA - International Air Transport Association; IMDG - International Maritime Dangerous Goods; LC - Lethal Concentration; LD - Lethal Dose; NFPA - National Fire Protection Association; OSHA - Occupational Safety and Health Administration, US department of Labour; OEL - Occupational Exposure Limits (OEL); PBT - Persistent, Bioaccumulative and Toxic; vPvB - Very Persistent, Very Bioaccumulative; PEL - Permissible exposure limit; RID - European Agreement concerning the International Carriage of Dangerous Goods by Rail; SARA (Title III) - Superfund Amendments and Reauthorization Act; SARA 313 - Superfund Amendments and Reauthorization Act, Section 313; SCBA - Self-Contained Breathing Apparatus; STEL - Short Term Exposure Limit; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act Public Law 94-469; TWA - Time-Weighted Average; US DOT - US Department of Transportation; WHMIS - Workplace Hazardous Materials Information System.

16.5 Revisions:

January 2011 - Data Sheet updated to reflect the latest regulatory and supplier safety information.

November 2012 - Data Sheet updated to reflect the latest regulatory and supplier safety information.

July 2013 - Data Sheet updated to conform to Regulation (EC) No 1907/2006 (as amended by Regulation No 453/2010) and GHS.

December 2013 - Global formatting updates

January 2016 - Contact details updated. Revision date not changed to preserve 2-yearly SDS review date.

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