

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : GREASE - FOMBLIN® CR 861

1. Product and Company Identification

Product name: Fomblin CR 861 grease
Synonyms: None
Item Numbers: H113-50-116

European Contact Details

Edwards, Manor Royal, Crawley
West Sussex, RH10 9LW, England
E-mail: info@edwardsvacuum.com

General enquiries

UK : +44 (0)1293 528844
France : +(33) 1 47 98 24 01
Germany : +(49) 6420-82-410
Italy : +(39) 0248-4471

US Contact Details

Edwards, Three Highwood Drive, Suite 3-10E,
Highwood Office Park, Tewksbury, MA 01876

General enquiries

+(1) 978-658-5410
Toll Free: 1-800-848-9800

24 h Emergency telephone number:

Chemtrec: 1-800-424-9300

2. Hazards Identification

EMERGENCY OVERVIEW

This material when properly handled according to good working and hygienic practices is not dangerous to human health and the environment. Harmful effects are expected only when thermal decomposition produces corrosive and toxic vapours.

For short and long term exposure effects see Section 11 Toxicological data.

Eye Effects: May cause slight irritation.
Skin Effects: May cause slight irritation.
Ingestion/Oral Effects: May cause nausea and vomiting.
Inhalation Effects: May cause respiratory tract irritation.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: No data available.

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

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3. Composition/Information on Ingredients

Ingredient	% Weight	CAS No	Hazard class*	Risk phrase*
Ethene, tetrafluoro-, oxidised, polymerised (1,1,2,2-Tetrafluoroethene,oxidised,polymerised)	50-55	69991-61-3	Not applicable	Not applicable
Polytetrafluoroethylene (Homopolymer of tetrafluoroethylene)	25-30	9002-84-0	Not applicable	Not applicable
1-Propene, 1,1,2,3,3,3 hexafluoro-, oxidised, polymerised. (Propene, 1,1,2,3,3,3-hexa- 69991- 67-9 10-15 fluoro, oxidised, polymerised)	10-15	69991-67-9	Not applicable	Not applicable
Perfluoropolyethers derivative (1- propene, 1,1,2,3,3,3-hexafluoro-, oxidised, polymerised, reduced, hydrolysed, reaction products with ammonia)	7-13	370097-12-4	Not applicable	Not applicable

*Hazard class & Risk phrase. 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

Eyes:	Immediately flush the eyes with plenty of water for at least 15 minutes. If irritation persists, seek medical attention.
Skin:	Wash thoroughly with soap and water. Flush the skin with lukewarm water for 15 minutes. If irritation persists, seek medical attention.
Ingestion/Oral:	If conscious, drink three to four $\frac{1}{4}$ litre (8 US fluid ounce) glasses of water or milk. Do not induce vomiting. Seek medical attention. If unconscious, immediately take the affected person to hospital. Do not give anything by mouth to an unconscious person.
Inhalation:	If the affected person is overcome or experiences irritation or discomfort, remove to fresh air. A qualified individual should administer oxygen or artificial respiration as needed. Seek immediate medical attention.
Other Information:	None.

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5. Fire Fighting Measures

- Extinguishing Media: Water (spray or fog), foam, powder, dry chemical, carbon dioxide (CO₂).
- Fire and Explosion Hazard: The product will degrade upon prolonged heating or if in a fire, and liberate hydrogen fluoride (HF) and carbonyl fluoride/fluorophosgene (COF₂). These vapours are toxic if inhaled or if they come into contact with moist skin.
- 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. Skin protection should be worn to protect from acidic vapours.

For Flammability Properties - see Section 9

6. Accidental Release Measures

Put on the necessary personal protective clothing: see 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 or similar inert absorbent. Place spilled material into covered container for disposal. Use a suitable cleaning solution to clean up any remaining liquid. Dispose of according to applicable local, state and federal regulations. Do not flush into surface water or sanitary sewer system.

7. Handling and Storage

- Handling: Wear protective clothing when required. Do not drink or eat during handling. Do not smoke in working areas. Avoid heating above the decomposition temperature of 290 °C/554 °F. Take precautions to avoid electrostatic charges which may be generated during handling.
- Storage: Keep in closed containers, away from sources of ignition, from flammable, combustible and explosive materials and from incompatible materials (see Section 10).

8. Exposure Controls/Personal Protection

Exposure Limits for product:

Ingredient	ACGIH - TLV -	OSHA - PEL	Occupational Exposure Limits EH40 (UK)/ EU Indicative Exposure
Fomblin CR 861	None established	None established	No data available

Exposure Limits for by-products of decomposition:

Ingredient	ACGIH - TLV -	OSHA - PEL	Occupational Exposure Limits EH40 (UK)/ EU Indicative Exposure
Hydrogen fluoride (HF)	0.5 ppm (TWA) 2 ppm (ceiling limit value)	Not available	1.8 ppm, 1.5 mg/m ³ (TWA) 3 ppm, 2.5 mg/m ³ (STEL)
Carbonylfluoride (COF ₂)	2 ppm (TWA) 5 ppm (STEL)	2 ppm (TWA)	2.5 mg/m ³ (TWA)

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Personal Protection:

- Engineering Measures:** Provide working areas with adequate ventilation (minimum extraction rate of 50 ft³/min), appropriate to the risk of decomposition of the product, to vent vapours away from personnel. Provide eye wash and emergency shower facilities.
- Respiratory Protection:** Not required in normal use. In situations where exposure to vapours or mists is likely, the use of a suitable respirator is recommended. Wear a suitable respirator in cases of thermal decomposition or fire. See also Section 5.
- Hand/Skin Protection:** Wear rubber, plastic or latex gloves, a rubber apron and long-sleeved clothing.
- Eye/Face Protection:** ANSI Z87.1 approved safety glasses with side shields or equivalent, safety goggles.
- Hygiene Measures:** Practice good workplace hygiene. Do not eat or smoke when handling. Wash hands before breaks and at the end of the working day.
- Other/General Protection:** Use NIOSH/MSHA approved acid and organic vapour respirators (A2B2E2K2-P3 type combination filter).

9. Physical and Chemical Properties

Appearance and Odour	Colourless, odourless paste	Boiling point	> 290 / 554	°C/°F
pH (as supplied)	No data available	Melting Point	No data available	°C/°F
Solubility in Water	Insoluble	Auto Ignition	Not flammable	°C/°F
Volatile Content by Volume	No data available	Flash Point	Not flammable	°C/°F
Specific Gravity	1.9	Not explosive and Not oxidiser		
Vapour Pressure (mbar)	<1.3 x 10 ⁻⁵ @ 20 °C	Vapour Pressure (Torr)	<1.0 x 10 ⁻⁵ @ 68 °F	

10. Stability and Reactivity

- Stability:** Stable under normal conditions of use and storage.
- Material/Conditions to Avoid:** Sparks, flames and other sources of ignition. Temperatures above 290 °C/ 554 °F. Strong alkaline compounds (alkaline hydroxides, ammonia, non-aqueous alkalis), Lewis acids (Friedel-Crafts; AlCl₃, SbF₅, C F₃) above 100 °C/212 °F. Magnesium, aluminium and their alloys in powder form above 180 °C/356 °F.
- Hazardous Decomposition:** The product will decompose at temperatures above 290 °C/554 °F and evolve hydrogen fluoride (HF) and carbonyl fluoride/fluorophosgene (COF₂), which are toxic and corrosive.
- Hazardous Polymerisation:** Will not occur.

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11. Toxicological Information

For a comprehensive description for the various toxicological (health) effects which may arise if the user comes into contact with the substance or preparation refer to Section 2 Hazards Identification.

Animal data:

LD50 value: Acute oral: > 5,000 mg/kg (1-Propene, 1,1,2,3,3,3-hexafluoro-, oxidised, polymd.).
Acute dermal: > 2,000 mg/kg (1-Propene, 1,1,2,3,3,3-hexafluoro-, oxidised, polymd.).

LC50 value: No data available.

Skin irritation: No skin irritation (Perfluorinated polyethers).

Eye irritation: No eye irritation (Perfluorinated polyethers).

Sensitisation: Did not cause sensitisation on laboratory animals. (Perfluorinated polyethers).

Chronic toxicity: Dermal, 14 days, No skin irritation (1-Propene, 1,1,2,3,3,3-hexafluoro-, oxidised, polymd.).
28-day, NOEL: > 1000 mg/kg/day, (1-Propene, 1,1,2,3,3,3-hexafluoro-, oxidised, polymd.).

Genetic toxicity in vitro: Not mutagenic in Ames Test. (Perfluorinated polyethers).

This product is biologically inert.

Carcinogenicity:

No data available.

12. Ecological Information

Acute ecotoxicity: Oncorhynchus mykiss (rainbow trout), LC50, 96 h, > 370 mg/l (1-Propene, 1,1,2,3,3,3- hexafluoro-, oxidised, polymd.).
Remarks: saturated aqueous solution.

Daphnia magna (Water flea), EC50, 48 h, > 370 mg/l (1-Propene, 1,1,2,3,3,3- hexafluoro-, oxidised, polymd.).
Remarks: saturated aqueous solution.

Mobility: No data available.

Persistence and degradability: No data available.

Bioaccumulative potential: No data available.

Other adverse effects: No data available.

Possible hazards (summary): Ecological injuries are not known or expected under normal use.

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13. Disposal Considerations

Material as supplied, is not a hazardous waste. Incinerate in a high-temperature incinerator designed to burn fluorine-containing materials, according to current federal, state and local regulations. The incinerator must be equipped with a system for the neutralisation or recovery of HF. Processing, use or contamination of the product may make this information inaccurate or incomplete.

Waste containers can be sent to landfill sites, according to current federal, state and local regulations.

14. Transport Information

This product is not classified as dangerous under transport regulations.

PARAMETER	EUROPEAN	CANADIAN TDG	UNITED STATES DOT
Proper Shipping Name	Not applicable	Not applicable	Not applicable
Hazard Class	Not applicable	Not applicable	Not applicable
Identification Number	Not applicable	Not applicable	Not applicable
Shipping Label	Not applicable	Not applicable	Not applicable

Sea (IMO/IMDG): Not regulated.

Air (ICAO/IATA): Not regulated.

European Road/Rail (ADR/RID): Not regulated.

15. Regulatory Information

European Regulatory Information

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

Risk Phrases: Not applicable.

Safety Phrases: Not applicable.

Symbols: None.

EINECS : Not applicable, Product falls under the EU-polymer definition.

EC Label : Preparation non classified according to Directive 1999/45/EC.

European Waste Catalogue, Hazardous waste: Waste codes should be assigned by the user based on the application for which the product was used.

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United States Regulatory Information

All components of this product are either listed on the Toxic Substances Control Act (TSCA) Section 8(b) Chemical Inventory or subject to a Low Volume Exemption per the Toxic Substance Control Act (TSCA) regulations in 40 CFR 723.50 (c) (1).

Uses are restricted to a lubricant additive. No consumer or spray applications are allowed.

This product is not a "hazardous substance" as defined by OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Section 302 Extremely Hazardous Substances: Not listed.

SARA 311/312: Acute: No.
 Chronic: No.
 Fire: No.
 Reactivity: No.
 Sudden Release of Pressure: No.

SARA Section 313 Toxic Chemicals: Not listed.

Canadian Regulatory Information

WHMIS Classification : Not a controlled product.

DSL : One or more components not listed on inventory.

Other Regulatory Information

Australian (AICS) : One or more components not listed on inventory.

China (IECS) : In compliance with inventory.

Korea (KECI) : In compliance with inventory.

Japan (METI/ENCS) : In compliance with inventory.

New Zealand *: In compliance with inventory. (* Inventory in preparation).

Philippines (PICCS) : One or more components not listed on inventory.

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16. Other Information

This MSDS is compiled in accordance with ANSI Z400.1 and Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Sources of information for this data sheet:

- Solvay Solexis S.p.A. "FOMBLIN[®] GREASE CR 861" Safety Data Sheet.
Ref: FDS / P 19852 / 22/10/2007 / United Kingdom / Report version 1.0 / Issuing date 02.07.2007.

Glossary:

ACGIH - American Conference of Governmental Industrial Hygienists; **ADR** - European Agreement concerning the International Carriage of Dangerous Goods by Road; **AICS** - Australian Inventory of Chemical Substances; **ANSI** - American National Standards Institute; **Canadian TDG** - Canadian Transportation of Dangerous Goods; **CAS** - Chemical Abstracts Service; **Chemtrec** - Chemical Transportation Emergency Center (US); **CHIP** - Chemical (Hazard Information and Packing); **DSL** - Domestic Substances List; **EC** - Equivalent Concentration; **EH40 (UK)** - HSE Guidance Note EH40 Occupational exposure limits; **EINECS** - European Inventory of Existing Chemical Substances; **ENCS** - Existing and New Chemical Substances (Japan); **HMIS** - Hazardous Material Information Service; **IATA** - International Air Transport Association; **ICAO** - International Civil Aviation Organization; **IECS** - Inventory of Existing Chemical Substances (China); **IMDG** - International Maritime Dangerous Goods; **IMO** - International Maritime Organization; **KECI** - Korean Existing Chemicals Inventory; **LC** - Lethal Concentration; **LD** - Lethal Dose; **MSHA** - Mine Safety and Health Administration; **NFPA** - National Fire Protection Association; **NIOSH** - National Institute for Occupational Safety and Health; **NOEL** - No Observable/Observed Effect Level; **OSHA** - Occupational Safety and Health Administration, US department of Labour; **PEL** - Permissible Exposure Limit; **PICCS** - Philippine Inventory of Chemicals and Chemical Substances; **RID** - Regulations 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.

Revisions:

April 2010 - Data Sheet updated to reflect the latest supplier safety information and the latest regulatory information.

Although the information and recommendations in this data sheet are to the best of our knowledge correct, it is recommended that you make your own determination of the material's suitability for your purpose before you use it. The information contained in this data sheet has been reproduced from the manufacturers data; the accuracy of this information is the responsibility of the manufacturer. Edwards accept no responsibility for damage of any nature resulting from the use of, or the reliance upon, this data sheet.