

PRODUCT NAME : GREASE - FOMBLIN (AR555)

1. Product and Company Identification

Product Name: Fomblin Y grease - Grade AR555
Synonyms: None
Item Numbers : H113-50-013, 000-007-696.

European Contact Details

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2. Composition/Information on Ingredients

Ingredient	% Weight	CAS No	Hazard class*	Risk phrase*
<u>Base Oil</u> : Fomblin YR (Perfluorinated polyether)	Not available	6991-67-9	Not applicable	Not applicable
<u>Thickener</u> : Algoflon (Polytetrafluoroethylene)	Not available	9002-84-0	Not applicable	Not applicable
<u>Anti rust additive</u> : Fomblin DA305	Not available	Not allocated	Not applicable	Not applicable

*Hazard class & Risk phrase. These columns are only completed for ingredients which are classified as hazardous under EU Directive (67/548/EEC, 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".

OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

3. 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 irritating and toxic vapours.

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

PRODUCT NAME : GREASE - FOMBLIN (AR555)
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Eye Effects: Repeated or prolonged contact with eyes may cause redness.
Skin Effects: Repeated or prolonged contact with skin may cause redness or dermatitis.
Ingestion/Oral Effects: Ingestion of the product in large amounts may cause abdominal pains, nausea and diarrhoea.
Inhalation Effects: Low volatility makes inhalation an unlikely hazard. The thermal decomposition vapours of fluorinated polymers may cause polymer fume fever with flu like symptoms in humans, especially when smoking contaminated tobacco.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: May aggravate pre-existing eye and skin disorders.

NFPA Hazard codes		HMIS Hazard codes		Rating System
Health	1	Health	1	0 = No Hazard
Flammability	1	Flammability	1	1 = Slight hazard
Stability	0	Physical Hazard	0	2 = Moderate Hazard
				3 = Serious Hazard
				4 = Severe hazard

4. First Aid Measures

Eyes: Immediately flush the eyes with plenty of water for at least 15 minutes.
Skin: In case of contact wash thoroughly with soap and water.
Ingestion/Oral: Give two to three glasses of water. Induce vomiting if victim is conscious. Contact a physician immediately.
Inhalation: Not applicable in normal use. If fumes produced at elevated temperatures are inhaled, remove to fresh air. If breathing problems occur, a qualified individual should administer oxygen or artificial respiration as indicated. Seek immediate medical attention.
Other Information: None.

5. Fire Fighting Measures

Extinguishing Media: Water, foam, powder or carbon dioxide.
Fire and Explosion Hazard: Possible risk due to irritation and toxic affects of thermal combustion products. These can include hydrogen fluoride and carbonyl fluoride. Direct water stream may cause violent frothing.
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 hydrogen fluoride vapour.

For Flammability Properties - see Section 9

PRODUCT NAME : GREASE - FOMBLIN (AR555)
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6. Accidental Release Measures

In the event of spillage :

- Isolate area of spill. Do not walk through or otherwise scatter spilled material. Recover released product and collect in a suitable container for reuse or disposal. Thoroughly remove residue to prevent slipping.
- Avoid discharge into sewage systems, in surface or underground waters and in the soil.

7. Handling and Storage

Handling : Do not drink, eat or smoke during handling. Avoid heating above the decomposition temperature of 290°C/554°F. If heating is necessary, use adequate ventilation. Do not carry cigarettes or cigars or smoke in areas where this product is being used or stored. Greasy hands may contaminate tobacco products. Smoking contaminated products may cause polymer fume fever. Wash thoroughly after handling and before meals and breaks.

Storage : keep away from heat sources, from flammable , combustible or explosive materials and incompatible compounds. Store in metal, glass or plastic (polyethylene) containers.

8. Exposure Controls/Personal Protection

Exposure Limits

Ingredient*	ACGIH - TLV -	OSHA - PEL	Occupational Exposure Limits EH40 (UK)
None	Not applicable	Not applicable	Not applicable

* This column shows only hazardous ingredients that have established OSHA or ACGIH exposure guidelines. ACGIH recommends PTFE decomposition products be quantitatively determined in air as fluoride to provide an index of exposure. Although no TLV is recommended, ACGIH states "air concentration should be controlled as low as possible."

Threshold limits of decomposition products(ACGIH 2003) :

Hydrogen fluoride : ACGIH TLV 3 ppm (Ceiling); OSHA PEL 3 ppm

Carbonyl fluoride : ACGIH TLV 2 ppm (TWA), 5 ppm (Ceiling)

Personal Protection:

- Engineering Measures: General ventilation. Use local exhaust and additional engineering controls in areas if product is heated to high temperature.
- Respiratory Protection: No specific measures required under normal conditions.
- Hand/Skin Protection: Wear rubber gloves (hygiene measure only).
- Eye/Face Protection: Not necessary for product. Safety glasses are generally required in the work area.
- Hygiene Measures: Avoid contact with skin. DO NOT eat or smoke whilst using the product. Wash hands after use and before eating or smoking.
- Other/General Protection: None.

PRODUCT NAME : GREASE - FOMBLIN (AR555)
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9. Physical and Chemical Properties

Appearance and Odour	White, odourless grease	Boiling Point	No data available	°C/°F
pH (as supplied)	No data available	Freezing Point	No data available	°C/°F
Solubility in Water	Insoluble in water. Soluble in fluorinated solvents	Auto Ignition	Not flammable	°C/°F
Volatile Content by Volume	No data available	Flash Point	Not explosive	°C/°F
Specific Gravity	1.9			
Vapour Pressure (mbar)	<1.3x10 ⁻⁶ mbar @ 20°C	Vapour Pressure (Torr)	<10 ⁻⁶ @ 68° F	

10. Stability and Reactivity

Stability: Stable in normal conditions of use.

Material/Conditions to Avoid: Avoid exposing the product to temperatures above 290°C/554°F. Avoid contact with strong alkaline compounds (alkaline hydroxides and ammonia), Lewis acids (like AlCl₃, SbF₅, CoF₃) above 100°C/212°F.

Hazardous Decomposition: Thermal decomposition products: hydrogen fluoride, carbonyl fluoride.

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 3 Hazards Identification.

Animal Data:

LD50 value: No data available.

LC50 value: No data available.

Carcinogenicity, etc :

The product has no known effects in relation to carcinogenesis, mutagenesis and reprotoxicity.

Toxicity information for PTFE decomposition products:

Inhalation: PTFE decomposition products vary widely in toxicity in experimental animals. Four hour LC50s (inhalation) for decomposition products range from 0.76 ppm (perfluoroisobutane) to 40,000 ppm (tetrafluoroethylene monomer). Workers exposed to PTFE fumes produced at 350-380 °C (temperatures associated with liberation of hexafluoroethane, perfluoroisobutylene and octafluorocyclobutene) exhibited symptoms consistent with polymer fume fever at workplace air concentrations of 3.5 mg/m³ compounds containing fluorine.

Chronic: Repeated episodes of polymer fume fever may damage the lungs.

PRODUCT NAME : GREASE - FOMBLIN (AR555)

12. Ecological Information

No foreseeable hazards. Use the product according to good working practices, avoiding polluting the environment.
Ecotoxicity : No data available.

13. Disposal Considerations

Incinerate in high temperature incinerators designed to burn fluorine compounds in accordance with local and national regulations.

14. Transport Information

This product is not regulated 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

15. Regulatory Information

European Regulatory Information

This product has been classified in accordance with the Dangerous Substances Directive (67/548/EEC, as amended) and the Preparations Directive (88/379/EEC, as amended), implemented in the UK as the Chemical (Hazard Information and Packing) Regulations 1994 (CHIP, as amended).

Classified as dangerous to supply : No

Risk Phrases : Not applicable

Safety Phrases : Not applicable

Symbols : None

United States Regulatory Information

SARA TITLE III SECTION 313 SUPPLIER INFORMATION:

Base oil and thickeners are not 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: Base oil and thickener are not listed as chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

PRODUCT NAME : GREASE - FOMBLIN (AR555)

Canadian Regulatory Information

WHMIS Classification: D2B

16. Other Information

This MSDS is compiled in accordance with ANSI Z400.1 and the EU Safety Data Sheet Directive 91/155/EEC.

Source of information for this data sheet:

- Ausimont Safety Data Sheet for Fomblin Grease AR 555. Reference : sym/ss 346. Date : 28 June, 1995
- National Library of Medicine (NLM) electronic databases (HSDB, RTECS, CHEMID, Toxline)

Glossary : **CAS**, Chemical Abstracts Service; **NFPA**, National Fire Protection Association; **HMIS**, Hazardous Material Information Service; **LD**, Lethal Dose; **LC**, Lethal Concentration; **ACGIH**, American Conference of Governmental Industrial Hygienists; **TLV**, threshold limit value; **OSHA**, Occupational Safety and Health Administration, US department of Labour; **PEL**, Permissible exposure limit; **EH40 (UK)**, HSE Guidance Note EH40 Occupational exposure limits; **PPM**, parts per million; **TWA**, Time-Weighted Average; **STEL**, Short Term Exposure Limit; **Canadian TDG**, Canadian Transportation of Dangerous Goods; **US DOT**, US Department of Transportation. **HSDB**, Hazardous Substances Data Bank; **RTECS**, Registry of Toxic Effects of Chemical Substances; **CHEMID**, Chemical Identification; **DSL**, Domestic Substances List ; **TSCA**, Toxic Substances Control Act Public Law 94-469: **CERCLA**, Comprehensive Environmental Response, Compensation and Liability Act; **EPCRA**, Emergency Planning and Community Right-to-Know Act; **CAA**, Clean Air Act; US, **SARA (Title III)**, Superfund Amendments and Reauthorization Act.; **SARA 313**, Superfund Amendments and Reauthorization Act, Section 313; **EHS**, Extremely Hazardous Substance; **WHMIS**, Workplace Hazardous Materials Information System.

Revisions

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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. BOC Edwards accept no responsibility for damage of any nature resulting from the use of, or the reliance upon this data sheet.

PRODUCT NAME : GREASE - FOMBLIN (AR555)