

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : COOLANT - HT110

1. Product and Company Identification

Product name: Galden HT110 Coolant
Synonyms: None
Item Numbers: P53289800, P53289900

European Contact Details

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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. Thermal decomposition will generate carbonyl fluoride (COF₂) which is toxic and hydrogen fluoride (HF) which can be corrosive.

For short and long term exposure effects, refer to Section 11 Toxicological data.

Eye Effects: Eye contact may cause slight irritation and redness.
Skin Effects: Skin contact may cause slight irritation and redness.
Ingestion/Oral Effects: Ingestion in large amounts may cause abdominal pain, nausea and vomiting.
Inhalation Effects: Inhalation of vapours or mist may cause respiratory tract irritation.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

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*
Propene, 1,1,2,3,3,3-hexafluoro, oxidised, polymerised	100	69991-67-9	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:** Flush eye for 15 minutes with copious amounts of water, retracting the eyelids often. Seek medical attention if irritation persists.
- Skin:** Wash skin thoroughly with mild soap and water. Flush with lukewarm water for 15 minutes. If irritation persists, seek medical attention.
- Ingestion/Oral:** If conscious, drink three to four 8 ounce/500 ml glasses of water or milk. Induce vomiting. Call a physician.
If unconscious, immediately take affected person to a hospital. DO NOT give anything by mouth to an unconscious person.
- Inhalation:** Remove person affected by irritation, discomfort or vapours to fresh air. Give oxygen or artificial respiration as needed. Seek immediate medical attention.

Other Information:

5. Firefighting Measures

- Extinguishing Media:** Water fog or spray, foam, dry chemicals or carbon dioxide.
- Fire and Explosion Hazard:** Material is not flammable or explosive. But fluoropolymers will degrade upon prolonged heating or in a fire, to generate carbonyl fluoride (COF₂) which is toxic, and hydrogen fluoride (HF) which can be corrosive if inhaled or if it comes into contact with moist skin.
Where there is a surrounding fire, move the containers to a safe location if possible. Where there is a fire in the immediate area, keep containers cool by spraying with water.
- Special Protective Equipment for Firefighters:** Firefighters should wear a Self-Contained Breathing Apparatus (SCBA) which meets appropriate standards operated in positive pressure mode. Skin protection is required for acid gas exposure.

For Flammability Properties - refer to Section 9

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6. Accidental Release Measures

In case of a release or spill, absorb material into vermiculite or similar inert absorbent. Put spilled material into a covered container for disposal. Extinguish all ignition sources and evacuate the area. Exercise caution as the spill area may be slippery. Avoid discharge of the released product into sewage systems, surface and underground waters, and the soil.

7. Handling and Storage

Handling: Take care to prevent small spills and leakage, to avoid a slip hazard.
Keep away from sources of ignition.
Avoid inhalation or contact with skin and eyes.

Storage: Store in tightly closed containers in cool, dry and well-ventilated areas. Store away from heat, sources of ignition, and incompatible materials: refer to Section 10 "Stability and Reactivity".

8. Exposure Controls/Personal Protection

Exposure Limits:

Ingredient	ACGIH - TLV	OSHA - PEL	Occupational Exposure Limits EH40 (UK)
Perfluoropolyethers	Not applicable	Not applicable	Not applicable

Data for decomposition products: Hydrogen Fluoride has an ACGIH PEL TLV (8hr TWA) of 0.5 ppm and a ceiling limit of 2 ppm (1.7 mg/m³). Carbonyl fluoride has an ACGIH TLV of 2 ppm (5.4 mg/m³) and an OSHA PEL TWA of 2 ppm (5 mg/m³).

Personal Protection:

Engineering Measures: Use with appropriate local exhaust ventilation.
Local exhaust, vent vapours or mists generated by processing away from operating personnel at a rate of 15m/min (50 feet/minute).
Apply technical measures to comply with the occupational exposure limits. For additional information, consult the current edition of the guide to the Safe Handling of Fluoropolymers published by the Society of Plastics Industry, Inc. (SPI) Fluoropolymer Division.

Respiratory Protection: Not necessary in normal use, but in the event of fire SCBA must be used.

Hand/Skin Protection: Rubber or latex gloves. Worksuit or rubber apron.

Eye/Face Protection: Approved safety goggles.

Hygiene Measures: Wash hands after use and before handling food or applying cosmetics. Do not smoke in the immediate area.

Other/General Protection: Treat any decomposition by-product as hydrogen fluoride (HF) exposure. Check for air contamination - consult an industrial hygienist or occupational health specialist.

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9. Physical and Chemical Properties

Appearance and Odour	Clear, colourless, odourless liquid.	Boiling Point	110/230	°C/°F
pH (as supplied)	No data available	Freezing Point	No data available	°C/°F
Solubility in Water	Not soluble	Auto Ignition	No data available	°C/°F
Volatile Content by Volume	0	Flash Point	Not flammable	°C/°F
Specific Gravity	1.75 - 1.85 g/l			
Vapour Pressure (mbar)	22.7 mbar @ 20 °C	Vapour Pressure (Torr)	17 Torr @ 20 °C	

10. Stability and Reactivity

Stability:	Product is stable under normal storage and handling conditions.
Material/Conditions to Avoid:	Avoid heating the product above 290 °C/554 °F. Avoid sources of combustion. Avoid strong or non-aqueous alkali and Lewis acids (AlCl ₃ , CoF ₃ , etc.) above 100 °C/212 °F. Avoid powdered magnesium, aluminium and their alloys above 100 °C/212 °F.
Hazardous Decomposition:	Thermal decomposition of this product above 290 °C will generate hydrogen fluoride (HF) and carbonyl fluoride (COF ₂), which are corrosive and toxic gases. The decomposition is promoted by metals, so in the presence of titanium and its alloys the decomposition temperature lowers to 260 °C
Hazardous Polymerisation:	No data available.

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:	Rat acute oral toxicity: > 15,000 mg/kg Rat acute skin toxicity: > 5,000 mg/kg
LC50 value:	Rat acute inhalation toxicity: > 2445 ppm (4 hr inhalation test)

Other animal information:

- Rabbit skin irritation: not irritating
- Rabbit eye irritation: not irritating
- Guinea pig sensitisation: not a sensitiser
- Not mutagenic

Carcinogenicity:

No known effect

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12. Ecological Information

No information but no foreseeable hazard.

Mobility: No available data

Degradability: No available data

13. Disposal Considerations

This material is not classified as a hazardous waste product when discarded. Recommended method of disposal is by high temperature incineration, in units designed to burn flourine compounds and carried out by a licensed waste disposal contractor. This must be in compliance with all applicable environmental protection and waste disposal legislation, and with any regional local authority requirements.

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

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: Not applicable

United States Regulatory Information

All materials contained in this product are on the US 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 Regulatory Information

WHMIS Classification: Not a controlled product.

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All ingredients in this product are included in the Canadian DSL.

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 Material Safety Data Sheet for Galden HT110. Issue date: 27th June 2008.
- Swantek Material Safety Data Sheet for Galden HT. Issue date: 31st July 2008.

Glossary:

ACGIH - American Conference of Governmental Industrial Hygienists; **ANSI** - American National Standards Institute; **Canadian TDG** - Canadian Transportation of Dangerous Goods; **CAS** - Chemical Abstracts Service; **Chemtrec** - Chemical Transportation Emergency Center (US); **DSL** - Domestic Substances List; **EEC** - European Economic Community; **EH40 (UK)** - HSE Guidance Note EH40 Occupational Exposure Limits; **EPCRA** - Emergency Planning and Community Right-to-Know Act; **EU** - European Union; **HMIS** - Hazardous Material Information Service; **LC** - Lethal Concentration; **LD** - Lethal Dose; **NFPA** - National Fire Protection Association; **OSHA** - Occupational Safety and Health Administration, US Department of Labour; **PEL** - Permissible Exposure Limit; **SARA (Title III)** - Superfund Amendments and Reauthorization Act; **SARA 313** - Superfund Amendments and Reauthorization Act, Section 313; **SCBA** - Self-Contained Breathing Apparatus; **SPI** - Society of Plastics Industry, Inc.; **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:

Oct. 2008 - Data Sheet updated to reflect the latest supplier safety information.

June 2010 - Data Sheet updated to reflect current regulatory information.

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