

# Material Safety Data Sheet

<b>Revision Date</b> February 2 <sup>nd</sup> , 2005	<b>Prepared by</b> David MacKinnon	<b>Technical Information</b> 1-800-201-8822 or <a href="mailto:support@mgchemicals.com">support@mgchemicals.com</a>
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## Section 1: Product Identification

**MSDS Code: 411 - aerosol**

**Name: HFE Solvent**

**Related Part Numbers: 411-300G**

Use: For cleaning electronic parts and components.

## Section 2: Hazardous Ingredients

CAS#	Chemical Name	Percentage by weight	ACGIH TWA	Osha Pel	Osha Stel
163702-08-7	(perfluoroisobutyl) methyl ether	35	600ppm	n/e	n/e
163702-07-6	(perfluoro-n-butyl) methyl ether	35	600ppm	n/e	n/e
811-97-2	1,1,1,2 - tetrafluoroethane	30	1000ppm	n/e	n/e

## Section 3: Hazards Identification

**WHMIS Codes:** A

**NFPA Ratings:** Health 0 Flammability 0 Reactivity 0

**HMIS Ratings:** Health 0 Flammability 0 Reactivity 0

**Eyes:** May cause mild eye irritation.

**Skin:** Not expected to cause skin irritation.

**Inhalation:** Practically non-toxic.

**Ingestion:** Swallowing a large amount of this product is unlikely to produce serious illness.

**Chronic:** None known.

## Section 4: First Aid Measure

**Eyes:** Remove contact lenses. Flush with water or saline for 20 minutes. Get medical aid if symptoms persist.

**Skin:** Wash skin with large quantities of soap and water. Get medical aid if symptoms persist.

**Inhalation:** Immediately remove from exposure to fresh air. Get medical aid if symptoms persist.

**Ingestion:** Do not induce vomiting. If conscious, give 1-2 glasses of water. Get medical aid.

## Section 5: Fire Fighting Measures

**Autoignition Temperature:** 405°C **Flash Point:** n/a **LEL / UEL:** n/a

**Extinguishing Media:** Use water spray, dry chemical, carbon dioxide, or chemical foam.

**General Information:** Containers may explode in the heat of a fire.

### Section 6: Accidental Release Measures

**Spill Procedure:** Remove all sources of ignition. Provide adequate ventilation. Wear appropriate personal protection. Sprinkle absorbent compound onto spill, then sweep into a plastic or metal container. Wipe up further residue with paper towel and place in container. Wash spill area with soap and water.

### Section 7: Handling and Storage

**Handling:** Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Do not ingest or inhale. Do not expose container to heat or flame.

**Storage:** Keep away from sources of ignition. Store in a cool, dry, well ventilated area, away from incompatible substances.

### Section 8: Exposure Controls

**Routes of entry:** Eyes, ingestion, inhalation, and skin.

**Ventilation:** Use adequate general or local exhaust ventilation to keep airborne concentrations below exposure limits.

**Personal Protection:** Wear appropriate protective eyeglasses or chemical safety goggles. Wear appropriate protective clothing to prevent skin contact. Use a NIOSH approved respirator when necessary.

### Section 9: Physical and Chemical Properties

<b>Physical State:</b>	Aerosol	<b>Odor:</b>	slight	<b>Solubility:</b>	<20ppm	<b>Evaporation Rate:</b>	n/e	
<b>Boiling Point:</b>	60°C	<b>Specific Gravity:</b>	1.5	<b>Vapor Pressure:</b>	47 PSI @21°C	<b>Vapor Density:</b>	8.6 (Air=1)	<b>pH:</b> 7

### Section 10: Stability and Reactivity

**Stability:** Stable at normal temperatures and pressures.

**Conditions to avoid:** Temperatures over 40°C, ignition sources, and incompatible substances.

**Incompatibilities:** Alkali and alkaline earth metals; powdered aluminum, zinc, magnesium, and beryllium; strong bases.

**Polymerization:** Will not occur.

**Decomposition:** Halogens, halogen acids, possibly carbonyl halides, carbon dioxide, and carbon monoxide.

### Section 11: Toxicological Information

**Sensitization:** (effects of repeated exposure) No

**Carcinogenicity:** (risk of cancer) No

**Teratogenicity:** (risk of malformation in an unborn fetus) No

**Reproductive Toxicity:** (risk of sterility) No

**Mutagenicity:** (risk of heritable genetic effects) No

<b>Lethal Exposure Concentrations:</b>	<b>Ingestion (LD50):</b> 5g/kg (rat)	<b>Inhalation (LC50):</b> >100000ppm/4h	<b>Skin (LD50):</b> n/e
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### Section 12: Ecological Information

**General Information:** Avoid runoff into storms and sewers which lead into waterways. Water runoff can cause environmental damage.



**Environmental Impact Data:** (percentage by weight)

**CFC:** 0      **HFC:** 30      **Cl.Solv.:** 0      **VOC:** 0      **HCFC:** 0      **ODP:** 0

### Section 13: Disposal Information

**General Information:** Dispose of in accordance with all local, provincial, state, and federal regulations. Water runoff can cause environmental damage.

### Section 14: Transportation Information

**Ground:**

Consumer Commodity, ORM-D

**Air:**

Shipper must be trained and certified. Refer to IATA regulations.

**Sea:**

Shipper must be trained and certified. Refer to IMDG regulations.

### Section 15: Regulatory Information

**This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations. SARA (Superfund Amendments and Reauthorization Act of 1986, USA, 40 CFR 372.4)**

None of the chemicals in this product have a reportable quantity.

**EPCRA (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45)**

This product does not contain any chemicals subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

**TSCA (Toxic Substances Control Act of 1976, USA)**

All substances are TSCA listed.

**CAA (Clean Air Act, USA)**

This product does not contain any class 1 ozone depletors.

This product does not contain any class 2 ozone depletors.

This product does not contain any chemicals listed as hazardous air pollutants.

**California Proposition 65 (Chemicals known to cause cancer or reproductive toxicity, May 1, 1997 revision, USA)**

This product does not contain any chemicals listed.

**Health Canada**

Labeling and containers used in this product are listed in compliance with Consumer Chemicals and Container regulations.

**Environment Canada**

Chemicals in this product are listed on the Domestic Substances List in the Canadian Environmental Protection Act

This product does not contain any ozone depleting substances.

**Industry and Science Canada**

Labeling, product identity, net quantity declaration, minimum printing type size heights, and packaging of this product is in compliance with the Consumer Packaging and Labeling Act and Regulations. This product is not slack filled in accordance to chapter 4 prohibitions.

**RoHS (The restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2004).**

This product is RoHS compliant.

### Section 16: Other Information

**Definitions:** n/a = not applicable, n/e = not established

**Disclaimer:** This material safety data sheet is provided as an information resource only. M.G. Chemicals believes the



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information contained herein is accurate and compiled from reliable sources. It is the responsibility of the user to verify its validity. The buyer assumes all responsibility of using and handling the product in accordance with federal, state, and local regulations.