



Section 1 – Company and Chemical Identification

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Emergency Phone: 1-800-535-5053 (InfoTrac) International Phone: 352-323-3500 Phone: 1-800-445-7680 Issue Date: 8/30/09 Product Name: Fire Extinguisher / System

Product Name: 3M™ Novec™ 1230 Fire Protection Fluid [FK-5-1-12]

Section 2: Hazards Identification

2.1 Emergency Overview

Odor, Color, Grade: Clear colorless, low odor gas.

2.2 Potential Health Effects

(Acute Exposure):

Eye Contact

Contact with the eyes during product use is not expected to result in significant irritation.

Skin Contact: Contact with the skin during product use is not expected to result in significant irritation.

Inhalation: Prolonged or repeated exposure, above recommended guidelines, may be absorbed following inhalation and cause target organ effects.

Ingestion: No health effects are expected.

Chronic Exposure:

FOR HUMANS:

EU Classification: This product is not classified as dangerous according to Directive 1999/45/EC.

Limit Values for Exposure: 1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone.

TWA Limit: 150 ppm. Limit set by 3M Company.

Neither this preparation nor the substances contained in it have been listed as carcinogenic by National Toxicology Program, I.A.R.C., or OSHA.

AS PART OF GOOD INDUSTRIAL AND PERSONAL HYGIENE AND SAFETY PROCEDURE, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes, and clothing. DO NOT eat, drink or smoke when using this product.

Prolonged or repeated exposure, above recommended guidelines, may cause liver effects. Signs / symptoms may include loss of appetite, weight loss, fatigue, weakness, abdominal tenderness and jaundice.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: None known.

FOR ENVIRONMENT: No harm to the environment is expected from an accidental release of this preparation. See Section 12, ECOLOGICAL INFORMATION.

Section 3: Composition/Information on Ingredients

Table with 6 columns: C.A.S., Ingredient Name, OSHA PEL, ACGIH TLV, OSHA STEL, %

There are NO substances presenting a health or environmental hazard within the meaning of Directive 67/548/EEC, in concentrations equal to or greater than those laid down in the table set out in Article 3 (3) of Directive 1999/45/EC, nor with lower limits given in Annex I to Directive 67/548/EEC or in Annexes II, III or V to Directive 1999/45/EC.

There are NO substances for which there are Community workplace exposure limits, which are not already included in above.

NOTE: Unless a component presents a severe hazard, it does not need to be considered in the MSDS if the concentration is less than 1%. [According to Directive 1999/45/EC.]

Section 4: First Aid Measures

4.1 First Aid Procedures

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Flush eyes with large amounts of water. If signs / symptoms persist, get medical attention.

Skin Contact: Wash affected area with soap and water. If signs / symptoms develop, get medical attention.

Inhalation: If signs / symptoms develop, remove person to fresh air. If signs / symptoms persist, get medical attention.

If Swallowed: Do not induce vomiting. Give victim two glasses of water. Never give anything by mouth to an unconscious person. If signs / symptoms develop, get medical attention.

Section 5: Fire Fighting Measures

5.1 Flammable Properties

Autoignition temperature: *Not Applicable.*

Flash Point: *Not Applicable.*

Flammable Limits - LEL [Details: Nonflammable].

Flammable Limits - UEL [Details: Nonflammable].

5.2 Extinguishing Media

Product is a fire-extinguishing agent.

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Not applicable.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

Section 6: Accidental Release Measures

For personal protection: Prevent skin and eye contact, see Section 8 EXPOSURE CONTROLS / PERSONAL PROTECTION.

Clean up: Ventilate the area with fresh air. Contain spill. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry.

Collect as much of the spilled material as possible. Clean up residue. Place in a metal container approved for transportation by appropriate authorities. Seal the container. Dispose of collected material as soon as possible.

See Section 13, DISPOSAL CONSIDERATIONS.

NO harm to the environment is expected from an accidental release of this preparation.

See Section 12, ECOLOGICAL INFORMATION.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

Section 7: Handling and Storage

7.1 Handling

Contents under pressure. Avoid breathing of vapors, mists or spray. Avoid eye contact with vapors, mists, or spray. Handle, transport and store carefully and securely to avoid accidental knocking over or other severe physical impacts. Do not expose to direct heat sources. See incompatibility information in Section 10, STABILITY AND REACTIVITY.

7.2 Storage

Keep container in well-ventilated area. Do not store in temperature above 130°F (54°C). See incompatibility information in Section 10, STABILITY AND REACTIVITY. There is minimal danger to the environment from a storage release. See Section 12, ECOLOGICAL INFORMATION.

7.3. Specific use

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT / SYSTEM.

Section 8: Exposure Controls / Personal Protection

8.1 Personal Protective Equipment (PPE)

Proper handling should not incur exposure to agent. As a precaution for accidental discharge or leakage, the following should be followed:

8.1.1 Eye / Face Protection

Avoid eye contact.

The following eye protection(s) are recommended: Indirect Vented Goggles.

8.1.2 Skin Protection

Avoid prolonged or repeated skin contact.

Select and use gloves and / or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and / or protective clothing manufacturer for selection of appropriate compatible materials.

Gloves made from the following material(s) are recommended: Butyl Rubber.

8.1.3 Respiratory Protection

Avoid breathing of vapors, mists or spray. Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection.

Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: Half face piece or full face air-purifying respirator with organic vapor cartridges. Consult the current 3M Respiratory Selection Guide for additional information or call 1-800-243-4630 for 3M technical assistance. If thermal decomposition occurs, wear supplied air respiratory protection.

8.1.4 Prevention of Swallowing

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

8.1.5 Hand protection

Butyl Rubber gloves are recommended. Select and use gloves and / or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and / or protective clothing manufacturer for selection of appropriate compatible materials.

8.2 Exposure Limit Values

1,1,1,2,2,4,5,5-Nonfluoro-4-(trifluoromethyl)-3-pentanone

TWA Limit: 150 ppm. Limit set by 3M Company.

8.3 Environmental exposure controls

There is minimal danger to the environment from a storage release. See Section 12, ECOLOGICAL INFORMATION.

Section 9: Physical And Chemical Properties

Specific Physical Form: Liquid and gas mixture

General Physical Form: Liquid and gas

Flash Point: *Not Applicable*

Flammable Limits - UEL [*Details:* Nonflammable]

Vapor Density: 11.6 [*Ref Std:* AIR=1]

Specific Gravity: 1.6 [*Ref Std:* WATER=1]

Melting point -108°C

Evaporation rate: > 1 [*Ref Std:* BUOAC=1]

Percent volatile: 100 %

Viscosity: 0.6 centipoise [@ 25°C]

Odor, Color, Grade: Clear colorless, low odor.

Autoignition temperature: *Not Applicable*

Flammable Limits - LEL [*Details:* Nonflammable]

Boiling point: 49°C (120.6°F)

Vapor Pressure: 244 mmHg [@ 20 °C]

pH: *Not Applicable*

Solubility in Water: Nil

Volatile Organic Compounds: *No Data Available*

VOC Less H2O & Exempt Solvents: *No Data Available*

Section 10: Stability and Reactivity

Stability: Stable under normal conditions of handling and use.

Materials and Conditions to Avoid: Strong bases; Amines; Alcohols: Avoid direct sunlight and ultraviolet light for extended periods.

Do not store above 130°F (54°C) taking into account effects of sunlight.

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products:

Combustion or decomposition products include carbon monoxide, carbon dioxide, and hydrogen fluoride.

Section 11: Toxicological Information

Toxicity Data: Inhalation LC50 (rat) >10 % v/v.

NOAEL for cardiac sensitization >10 % v/v.

Section 12: Ecological Information

12.1. Ecotoxicity: Not determined.

12.2. Mobility: Product is highly insoluble in water and volatile.

12.3. Persistence and degradability: Photolytic half-life is 3 to 5 days. The persistent photolytic degradation product is trifluoroacetic acid.

12.4. Bioaccumulative potential: Not determined.
12.5. Other adverse effects: Ozone depletion potential: None.
Photochemical ozone creation potential: None.
Global warming potential: 1.

Section 13: Disposal Considerations

Waste Disposal Method: Reclaim if feasible. For information on product return, contact Sea-fire Marine.
Incinerate in an industrial or commercial facility in the presence of a combustible material. Combustion products will include HF.
Facility must be capable of handling halogenated materials.
As a disposal alternative, dispose of waste product in a facility permitted to accept chemical waste. **EPA Hazardous Waste Number (RCRA):** Not regulated.
Since regulations vary, consult applicable local regulations or authorities before disposal.

Section 14: Transport Information

Hazard Class or Division: 2.2. Label: Non flammable gas.
Proper Shipping Name: Compressed Gas, n.o.s, (nitrogen and fluorinated ketone mixture)
ID Number: UN 1956 Packing Group: N/A Packing Instructions: 200
For additional transport information, contact Sea-Fire Marine.
No harm to the environment is expected from this preparation. See Section 12, ECOLOGICAL INFORMATION.

Section 15: Regulatory Information

EU Classification: This product is not classified as dangerous according to Directive 1999/45/EC.
Exposure Limit Values: 1,1,1,2,2,4,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone.
TWA Limit: 150 ppm. Limit set by 3M Company.
EINECS Status: The component of this product has been notified to ELINCS (European List of Notified or New Chemical Substances). Certain restrictions apply. Contact your distributor for additional information.
EPA TSCA Status: All components are included in TSCA inventories or are exempt from listing.
Canadian DSL (Domestic Substances List): All components are included in the DSL or are exempt from listing.
The product also complies with the chemical notification requirements for Korea (KECI), Australia (AICS), Japan (METI), and China (CICS).
Environmental restrictions: None are known.
Restrictions on Marketing and Use: None are known.
Refer to any other national measures that may be relevant.

Section 16: Other Information

Format is from directive 2001/58/EC.
There is no data in EINECS <http://exb.jrc.it/existing-chemicals/>.
Data used to compile the data sheet is from 3M Material Safety Data Sheet, Jan. 21, 2004 and other product literature.
The EU Classification is in accordance with Directive 1999/45/EC.
(WHMIS) CANADIAN WORKPLACE HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:
This product is rated: **Not Hazardous.**
HAZARDOUS MATERIAL IDENTIFICATION SYSTEM (HMIS) CODES:
HEALTH: 1 (slight hazard); FLAMMABILITY: 0 (will not burn); REACTIVITY: 0 (normally stable); PPE: See Section 8

Section 17: Disclaimer of Expressed and Implied Warranties

Metalcraft / Sea-Fire Marine, Inc. has taken reasonable care in preparing this document, however, since the use of this information and the conditions of use of the product are not within the control of Metalcraft / Sea-Fire Marine, Inc., it is the user's obligation to determine the conditions of safe use of this product. The information in this document is offered with no warranties or representations as to accuracy or completeness and it is the responsibility of each individual to determine the suitability of the information for their particular purpose(s).