



MATERIAL SAFETY DATA SHEET

3M™ Novec™ 1230

A UTC Fire & Security Company

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

Product Name	3M™ Novec™ 1230
Other Trade Names	
Product Description	Fire Extinguishing Agent
Manufacturer/Supplier	Fenwal Protection Systems
Address	400 Main Street Ashland, MA 01721 USA
Phone Number	(508) 881-2000
Chemtrec Number	(800) 424-9300
(for emergencies only)	(703) 527-3887 (International)
Revision Date:	February 9, 2012
MSDS Date:	February 9, 2009

Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)

2. HAZARDS IDENTIFICATION

EU Main Hazards
R36 Irritating to eyes.

Routes of Entry

Eye contact - Inhalation - Skin contact - Ingestion

Carcinogenic Status

Not considered carcinogenic by NTP, IARC, and OSHA.

Target Organs

Eyes - Respiratory system

Health Effects - Eyes

Contact may cause slight irritation.

Health Effects - Skin

Not expected to cause irritation.

Health Effects - Ingestion

Not a likely route of exposure. No adverse effects are expected.

Health Effects - Inhalation

If thermal decomposition occurs, may be harmful if inhaled.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
1,1,1,2,2,4,5,5,5,-Nonafluoro-4-(trifluoromethyl)-3-pentanone	756-13-8	>99.9%	R36	Xi

4. FIRST AID MEASURES

Eyes

Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.



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4. FIRST AID MEASURES

Skin

Flush with water. Obtain medical attention if symptoms persist.

Ingestion

Ingestion is not considered a potential route of exposure.

Inhalation

Remove from exposure. If there is difficulty in breathing, give oxygen. Obtain medical attention immediately.

Advice to Physicians

Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Extinguishing Media

3M™ Novec™ 1230 is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep containers and surroundings cool with water spray as containers may rupture or burst in the heat of a fire.

Unusual Fire and Explosion Hazards

Containers may explode in heat of fire. Predominant decomposition product is hydrogen fluoride in fire situations. By-products are irritating and potentially toxic.

Protective Equipment for Fire-Fighting

Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Wear full protective clothing. Remove leaking cylinder to a well ventilated area. Contain and absorb using earth, sand or other inert material. Transfer into suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

Containers should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll containers. Do not drop containers or permit them to strike against each other. Never apply flame or localized heat directly to any part of the container. Store away from sources of heat or ignition. Storage area should be: - cool - dry - well ventilated - under cover - out of direct sunlight - away from incompatible materials (see Section 10)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Standards

3M™ Novec™ 1230

Manufacturer's recommended exposure limit: 150 ppm, 8 hr TWA

Engineering Control Measures

Use with adequate ventilation. Use local exhaust ventilation for open containers. There should be local procedures for the selection, training, inspection and maintenance of this equipment.

Respiratory Protection

Not normally required. If thermal decomposition occurs, use a self contained breathing apparatus.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Hand Protection

Protective Gloves

Eye Protection

Chemical goggles or safety glasses with side shields.

Body Protection

Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Color	Colorless
Odor	Slight
Specific Gravity	1.6
Boiling Range/Point (°C/F)	49.2 °C/120.6 °F
Melting Range/Point (°C/F)	-108 °C/-162.4 °F
Flash Point (PMCC) (°C/F)	Not Flammable
Solubility in Water	Nil
Vapor Density (Air = 1)	11.6
Vapor Pressure	0.404 bar (5.87 psig) @ 25 °C
VOC	1600 g/l
Evaporation Rate (Butyl Acetate =1)	>1

10. STABILITY AND REACTIVITY

Stability

Stable under normal conditions.

Conditions to Avoid

Exposure to direct sunlight - ultraviolet light

Materials to Avoid

Strong bases – amines - alcohols

Hazardous Polymerization

Will not occur.

Hazardous Decomposition Products

Oxides of carbon - hydrogen fluoride

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

NOAEL for cardiac sensitization: 10% v/v

Inhalation Study: No signs of acute toxicity were observed during a 4-hr acute inhalation study (rat) at 10%, a 2-hr. acute inhalation study (rat) at 10% and a 28 day acute inhalation study (rat) at 2.0%.

Chronic Toxicity/Carcinogenicity

This product is not expected to cause long term adverse health effects.

11. TOXICOLOGICAL INFORMATION

Genotoxicity

Not mutagenic in Ames assay.

Reproductive/Developmental Toxicity

This product is not expected to cause adverse reproductive effects.

12. ECOLOGICAL INFORMATION

Mobility

Product is highly insoluble in water and volatile.

Persistence/Degradability

Photolytic half-life: 3 - 5 days

Persistent Photolytic degradation product: trifluoroacetic acid.

Bio-accumulation

No data available.

Ecotoxicity

No data available.

13. DISPOSAL CONSIDERATIONS

Dispose of container in accordance with all applicable local and national regulations. Do not cut, puncture or weld on or near the container. If spilled, contents will vaporize to the atmosphere.

14. TRANSPORT INFORMATION

DOT CFR 172.101 Data	Compressed Gases, n.o.s. (C-6 Perfluoroketone), 2.2, UN1956
UN Proper Shipping Name	Compressed Gases, n.o.s. (C-6 Perfluoroketone)
UN Class	(2.2) Non-Flammable Gas
UN Number	UN1956
UN Packaging Group	Not applicable

15. REGULATORY INFORMATION

EU Label Information

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments(2001/60/EC and 2006/8/EC)

EU Hazard Symbol and Indication of Danger.

Xi - Irritant

R phrases

R36 Irritating to eyes.

S phrases

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS**TSCA Listing**

This product contains ingredients that are listed on or exempt from listing on the EPA Toxic Substance Control Act Chemical Substance Inventory.

15. REGULATORY INFORMATION

ELINCS Listing

All ingredients in this product have been verified for listing on the European List of Notified Chemical Substances (ELINCS).

DSL/NDSL (Canadian) Listing

All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

WHMIS Classification

D2B

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

MA Right To Know Law

All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimis concentration include: None

PA Right To Know Law

This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: None

NJ Right To Know Law

This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: None

California Proposition 65

This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

SARA Title III Sect. 302 (EHS)

This product does not contain any chemicals subject to SARA Title III Section 302.

SARA Title III Sect. 304

This product does not contain any chemicals subject to SARA Title III Section 304.

SARA Title III Sect. 311/312 Categorization

- Immediate (Acute) Health Hazard - Pressure Hazard

SARA Title III Sect. 313

This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

16. OTHER INFORMATION

NFPA Ratings

NFPA Code for Health - 3

NFPA Code for Flammability - 0

NFPA Code for Reactivity - 1

NFPA Code for Special Hazards - None

HMIS Ratings

HMIS Code for Health - 0

HMIS Code for Flammability - 0

HMIS Code for Reactivity - 1

HMIS Code for Personal Protection - See Section 8



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16. OTHER INFORMATION

Abbreviations

N/A: Denotes no applicable information found or available

CAS#: Chemical Abstracts Service Number

ACGIH: American Conference of Governmental Industrial Hygienists

OSHA: Occupational Safety and Health Administration

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit

NTP: National Toxicology Program

IARC: International Agency for Research on Cancer

R: Risk

S: Safety

NOAEL: No Observed Adverse Effect Level

Prepared By: EnviroNet LLC.

The information contained herein is based on data believed to be accurate. However, no representation, warranty, or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for its own particular use. Fenwal Protection Systems assumes no responsibility for personal injury or property damage resulting from use, handling or from contact with this product.
