



SDS (Safety Data Sheet)

SECTION 1. IDENTIFICATION

Product identifier: 3M™ Novec™ 1230 [FK-5-1-12] (Fire extinguishing agent)
 Product identification numbers: 98-0212-3203-2, 98-0212-3217-2, 98-0212-3414-5
 Intended Use: Streaming and flooding fire extinguishing agent

Manufacturer/Supplier: Fireboy-Xintex, Inc. Fireboy-Xintex, Ltd.
 O-379 Lake Michigan Dr. Unit 10 Holton, Holton Ind. Estates
 Grand Rapids, MI 49534 Poole Dorset BH16 6LT UK
 1-616-735-9380 44 (0) 845 9462

SECTION 2. HAZARDS IDENTIFICATION

OSHA/HCS status: This material is considered hazardous by OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification of substance or mixture: Gases under Pressure

GHS label elements:
 Hazard Pictograms:



Signal word: Warning

Hazard statements: H280: Contains gas under pressure; may explode if heated
 P210: Keep away from heat/spark/open flame. – No smoking
 P233: Keep container tightly closed in a cool/well-ventilated place
 P260: Do not breathe dust/fumes/gas/vapors/spray
 P273: Avoid release to the environment
 P280: Wear protective gloves/protective clothing/eye protection/face protection
 P403: Use and store only in a well-ventilated area

Other Hazards: May cause frostbite
 May displace oxygen and cause rapid suffocation
 Overheating and over pressurizing may cause gas release or violent cylinder bursting

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	756-13-8	99.5%

SECTION 4: FIRST AID MEASURES

Inhalation: Remove person to fresh air. If you are concerned, get medical advice.
 Skin Contact: Wash with soap and water. If signs/symptoms develop, get medical attention.
 Eye Contact: Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.
 If Swallowed: Rinse mouth. If you feel unwell, get medical attention.

SECTION 5. FIRE FIGHTING MEASURES

Suitable extinguishing media: Product is a fire-extinguishing agent. Material will not burn. Use a fire fighting agent suitable for the surrounding fire.

Special hazards arising from the substance or mixture: Exposure to extreme heat can give rise to thermal decomposition.

Hazardous Decomposition or By-Products:

<u>Substance</u>	<u>Condition</u>
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Fluoride	During Combustion
Toxic Vapor, Gas, Particulate	During Combustion

Special protective actions for fire-fighters: When fire fighting conditions are severe and total thermal decomposition of the product is possible, wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

Environmental precautions: Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry in to sewer systems or bodies of water.

Methods and material for containment and cleaning up: Contain spill. 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. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Seal the container. Dispose of collected material as soon as possible.

SECTION 7. HANDLING AND STORAGE

Handling: For industrial or professional use only. Contents may be under pressure, open carefully. Do not breathe thermal decomposition products. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment.

Storage: Protect from sunlight. Do not store in temperature above 130°F (54°C). Store away from strong bases. Store away from amines.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: Provide appropriate local exhaust when product is heated. For those situations where the material might be exposed to extreme overheating due to misuse or equipment failure, use with appropriate local exhaust ventilation sufficient to maintain levels of thermal decomposition products below their exposure guidelines. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

Eye/face protection: Eye protection not required.

Skin/hand protection: No protective gloves required

Respiratory protection: Use a positive pressure supplied-air respirator if there is a potential for over exposure from an uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection. If thermal degradation products are expected, use a full face piece supplied-air respirator.

Exposure limits: Not established.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form:	Liquid
Odor, Color, Grade:	Clear, colorless, low odor.
General Physical Form:	Liquid
Auto ignition temperature:	<i>Not Applicable</i>
Flash Point:	No flash point
Flammable Limits (LEL):	None detected
Flammable Limits (UEL):	None detected
Boiling Point:	49 °C [@ 760 mmHg]
Vapor Density:	11.6 [Ref Std: AIR=1]
Vapor Pressure:	40.4 kPa [@ 25 °C]
Specific Gravity:	1.6 [Ref Std: WATER=1]
pH:	<i>Not Applicable</i>
Melting point:	-108 °C
Solubility in Water:	Nil
Evaporation rate:	> 1 [Ref Std: BUOAC=1]
Volatile Organic Compounds:	1600 g/l [Test Method: calculated SCAQMD rule 443.1]
Kow - Oct/Water partition coef:	<i>Not Applicable</i>
Percent volatile:	100 %
VOC less H2O & Exempt Solvents:	1600 g/l [Test Method: calculated SCAQMD rule 443.1]
Viscosity:	0.6 centipoise [@ 25 °C]

SECTION 10. STABILITY AND REACTIVITY

Chemical stability: Stable
Conditions to avoid: Light
Materials to avoid: Strong bases, Amines, Alcohols
Hazardous Polymerization: Hazardous polymerization will not occur.
Hazardous Decomposition or By-Products:

<u>Substance</u>	<u>Condition</u>
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Fluoride	During Combustion
Toxic Vapor, Gas, Particulate	During Combustion

SECTION 11. TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the SDS for Toxicological Information on this material and/or its components.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicological information:

<u>Test Organism</u>	<u>Test Type</u>	<u>Result</u>
Green algae, Selenastrum capricornutum	72 hrs Effect Conc. 50%	7.7 mg/l
Zebra Fish, Brachydanio rerio	96 hrs Lethal Conc. 50%	>1200 mg/l
Water flea, Daphnia magna	48 hours Effect Concentration 50%	>1200 mg/l
Green algae, Selenastrum capricornutum	72 hours No obs Effect Conc	1.2 mg/l

Please contact the address listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information: Not determined
Photolytic half-life: 3-5 days

Photolytic degradation products may include Trifluoroacetic acid (TFA)

NOTE: Hydrolysis is not expected to be a significant degradation pathway. Product is highly insoluble in water and volatile, and use as a clean extinguishing agent would not typically result in releases to aquatic environments.

SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of contents/container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include HF. Facility must be capable of handling halogenated materials. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14. TRANSPORT INFORMATION

ID Number(s): 98-0212-3031-7, 98-0212-3201-6, 98-0212-3203-2, 98-0212-3217-2, 98-0212-3371-7, 98-0212-3414-5, 98-0212-3588-6

Novec 1230 by itself is not regulated by DOT

Or – If packaged as a charged Fire Extinguisher...

DOT	UN number:	1044
	Proper shipping name:	Fire Extinguishers
	Class:	2.2 (Non-Flammable Gas)
	Labelling No. :	2.2
IATA_C	UN number:	1044
	Proper shipping name:	Fire Extinguishers
	Class:	2.2 (Non-Flammable Gas)
	Labelling No. :	2.2

