


# Safety Data Sheet

## Section 1 – Chemical Product and Company Identification

<b>Product Name</b>	FK-5-1-12
<b>Chemical Name</b>	1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone
<b>Synonym</b>	FLUOROKETONE, Perfluoro(2-Methyl-3-Pentanone), NOVEC1230™
<b>Product Use</b>	Fire extinguishing agent
<b>Manufacturer</b>	Shanghai Waysmos Fine Chemical Co., Ltd.
<b>Distributor</b>	Waysmos USA Inc
<b>Address</b>	2032 Robert Browning St, Austin, Texas 78723
<b>Email</b>	contact@waysmosusa.com
<b>Telephone</b>	+1-646-593-8882
<b>Emergency</b>	800-255-3925 - Contract# MIS0008074 (VelocityEHS)

## Section 2 –Hazard Identification

<b>Hazard classification</b>	This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)
<b>Hazard pictograms</b>	
<b>Signal word</b>	Warning
<b>Hazard statements</b>	H412: Harmful to aquatic life with long lasting effects.
<b>Precautionary statements</b>	P261: Avoid breathing vapours. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing.
<b>Other Hazard</b>	Overheating and over pressurizing may cause gas release or violent container bursting.

## Section 3 – Composition/Information on Ingredients

Ingredient name	CAS No.	%(weight)
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	756-13-8	≥99.0

## Section 4 – First Aid Measures

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<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately
<b>Skin</b>	Remove and isolate contaminated clothing and shoes. Wash immediately with plenty of soap and water. Get medical attention if frostbitten by liquid or if irritation persists
<b>Eyes</b>	Immediately flush with large amounts of water for at least 15 minutes Get medical attention if irritation occurs
<b>Ingestion</b>	DO NOT induce vomiting unless instructed to do so by a physician. Get medical attention immediately if symptoms develop.
<b>Note to physician</b>	Immediate medical attention is not required When symptoms persist or in all cases of doubt seek medical advice

### **Section 5 – Fire Fighting Measures**

<b>Extinguishing media</b>	Product is a fire extinguishing media. Use media appropriate for surrounding material
<b>Special hazards arising from the substance or mixture</b>	Thermal decomposition may cause toxic products Containers may explode in heat of fire.
<b>Special protective equipment for firefighters</b>	Wear self-contained breathing apparatus with a full face-piece operated in positive pressure mode and chemical-protective clothing. Prevent fire extinguishing water from contaminating surface water or the ground water system

### **Section 6 – Accidental Release Measures**

<b>Personal precautions, protective equipment and emergency procedures</b>	Refer to section 8 of SDS for personal protection details. Wear mask and appropriate protective clothing for daily operation. Prevent skin and eye contact. Keep unprotected persons away. If outside do not approach from downwind.
<b>Environmental precautions</b>	Do not discharge into drains/surface waters/groundwater
<b>Methods and material for containment and cleaning up</b>	Evacuate area. Keep upwind. Stop leak if without risk. Ventilate area especially low places remove open flames and heating elements. Disperse it with floor level forced air
<b>Reference to other SECTIONS</b>	See SECTION 7 for information on safe handling See SECTION 8 for information on personal protection equipment See SECTION 13 for information on disposal

### **Section 7 – Handling and Storage**

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## Handling

Avoid direct contact with the substance. Wash thoroughly after handling. Ensure there is sufficient ventilation of the area. Do not handle in a confined space. Avoid the formation or spread of mists in the air. Contents may be under pressure, open carefully. Do not breathe thermal decomposition products. For industrial or professional use only. Do not eat, drink or smoke when using this product. 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.

## Storage

Store in dry, cool, well ventilated area. Keep container tightly closed. Keep out of direct sunlight and ultraviolet, keep away from incompatible materials, water, keep away from sources of heat or ignition. Containers should be properly stored and secured to prevent falling or being knocked over.

## Section 8 –Exposure Controls/Personal Production

### 8.1 Control parameters

**Occupational exposure limit values** 150 ppm, 8 hr TWA

### 8.2 Exposure controls

**Appropriate engineering controls** Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits

### Personal protective equipment

**Respiratory Protection** Self-contained breathing apparatus or full facepiece supplied-air respirator must be available in case of emergency.

**Skin Protection** Wear protective gloves/clothing to prevent contact

**Eye Protection** Safety glasses/chemical splash goggles

**Environmental exposure controls** Do not empty into drains

## Section 9 – Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

<b>Appearance</b>	Liquid
<b>Color</b>	colorless
<b>Odour</b>	Low odor
<b>pH</b>	Not available
<b>Melting point</b>	-108°C
<b>Boiling point</b>	49 °C
<b>Flash point</b>	Not available
<b>Evaporation rate</b>	> 1(BUOAC = 1.0)
<b>Flammability (solid, gas)</b>	Not flammable
<b>Upper/lower flammability or explosive limits</b>	Not available
<b>Vapour pressure</b>	40.4 Kpa (25°C)
<b>Specific gravity (H<sub>2</sub>O=1)</b>	1.6 g/cm <sup>3</sup>
<b>Solubility(ies)</b>	Not available
<b>Partition coefficient: n-octanol/water</b>	log Kow = 2.11

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Auto-ignition temperature Not available  
Viscosity 0.6 mPa.s (25°C)

## Section 10 – Stability and Reactivity

**Reactivity** Stable under recommended storage and handling conditions (see SECTION 7, handling and storage)  
**Chemical stability** Stable under normal conditions of use  
**Possibility of hazardous reactions** No known hazardous reactions  
**Conditions to avoid** Keep away from heat and ignition sources. Protect from sunlight  
**Incompatible materials** Strong oxidizing materials, Strong acids and bases  
**Hazardous decomposition products** Thermal decomposition can lead to release of irritating or toxic gases/vapors: carbon oxides, hydrogen fluoride

## Section 11 – Toxicological Information

### 11.1 Information on toxicological effects

#### Acute Toxicity

Ingredient name	LD50 Oral(rat)	LD50 Dermal (rat)	LC50 Inhalation (rat)
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	> 2,000 mg/kg	> 2,000 mg/kg	>1,227 mg/l/4h (>10% by volume)

**Skin corrosion/irritation** No information available  
**Serious eye damage/irritation** No information available  
**Respiratory or skin sensitization** No information available  
**Germ cell mutagenicity** No information available  
**Reproductive toxicity** No information available  
**STOT-single or multiple exposure** No information available  
**NOAEL & LOAEL (V/V)** 10% & >10%  
**Aspiration hazard** No information available  
**Carcinogenicity** Not listed as a carcinogen by NTP, IARC, or OSHA

## Section 12 – Ecological Information

**Toxicity (Ecotoxicity Fish, LC<sub>50</sub>)** >1200 mg/l (Zebra Fish, 96h)  
**Degradability** Atmospheric lifetime is approximately 0.014 years(5 days)  
**Bioaccumulation/ Accumulation** No data available  
**Mobility in Environmental Media** Not available  
**Other adverse effects** Ozone Depletion Potential (CFC 11 = 1.0): 0.00  
Global Warming Potential (CO<sub>2</sub> = 1.0): 1.00

## Section 13 –Disposal Considerations

### Waste Disposal Method

Disposal must be made according to local and national regulations. Empty containers should be taken for local recycling, recovery or waste disposal.

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## Section 14—Transport Information

ITEM	LAND <input type="checkbox"/> EU: ADR/RID <input type="checkbox"/> US: DOT	SEA IMDG	AIR ICAO / IATA
UN-Number	General cargo	General cargo	General cargo
Packaging Group			

Special precautions for user                      None determined

## Section 15—Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**  
**Listed in international inventories:**

Ingredient name	TSCA	DSL	NDSL	ELINCS	ENCS	CHINA	KECL	PICCS	AICS
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-penta none	YES	YES	NDA	YES	YES	YES	YES	YES	YES

## Section 16 – Other Information

In accordance with good practices of personal cleanliness and hygiene handle with the care and avoid unnecessary contact with this product.

This information is being supplied to you under OSHA Hazard Communication Standard 29 CFR 1910.1200 and is offered in good faith as typical values and not as a product specification. The information contained herein is based on the data available to us and is believed to be true and accurate.

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