

Section 1 – Chemical Product and Company Identification

Product Name	Chemori5112
Chemical	1,1,1,2,2,4,5,5,5,-Nonafluoro-4-(trifluoromethyl)-3-pentanone
Name Synonym	Dodecafluoro-2-methylpentan-3-one, Perfluoro(2-Methyl-3-Pentanone), NOVEC1230™
Product Use	Fire Extinguishing Agent
Manufacturer	Chemori Industries Pte. Ltd.
Address	No.29 Loyang Drive, Singapore, 508944
Email	sales@firesafetysci.com
Telephone	+1 508-456-6212

Section 2 –Hazard Identification

OSHA/HCS status	This material is not classified as hazardous according to the OSHA Hazard Communication Standard (29 CFR 1910.1200)
Classification of the substance or mixture	Not classified
GHS label elements	Not applicable
Hazard pictograms	Not applicable
Signal word	Warning
Hazard statements	H317: May cause an allergic skin reaction H319: Causes serious eye irritation
Precautionary statements	P233: Keep container tightly closed in a cool/well-ventilated place P260: Do not breathe dust/fumes/gas/vapours/spray P273: Avoid release to the environment P280: Wear protective gloves/protective clothing/eye protection/face protection P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
Other Hazard	May decompose on contact with flames or extremely hot metal surfaces to produce toxic and corrosive products. In high concentrations, vapors may reduce oxygen available for breathing. Liquid contact with eyes or skin may cause mild irritation.

Section 3 – Composition/Information on Ingredients

Ingredient name	CAS No.	%(weight)
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1,1,1,2,2,4,5,5,5,-Nonafluoro-4-(trifluoromethyl)-3-pentanone	756-13-8	≥99.60
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Section 4 – First Aid Measures

Inhalation	Move to fresh air Oxygen or artificial respiration if needed If unconscious, place in recovery position and get medical attention immediately
Skin	Flush exposed skin with lukewarm water (not hot), or use other means to warm skin slowly Remove contaminated clothing and shoes Get medical attention if frostbitten by liquid or if irritation persists
Eyes	Immediately flush with large amounts of water for at least 15 minutes Get medical attention if irritation occurs
Ingestion	DO NOT induce vomiting unless instructed to do so by a physician. Get medical attention immediately if symptoms develop.
Note to	Immediate medical attention is not required When symptoms persist or in all cases of doubt seek medical advice

Section 5 – Fire Fighting Measures

Extinguishing media	Product is a fire extinguishing media. Use media appropriate for surrounding material
Special hazards arising from the substance or mixture	Thermal decomposition may cause toxic products Containers may explode in heat of fire.
Special protective equipment for firefighters	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

Personal precautions, protective equipment and emergency procedures	Refer to SECTION 8 for personal protective equipment. Prevention of skin and eye contact. Ensure adequate ventilation. Remove all sources of ignition. Shut off supply if this can be done safely.
Environmental precautions	Do not discharge into drains/surface waters/groundwater
Methods and material for containment and cleaning up	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
Reference to other SECTIONS	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

Handling	Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement
Storage	Keep container tightly closed and in a cool, well-ventilated place. Keep out of direct sunlight. Keep away from heat and ignition sources
Packing material	Steel drum

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 In case of inadequate ventilation wear respiratory protection

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

Appearance	Liquid
Color	colorless
Odour	Low odor
pH	Not available
Melting point	-108°C
Boiling point	49 °C
Flash point	Not available
Evaporation rate	> 1(BUOAC = 1.0)
Flammability (solid, gas)	Not flammable
Upper/lower flammability or explosive limits	Not available
Vapour pressure	40.4 Kpa (25°C)
Specific gravity (H₂O=1)	1.6 g/cm ³
Solubility(ies)	Not available
Partition coefficient: n-octanol/water	log Kow = 2.11
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 exposure	No information available
STOT-repeated exposure	No information available
Aspiration hazard	No information available
Carcinogenicity	Not listed as a carcinogen by NTP, IARC, or OSHA

Section 12 – Ecological Information

Toxicity (Ecotoxicity Fish, LC 50)	>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 (CO2 = 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.

Section 14—Transport Information

Safety Data Sheet information is intended to address a specific material and not various forms or states of containment.

Pressurized Containers

DOT CFR 172.101 Data	Fire Extinguishers, 2.2, UN1044
UN Proper Shipping Name	Fire Extinguishers
UN Class	(2.2)
UN Number	UN1044
UN Packaging Group	Not Applicable
Classification for AIR Transportation (AITA)	Consult Current IATA Regulations Prior to Shipping by AIR.
Classification for Water Transportation IMDG	Consult Current IMDG Regulations Prior to Shipping by WATER.

Non-Pressurized Containers

DOT CFR 172.101 Data	Non Regulated
UN Proper Shipping Name	Non Regulated
UN Class	None
UN Number	None
UN Packaging Group	None
Classification for AIR Transportation (AITA)	Consult Current IATA Regulations Prior to Shipping by AIR.
Classification for Water Transportation IMDG	Consult Current IMDG Regulations Prior to Shipping by WATER.

This section is believed to be accurate at the time of preparation. It is not intended to be a complete statement or summary of the applicable laws, rules, or hazardous material regulations, and is subject to change. Users have the responsibility to confirm compliance with all laws, rules, and hazardous material regulations in effect at the time of shipping.

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-pentanone	YES	YES	NDA	YES	YES	YES	YES	YES	YES

15.2. Other regulations

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 312-313

Pressurized: Hazard
Non-Pressurized: None

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302

Extremely Hazardous Substance (40 CFR 355, Appendix A)
 - not regulated.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

- not regulated.

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.

No warranty expressed or implied regarding the accuracy of this data. The hazards connected with the use of the material or the results to be obtained from the use thereof are made. Chemori Industries Pte. Ltd assumes no responsibility for damage or injury from the use of the product described herein.