Safety Data Sheet

Perfluoro (2-methyl-3-pentanone)

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Report No.：HGNM172KU0
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*Prepared according to UN GHS (the 6th revised edition)

1 Identification of the chemical and supplier

Product identifier

Product Name	Perfluoro (2-methyl-3-pentanone)
Synonyms	1,1,1,2,2,4,5,5,5-nonafluoro-4-(trifluoromethyl)-3-pentanone
CAS No.	756-13-8
EC No.	-
Molecular Formula	$C_6F_{12}O$

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Please consult manufacturer.
Uses advised against	Please consult manufacturer.

Details of the supplier of the Safety Data Sheet

Name of the company	ZHEJIANG NOAH FLUOROCHEMICAL Co., Ltd.
Address of the company	NO.6 WEIJIU ROAD, HANGZHOU BAY SHANGYU ECONOMIC AND TECHNOLOGICAL DEVELOPMENT ZONE, SHAOXING, ZHEJIANG, CHINA
Post code	
Telephone number	00575-82738216
Fax number	00571-82157561
E-mail address	felicia@zjnoah.cn

Emergency phone number

Emergency phone number	+86 199 6742 9831

2 Hazards identification

Hazard classification according to GHS

Hazardous To The Aquatic Environment – Long-Term (Chronic) Hazard	Category 3

Label elements

Hazard pictograms	Not applicable
Signal word	Not applicable

Hazard statements

H412	Harmful to aquatic life with long lasting effects

Precautionary statements

◆ Prevention

P273	Avoid release to the environment.

◆ Response

Response	Not applicable

◆ Storage

Storage	Not applicable

◆ Disposal

P501	Dispose of contents/container in accordance with local/regional/national/ international regulations.

Hazard description

◆ Physical and chemical hazards

	Liquid, toxic smoke/fumes in a fire.

◆ Health hazards

Inhaled	Inhalation of the product may produce adverse health effects or irritation of the respiratory tract following discomfort.
Ingestion	Accidental ingestion of the product may be harmful to the health of the individual.
Skin Contact	Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.
Eye	This product may cause temporary discomfort following direct contact with the eye.

◆ Environmental hazards

	This product is harmful to aquatic life with long lasting effects. Please refer to 12th chapter of SDS.

3 Composition/information on ingredients

Component	Cas No.	EC No.	Concentration (weight percent, %)
Perfluoro (2-methyl-3-pentanone)	756-13-8	-	99.9~100

4 First aid measures

Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

1	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

5 Firefighting measures

Extinguishing media

Suitable extinguishing media	Use extinguishing media suitable for surrounding area.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter or spread fire.

Specific hazards arising from the substance or mixture

1	May expansion or decompose explosively when heated or involved in fire.
2	Development of hazardous combustion gases or vapor possible in the event of fire.

Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent)and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment. Avoid breathing vapours or gas.

Environmental precautions

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

1	Use clean, non-sparking tools to collect absorbed material.
2	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
3	Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

7 Handling and storage

Precautions for handling

1	Handling is performed in a well ventilated place.
2	Wear suitable protective equipment.
3	Keep away from heat/sparks/open flames/ hot surfaces.

4	Empty containers retain product residue can be dangerous.

Precautions for storage

1	Keep containers tightly closed.
2	Keep containers in a dry, cool and well-ventilated place.
3	Keep away from heat/sparks/open flames/ hot surfaces.
4	Store away from incompatible materials and foodstuff containers.
5	Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8 Exposure controls/personal protection

Control parameters

◆ Occupational Exposure limit values

Occupational Exposure limit values	No information available

◆ Biological limit values

Biological limit values	No information available

◆ Monitoring methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2	GBZ/T 160.1~GBZ/T 160.81-2004 Determination of toxic substances in workplace air (Series standard).

Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Use explosion-proof electrical/ventilating/lighting/equipment.
4	Set up emergency exit and necessary risk-elimination area.
5	Handle in accordance with good industrial hygiene and safety practice.

Personal protection equipment

General requirement	
Eye protection	Tightly fitting safety goggles (approved by EN 166(EU) or NIOSH (US).
Hand protection	Wear protective gloves (such as butyl rubber) , passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.
Respiratory protection	If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges.
Skin and body protection	Wear fire/flame resistant/retardant clothing and antistatic boots.

9 Physical and chemical properties

Physical and chemical properties

Appearance	Colorless transparent liquid

Odor	Faint odor
Odor threshold	No information available
pH	Not applicable
Melting point/freezing point(℃)	-108
Initial boiling point and boiling range(℃)	49
Flash point(Closed cup,℃)	No information available
Evaporation rate	No information available
Flammability	Not flammable
Upper/lower explosive limits[%(v/v)]	Upper limit：No information available；Lower limit：No information available
Vapor pressure	33kPa（20℃）
Relative vapour density(Air＝1)	11.6
Relative density(Water=1)	1.6
Solubility(mg/L)	Insoluble in water
n-octanol/water partition coefficient	No information available
Auto-ignition temperature(℃)	＞100
Decomposition temperature(℃)	＞100
Kinematic viscosity	No information available
Particle characteristics	Not applicable

10 Stability and reactivity

Stability and reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	No information available.
Conditions to avoid	Incompatible materials, heat, flame and spark.
Incompatible materials	Strong oxidizing agent.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 Toxicological information

Acute toxicity

Component	Cas No.	LD_{50}(oral)	LD_{50}(dermal)	LC_{50}(inhalation,4h)
Perfluoro (2-methyl-3-pentanone)	756-13-8	＞5000mg/kg(Rat)	＞2000mg/kg(Rat)	No information available

Carcinogenicity

ID	Cas No.	Component	IARC	NTP

1	756-13-8	Perfluoro (2-methyl-3-pentanone)	Not Listed	Not Listed

Others

	Perfluoro (2-methyl-3-pentanone)(Component)
Skin corrosion/irritation	Based on available data, the classification criteria are not met
Serious eye damage/irritation	Based on available data, the classification criteria are not met
Skin sensitization	Based on available data, the classification criteria are not met
Respiratory sensitization	Based on available data, the classification criteria are not met
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	Based on available data, the classification criteria are not met
STOT-repeated exposure	Based on available data, the classification criteria are not met
Aspiration hazard	Based on available data, the classification criteria are not met
Germ cell mutagenicity	Based on available data, the classification criteria are not met
Reproductive toxicity(additional)	Based on available data, the classification criteria are not met

12 Ecological information

Acute aquatic toxicity

Component	Cas No.	Fish	Crustaceans	Algae
Perfluoro (2-methyl-3-pentanone)	756-13-8	No information available	No information available	ErC_{50}：10.6mg/L (96h)(Algae)

Chronic aquatic toxicity

Chronic aquatic toxicity	No information available

Persistence and degradability

Persistence and degradability	No information available

Bioaccumulative potential

Bioaccumulative potential	No information available

Mobility in soil

Mobility in soil	No information available

Results of PBT and vPvB assessment

Component	Cas No.	Results of PBT and vPvB assessment (according to (EC) No 1907/2006)
Perfluoro (2-methyl-3-pentanone)	756-13-8	not PBT/vPvB

13 Disposal considerations

Disposal considerations

Waste chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
Contaminated	Containers may still present chemical hazard when empty. Keep away from hot

packaging	and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section 13.1and 13.2.

14 Transport information

Label and Mark

Transporting Label	Not applicable

IMDG-CODE

IMDG-CODE	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

ICAO/IATA-DG

ICAO/IATA-DG	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

UN-ADR

UN-ADR	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

15 Regulatory information

International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS	ENCS
Perfluoro (2-methyl-3-pentanone)	×	√	×	√	√	×	√	√	×

【EINECS】 European Inventory of Existing Commercial Chemical Substances
【TSCA】 United States Toxic Substances Control Act Inventory
【DSL】 Canadian Domestic Substances List
【IECSC】 China Inventory of Existing Chemical Substances
【NZIoC】 New Zealand Inventory of Chemicals
【PICCS】 Philippines Inventory of Chemicals and Chemical Substances
【KECI】 Existing and Evaluated Chemical Substances
【AICS】 Australia Inventory of Chemical Substances
【ENCS】 Existing And New Chemical Substances

Note
"√" Indicates that the substance included in the regulations
"×" That no data or included in the regulations

16 Others

Information on revision

Creation Date	2015/09/13
Revision Date	2016/12/23
Reason for revision	-

Reference

[1]IPCS:The International Chemical Safety Cards (ICSC) ,website: http://www.ilo.org/dyn/icsc/showcard.home.
[2]IARC，website: http://www.iarc.fr/.

[3]OECD: The Global Portal to Information on Chemical Substances, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en.

[4]CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple.

[5]NLM:ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp.

[6]EPA: Integrated Risk Information System, website: http://cfpub.epa.gov/iris/.

[7]U.S. Department of Transportation:ERG, website: http://www.phmsa.dot.gov/hazmat/library/erg.

[8]Germany GESTIS-database on hazard substance, website: http://gestis-en.itrust.de/.

Abbreviations and acronyms

CAS –Chemical Abstracts Service

CMR - Carcinogens, mutagens or substances toxic to reproduction

PC-STEL- Short term exposure limit

PC-TWA - Time Weighted Average

DNEL - Derived No Effect Level

IARC - International Agency for Research on Cancer

RPE - Respiratory Protective Equipment

PNEC –Predicted No Effect Concentration

LC_{50} - Lethal Concentration 50%

LD_{50} - Lethal Dose 50%

NOEC -No Observed Effect Concentration

EC_{50} - Effective Concentration 50%

PBT - Persistent, Bioaccumulative, Toxic

POW - Partition coefficient Octanol:Water

BCF - Bioconcentration factor (BCF)

vPvB - very Persistent, very Bioaccumulative

IMDG-International Maritime Dangerous Goods

ICAO/IATA-International Civil Aviation Organization/International Air Transportation Association

UN-The United Nations

ACGIH-American Conference of Governmental Industrial Hygienists

NFPA-National Fire Protection Association

OECD-Organization for Economic Co-operation and Development

Disclaimer

This Safety Data Sheet (SDS) was prepared according to UN GHS (the 6th revised edition). The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user’ s reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.