Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THECOMPANY/UNDERTAKING

Product Identifier

Perihalan Produk: **(R)-N-FMOC-alpha-Methylvaline**
Product Description: **(R)-N-FMOC-alpha-Methylvaline**
Cat No. : 441140000; 441141000; 441145000
Molecular Formula C21 H23 N O4

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

Recommended Use Laboratory chemicals.
Uses advised against No Information available

Company

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SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

Label Elements

Hazard Statements

Precautionary Statements
Storage
P403 - Store in a well-ventilated place
Disposal
P501 - Dispose of contents/ container to an approved waste disposal plant

Other Hazards

EUH210 - Safety data sheet available on request

Contains a known or suspected endocrine disruptor
Contains a substance on the National Authorities Endocrine Disruptor Lists

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight %
(R)-N-FMOC-alpha-Methylvaline	616867-28-8	>90
Methyl tert-butyl ether	1634-04-4	<10

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

Ingestion Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Inhalation Remove to fresh air. Get medical attention immediately if symptoms occur.

Self-Protection of the First Aider No special precautions required.

Most important symptoms and effects, both acute and delayed

None reasonably foreseeable.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons

No information available.

Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. Flammable.

Hazardous Combustion Products

Thermal decomposition can lead to release of irritating gases and vapors, Carbon monoxide (CO), Carbon dioxide (CO_2), Nitrogen oxides (NOx).

Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures
Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

Environmental precautions
Should not be released into the environment. See Section 12 for additional Ecological Information.

Methods and Material for Containment and Cleaning Up
Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

Reference to Other Sections
Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling
Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid ingestion and inhalation. Avoid contact with skin, eyes or clothing. Avoid dust formation.

Conditions for Safe Storage, Including any Incompatibilities
Keep container tightly closed. Store under an inert atmosphere. Keep refrigerated. Flammables area.

Specific End Uses
Use in laboratories.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Component	Malaysia	ACGIH TLV	OSHA PEL
Methyl tert-butyl ether		TWA: 50 ppm	

Component	European Union	The United Kingdom	Germany
Methyl tert-butyl ether	TWA: 50 ppm (8h) TWA: 183.5 mg/m³ (8h) STEL: 100 ppm (15min) STEL: 367 mg/m³ (15min)	STEL: 100 ppm 15 min STEL: 367 mg/m³ 15 min TWA: 50 ppm 8 hr TWA: 183.5 mg/m³ 8 hr	TWA: 50 ppm (8 Stunden). AGW - exposure factor 1.5 TWA: 180 mg/m³ (8 Stunden). AGW - exposure factor 1.5 TWA: 50 ppm (8 Stunden). MAK TWA: 180 mg/m³ (8 Stunden). MAK Höhepunkt: 75 ppm Höhepunkt: 270 mg/m³

Exposure Controls
Engineering Measures
Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.
Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection	Wear safety glasses with side shields (or goggles)
Hand Protection	Protective gloves
Skin and body protection	Long sleeved clothing

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Respiratory Protection	No protective equipment is needed under normal use conditions

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice

Environmental exposure controls No information available

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	White	
Physical State	Solid	
Odor	Characteristic	
Odor Threshold	No data available	
pH	No information available	
Melting Point/Range	37 - 53 °C / 98.6 - 127.4 °F	
Softening Point	No data available	
Boiling Point/Range	No information available	
Flash Point	No information available	**Method -** No information available
Evaporation Rate	Not applicable	Solid
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Vapor Pressure	No data available	
Vapor Density	Not applicable	Solid
Specific Gravity / Density	No data available	
Bulk Density	No data available	
Water Solubility	No information available	
Solubility in other solvents	No information available	

Partition Coefficient (n-octanol/water)

Component	**log Pow**
Methyl tert-butyl ether	1.06
	1.04

Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
Viscosity	Not applicable	Solid
Explosive Properties	No information available	
Oxidizing Properties	No information available	

Molecular Formula	C21 H23 N O4
Molecular Weight	353.42

SECTION 10: STABILITY AND REACTIVITY

Reactivity

None known, based on information available.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

Conditions to Avoid

Incompatible products. Excess heat. Avoid dust formation.

Incompatible Materials

Strong oxidizing agents. Strong acids.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating gases and vapors. Carbon monoxide (CO). Carbon dioxide (CO_2). Nitrogen oxides (NOx).

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Product Information

(a) acute toxicity;

Oral	Based on available data, the classification criteria are not met
Dermal	Based on available data, the classification criteria are not met
Inhalation	Based on available data, the classification criteria are not met

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Methyl tert-butyl ether	LD50 = 2963 mg/kg (Rat)	LD50 = 10000 mg/kg (Rabbit)	LC50 = 85 mg/L (Rat) 4 h

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;
Respiratory No data available
Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

The table below indicates whether each agency has listed any ingredient as a carcinogen

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs None known.

(j) aspiration hazard; Not applicable
Solid

Symptoms / effects,both acute and delayed No information available.

Endocrine Disrupting Properties .
Assess endocrine disrupting properties for human health Contains a substance on the National Authorities Endocrine Disruptor Lists

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity effects .

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Methyl tert-butyl ether	887 mg/L LC50 96 h 100 mg/L LC50 96 h 929 mg/L LC50 96 h 672 mg/L LC50 96 h	EC50: = 542 mg/L, 48h (Daphnia magna)	800 mg/L EC50 > 72 h 184 mg/L EC50 = 96 h	EC50 = 11.4 mg/L 30 min EC50 = 8.23 mg/L 5 min EC50 = 9.67 mg/L 15 min

Persistence and degradability No information available

Bioaccumulative potential No information available

Component	log Pow	Bioconcentration factor (BCF)
Methyl tert-butyl ether	1.06 1.04	No data available

Mobility in soil No information available. .

Endocrine Disruptor Information

Assess endocrine disrupting properties for the environment Contains a substance on the National Authorities Endocrine Disruptor Lists.

Component	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances
Methyl tert-butyl ether	Group III Chemical	

Other adverse effects No information available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues/Unused Products Waste is classified as hazardous Dispose of in accordance with the European Directives on waste and hazardous waste Dispose of in accordance with local regulations

Contaminated Packaging Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous Keep product and empty container away from heat and sources of ignition

Other Information Waste codes should be assigned by the user based on the application for which the product was used Do not flush to sewer Can be landfilled or incinerated, when in compliance with local regulations Do not empty into drains

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

UN-No UN3175
Hazard Class 4.1
Subsidiary Hazard Class +
Packing Group II
Proper Shipping Name Solids containing flammable liquid, n.o.s Isopropyl alcohol

Road and Rail Transport

UN-No UN3175
Hazard Class 4.1
Packing Group II
Proper Shipping Name Solids containing flammable liquid, n.o.s Isopropyl alcohol

IATA

UN-No UN3175
Hazard Class 4.1
Packing Group II
Proper Shipping Name Solids containing flammable liquid, n.o.s Isopropyl alcohol

Special Precautions for User No special precautions required

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories X = listed

Component	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	IECSC	AICS	KECL
Methyl tert-butyl ether	216-653-1	X	X	X	X	X	X	X	KE-23648

Component	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Methyl tert-butyl ether				Annex I - Y40

National Regulations

Persistent Organic Pollutant This product does not contain any known or suspected substance
Ozone Depletion Potential This product does not contain any known or suspected substance

SECTION 16: OTHER INFORMATION

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japanese Existing and New Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit
ACGIH - American Conference of Governmental Industrial Hygienists
RPE - Respiratory Protective Equipment
LC50 - Lethal Concentration 50%
POW - Partition coefficient Octanol:Water

TWA - Time Weighted Average
IARC - International Agency for Research on Cancer
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships
ATE - Acute Toxicity Estimate
VOC - (Volatile Organic Compound)

Key literature references and sources for data
https://echa.europa.eu/information-on-chemicals
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Revision Date 22-Mar-2025
Revision Summary SDS sections updated.

In accordance with local and national regulations: Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

Disclaimer

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End of Safety Data Sheet