Prepared according to GB/T 16483, GB/T 17519

Methyl Isobutyl Carbinol

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1. PRODUCT AND COMPANY IDENTIFICATION

Methyl Isobutyl Carbinol Product name

Product code S1216

Synonyms : 1,3-dimethyl 1-butanol, 4-methylpentan-2-ol, Methyl Amyl

Alcohol, MIBC

CAS-No. 108-11-2

Manufacturer or supplier's details

Supplier

SHELL EASTERN CHEMICALS (S)

A REGISTERED BUSINESS OF SHELL EASTERN

TRADING (PTE) LTD (UEN:198902087C)

9 North Buona Vista Drive, #07-01

The Metropolis Tower 1 Singapore 138588

Singapore

Telephone : +65 6384 8737 Telefax : +65 6384 8454

Email Contact for Safety Data : If you have any enquiries about the content of this SDS

please email sccmsds@shell.com

Emergency telephone

number

Sheet

: +86-532-83889090

Recommended use of the chemical and restrictions on use

Solvent. Recommended use

Restrictions on use This product must not be used in applications other than the

above without first seeking the advice of the supplier.

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Liquid.
Colour	clear
Odour	sweet
Health Hazards	May be harmful if swallowed. Causes serious eye irritation. May be harmful in contact with skin. Causes mild skin irritation. May cause respiratory irritation.
Safety Hazards	Flammable liquid and vapour.
Environmental Hazards	Not classified as dangerous for the environment.

GHS Classification

Flammable liquids Category 3 Acute toxicity (Oral) Category 5 Acute toxicity (Dermal) Category 5

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Skin irritation : Category 3 Category 2A Eve irritation

Specific target organ toxicity -: Category 3 (Respiratory system)

single exposure

GHS label elements

Hazard pictograms





Signal word Warning

Hazard statements PHYSICAL HAZARDS:

H226 Flammable liquid and vapour.

HEALTH HAZARDS:

H303 May be harmful if swallowed. H313 May be harmful in contact with skin.

H316 Causes mild skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation. **ENVIRONMENTAL HAZARDS:**

Not classified as an environmental hazard under GHS criteria.

Precautionary statements

Prevention:

P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.

P240 Ground/bond container and receiving equipment. P241 Use explosion-proof electrical/ ventilating/ lighting equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge. P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P264 Wash hands thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/ protective clothing/ eye

protection/ face protection.

Response:

P303 + P361 + P353 IF ON SKIN (or hair): Take off

immediately all contaminated clothing. Rinse skin with water/ shower.

P370 + P378 In case of fire: Use appropriate media to

extinguish.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 If eye irritation persists: Get medical advice/

attention. P304 + P340 IF INHALED: Remove person to fresh air and

keep comfortable for breathing. P312 Call a POISON CENTER/ doctor if you feel unwell.

P332 + P313 If skin irritation occurs: Get medical advice/

attention.

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Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P235 Keep cool.

P405 Store locked up.

Disposal:

P501 Dispose of contents and container to appropriate waste site or reclaimer in accordance with local and national regulations.

Other hazards which do not result in classification

Vapours are heavier than air. Vapours may travel across the ground and reach remote ignition sources causing a flashback fire danger. Even with proper grounding and bonding, this material can still accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.

Physical and chemical hazards	Flammable liquid and vapour.
Health Hazards	Inhalation: May cause respiratory irritation. Skin: May be harmful in contact with skin. Causes mild skin irritation. Eyes: Causes serious eye irritation. Ingestion: May be harmful if swallowed.
Environmental Hazards	Not classified as dangerous for the environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Hazardous components

Chemical name	CAS-No.	Classification	Concentration (% w/w)
4-methylpentan-2-ol	108-11-2	Flam. Liq.3; H226 Acute Tox.5; H303 Acute Tox.5; H313 Skin Irrit.3; H316 Eye Irrit.2A; H319 STOT SE3; H335	100

For explanation of abbreviations see section 16.

4. FIRST-AID MEASURES

General advice : In general no treatment is necessary, however, obtain medical

advice.

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If inhaled	: Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.	_
In case of skin contact	: Remove contaminated clothing. Immediately flush skin with large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If needed, transport to the nearest medical facility for additional treatment.	
In case of eye contact	 Immediately flush eye(s) with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Transport to the nearest medical facility for additional treatment. 	
If swallowed	: If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Rinse mouth.	
Most important symptoms and effects, both acute and delayed	 Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing and/or difficulty breathing. Skin irritation signs and symptoms may include a burning sensation, redness, or swelling. Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision. Ingestion may result in nausea, vomiting and/or diarrhoea. 	,
Protection of first-aiders	: When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.	

5. FIRE-FIGHTING MEASURES

Notes to physician

Suitable extinguishing media : Alcohol-resistant foam, water spray or fog. Dry chemical

Treat symptomatically.

powder, carbon dioxide, sand or earth may be used for small

: Call a doctor or poison control center for guidance.

fires only.

Unsuitable extinguishing

media

: None

Specific hazards during

firefighting

: The vapour is heavier than air, spreads along the ground and

distant ignition is possible.

Carbon monoxide may be evolved if incomplete combustion

occurs.

Specific extinguishing

methods

Standard procedure for chemical fires.

Clear fire area of all non-emergency personnel.

Keep adjacent containers cool by spraying with water.

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Special protective equipment for firefighters

Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Observe the relevant local and international regulations Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.

Local authorities should be advised if significant spillages cannot be contained.

The vapour is heavier than air, spreads along the ground and distant ignition is possible.

Vapour may form an explosive mixture with air.

 Avoid contact with skin, eyes and clothing.
 Isolate hazard area and deny entry to unnecessary or unprotected personnel.
 Stay upwind and keep out of low areas.

Environmental precautions

: Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment.

Ventilate contaminated area thoroughly.

Monitor area with combustible gas indicator.

Methods and materials for containment and cleaning up

: For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

Additional advice

: For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet.

For guidance on disposal of spilled material see Section 13 of

this Safety Data Sheet.

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7. HANDLING AND STORAGE

Handling

General Precautions : Avoid breathing of or direct contact with material. Only use in

well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see

Section 8 of this Safety Data Sheet.

Use the information in this data sheet as input to a risk assessment of local circumstances to help determine

appropriate controls for safe handling, storage and disposal of

this material.

Ensure that all local regulations regarding handling and

storage facilities are followed.

Advice on safe handling : Avoid contact with skin, eyes and clothing.

Use local exhaust ventilation if there is risk of inhalation of

vapours, mists or aerosols.

Bulk storage tanks should be diked (bunded).

Extinguish any naked flames. Do not smoke. Remove ignition

sources. Avoid sparks.

Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment

to reduce the risk.

The vapours in the head space of the storage vessel may lie

in the flammable/explosive range and hence may be

flammable.

Properly dispose of any contaminated rags or cleaning

materials in order to prevent fires.

Do NOT use compressed air for filling, discharging, or

handling operations.

Avoidance of contact : Strong oxidising agents.

Product Transfer : Refer to guidance under Handling section.

Storage

Conditions for safe storage : The vapour is heavier than air. Beware of accumulation in pits

and confined spaces.

Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.

Packaging material : Suitable material: For containers, or container linings use mild

steel, stainless steel.

Unsuitable material: Natural, butyl, neoprene or nitrile rubbers.

Container Advice : Containers, even those that have been emptied, can contain

explosive vapours. Do not cut, drill, grind, weld or perform

similar operations on or near containers.

Specific use(s) : Not applicable

Ensure that all local regulations regarding handling and

storage facilities are followed.

See additional references that provide safe handling practices:

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American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practices on Static Electricity).

IEC/TS 60079-32-1: Electrostatic hazards, guidance

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
4-methylpentan-2-ol	108-11-2	TWA	25 ppm	ACGIH
4-methylpentan-2-ol		STEL	40 ppm	ACGIH
4-methylpentan-2-ol		TWA	25 ppm	OSHA Z-1
			100 mg/m3	

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods http://www.cdc.gov/niosh/

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods http://www.osha.gov/

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances http://www.hse.gov.uk/

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany http://www.dguv.de/inhalt/index.jsp

L'Institut National de Recherche et de Securité, (INRS), France http://www.inrs.fr/accueil

Engineering measures

: Use sealed systems as far as possible.

Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.

Local exhaust ventilation is recommended.

Firewater monitors and deluge systems are recommended.

Eye washes and showers for emergency use.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated. The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances.

Appropriate measures include:

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General Information:

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Personal protective equipment

Protective measures

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Respiratory protection

: If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.

Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.

If air-filtering respirators are suitable for conditions of use:

Select a filter suitable for organic gases and vapours [Type A boiling point >65°C (149°F)].

Hand protection Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. Longer term protection: Butyl rubber. Nitrile rubber. Incidental contact/Splash protection: PVC or neoprene rubber gloves. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are

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followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using

gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

Eye protection : Wear goggles for use against liquids and gas.

Wear full face shield if splashes are likely to occur.

Skin and body protection : Wear antistatic and flame-retardant clothing, if a local risk

assessment deems it so.

Skin protection is not required under normal conditions of use. For prolonged or repeated exposures use impervious clothing

over parts of the body subject to exposure.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to relevant Standard,

and provide employee skin care programmes.

Thermal hazards : Not applicable

Environmental exposure controls

General advice : Local guidelines on emission limits for volatile substances

must be observed for the discharge of exhaust air containing

vapour.

Minimise release to the environment. An environmental assessment must be made to ensure compliance with local

environmental legislation.

Information on accidental release measures are to be found in

section 6.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid.

Colour : clear Odour : sweet

Odour Threshold : Data not available pΗ : Data not available Melting / freezing point : Data not available

Boiling point/boiling range : 130 - 133 °C / 266 - 271 °F

: 41 °C / 106 °F Flash point

Method: IP 170

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: 0.3 Evaporation rate

Method: ASTM D 3539, nBuAc=1

Flammability (solid, gas) : Not applicable

Upper explosion limit : upper flammability limit

5.5 %(V)

: Lower flammability limit Lower explosion limit

1 %(V)

: 420 Pa (20 °C / 68 °F) Vapour pressure

Relative vapour density : 3.5

: 0.81 (20 °C / 68 °F) Relative density

Density 806 - 808 kg/m3 (20 °C / 68 °F)

Method: ASTM D4052

Solubility(ies)

: 16 g/l (20 °C / 68 °F) Water solubility

Partition coefficient: n-

octanol/water

: log Pow: < 3

Auto-ignition temperature : 305 °C / 581 °F

Method: ASTM E-659

Decomposition temperature : Data not available

Viscosity

: 5.2 mPa.s (20 °C / 68 °F) Viscosity, dynamic

Viscosity, kinematic : Data not available : Not applicable Explosive properties Oxidizing properties : Data not available

Surface tension : 22.7 mN/m, 20 °C / 68 °F

Conductivity : Electrical conductivity: > 10,000 pS/m

> A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid, This material is not expected to be

a static accumulator.

Particle size : Data not available

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Molecular weight : 102.18 g/mol

10. STABILITY AND REACTIVITY

Reactivity : The product does not pose any further reactivity hazards in

addition to those listed in the following sub-paragraph.

Chemical stability : No hazardous reaction is expected when handled and stored

according to provisions

Possibility of hazardous

Conditions to avoid

reactions

: Reacts with strong oxidising agents.

: Avoid heat, sparks, open flames and other ignition sources.

Prevent vapour accumulation.

In certain circumstances product can ignite due to static

electricity.

Incompatible materials : Strong oxidising agents.

Hazardous decomposition

products

: Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides

including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative

degradation.

11. TOXICOLOGICAL INFORMATION

Basis for assessment : Information given is based on product testing.

Exposure routes : Inhalation is the primary route of exposure although

absorption may occur through skin contact or following

accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity : LD50 Rat: > 2000 - <=5000 mg/kg

Remarks: May be harmful if swallowed.

Acute inhalation toxicity : Rat: Remarks: Low toxicity by inhalation.

No deaths at highest tested dose.

Acute dermal toxicity : LD50 Rabbit: > 2000 - <=5000 mg/kg

Remarks: May be harmful in contact with skin.

Skin corrosion/irritation

Product:

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Remarks: Causes mild skin irritation.

Serious eye damage/eye irritation

Product:

Remarks: Causes serious eye irritation.

Respiratory or skin sensitisation

Product:

Remarks: Not a sensitiser.

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Product:

: Remarks: No evidence of mutagenic activity.

Carcinogenicity

Product:

Remarks: Not a carcinogen., Based on available data, the classification criteria are not met.

Material	GHS/CLP Carcinogenicity Classification
4-methylpentan-2-ol	No carcinogenicity classification.

Reproductive toxicity

Product:

Remarks: Not a developmental toxicant., Based on available data, the classification criteria are not met., Does not impair fertility.

STOT - single exposure

Product:

Remarks: May cause respiratory irritation.

STOT - repeated exposure

Product:

Remarks: Based on available data, the classification criteria are not met.

Aspiration toxicity

Product:

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Not an aspiration hazard.

Further information

Product:

Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

12. ECOLOGICAL INFORMATION

Basis for assessment : Information given is based on product testing.

Ecotoxicity

Product:

Toxicity to fish (Acute

toxicity) Remarks: Practically non toxic:

LL/EL/IL50 > 100 mg/l

Toxicity to crustacean (Acute

toxicity)

Remarks: Practically non toxic:

LL/EL/IL50 > 100 mg/l

Toxicity to algae/aquatic

plants (Acute toxicity)

Remarks: Practically non toxic:

LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic

toxicity)

: Remarks: Data not available

Toxicity to crustacean

(Chronic toxicity)

: Remarks: NOEC/NOEL > 10 - <=100 mg/l

Toxicity to microorganisms

(Acute toxicity)

: Remarks: Practically non toxic:

LL/EL/IL50 > 100 mg/l

Persistence and degradability

Product:

Biodegradability : Remarks: Readily biodegradable., Oxidises rapidly by photo-

chemical reactions in air.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Does not bioaccumulate significantly.

Partition coefficient: n-

octanol/water

: log Pow: < 3

Mobility in soil

Product:

Mobility : Remarks: Dissolves in water.

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Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Rec

: Recover or recycle if possible.

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water

Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment. Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional,

national, and local laws and regulations.

Local regulations may be more stringent than regional or national requirements and must be complied with.

Contaminated packaging

Drain container thoroughly.

After draining, vent in a safe place away from sparks and fire.

Residues may cause an explosion hazard. Do not, puncture, cut, or weld uncleaned drums. Send to drum recoverer or metal reclaimer.

Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand.

Local legislation Remarks

: If potential for exposure exists refer to Section 8 for specific

personal protective equipment.

14. TRANSPORT INFORMATION

International Regulations

ADR

UN number : 2053

Proper shipping name : METHYL ISOBUTYL CARBINOL

Class : 3

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Packing group : III
Labels : 3
Hazard Identification Number : 30
Environmentally hazardous : no

IATA-DGR

UN/ID No. : UN 2053

Proper shipping name : Methyl isobutyl carbinol

Class : 3
Packing group : III
Labels : 3

IMDG-Code

UN number : UN 2053

Proper shipping name : METHYL ISOBUTYL CARBINOL

Class : 3
Packing group : III
Labels : 3
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category : Z Ship type : 3

Product name : Methyl amyl alcohol

Special precautions for user

Remarks : Special Precautions: Refer to Section 7, Handling & Storage,

for special precautions which a user needs to be aware of or

needs to comply with in connection with transport.

Additional Information: This product may be transported under nitrogen blanketing.

Nitrogen is an odourless and invisible gas. Exposure to nitrogen enriched atmospheres displaces available oxygen which may cause asphyxiation or death. Personnel must observe strict safety precautions when involved with a

confined space entry.

15. REGULATORY INFORMATION

National regulatory information

Rotterdam Convention (Prior Informed Consent)

Not applicable

Stockholm Convention (Persistent Organic Pollutants)

Not applicable

Law on the Prevention and Control of Occupational Diseases

The categories of occupational disease:

Not applicable

Occupational Disease Classification list:

Not applicable

Regulations on Safety Management of Hazardous Chemicals

Catalogue of Hazardous Chemicals : Listed

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Identification of Major Hazard Installations for : Not applicable

Hazardous Chemicals (GB 18218)

Hazardous Chemicals for Priority Management under : Not applicable

SAWS

Regulations on Labour Protection in Workplaces where Toxic Substances are Used

Catalogue of Highly Toxic Chemicals : Not applicable

Regulation of Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals

China Severely Restricted Toxic Chemicals for Import : Not applicable

and Export

Other international regulations

The components of this product are reported in the following inventories:

: Listed DSL Listed **IECSC** Listed **ENCS** : Listed KECI : Listed **PICCS** : Listed TSCA : Listed TCSI : Listed **NZIoC** : Listed

16. OTHER INFORMATION

Full text of H-Statements

H226	Flammable liquid and vapour.
H303	May be harmful if swallowed.
H313	May be harmful in contact with skin.
H316	Causes mild skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

Full text of other abbreviations

Acute Tox. Acute toxicity
Eye Irrit. Eye irritation
Flam. Liq. Flammable liquids
Skin Irrit. Skin irritation

STOT SE Specific target organ toxicity - single exposure

Abbreviations and Acronyms

AICS - Australian Inventory of Chemical Substances; AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances

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Methyl Isobutyl Carbinol

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(Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC -International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 -Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch -Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS -Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative: WHMIS - Workplace Hazardous Materials Information System

Further information

Training advice : Provide adequate information, instruction and training for

operators.

Other information : A vertical bar (|) in the left margin indicates an amendment

from the previous version.

Sources of key data used to compile the Safety Data

Sheet

: The guoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU

IUCLID date base, EC 1272 regulation, etc).

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