Elite Advanced Materials Sdn Bhd

SAFETY DATA SHEET

According to Regulation (EC) No 453/2010

Version 1.2
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www.eamaterials.com

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

1.1 Product identifier

Product name : **Dichloromethane**

Included product code : DCM010-2.5, DCM010-4.0, DCM012-2.5, DCM012-4.0

1.2 Relevant identified uses of the substance or mixture

Identified uses : Laboratory chemicals, Manufacture of substances

Uses advised against : Not applicable

1.3 Details of the supplier of the safety data sheet

Company : Elite Advanced Materials Sdn Bhd
Lot 34, Jalan RP2, Rawang Perdana Industrial Estate, 48000 Rawang, Selangor, Malaysia

E-mail address : enquiry@eamaterials.com

1.4 Emergency telephone number

Emergency phone : +60 3-6091 4200 (Local business hours only)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Carcinogenicity	Category 2
Eye Irritation	Category 2
Skin Irritation	Category 2
Specific target organ toxicity - single exposure, Respiratory system	Category 3
Specific target organ toxicity - single exposure, Central nervous system	Category 3

Specific target organ toxicity - repeated exposure, Liver, Blood, Central nervous system	Category 2

2.2 Label elements

Labeling in compliance to Regulation (EC) No. 1272/2008 [CLP/GHS]

Hazard pictograms

GHS07

GHS08

Signal word

Danger

Hazard statements

H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H351	Suspected of causing cancer
H373	May cause damage to organs (Liver, Blood, Central nervous system) through prolonged or repeated exposure

Precautionary statements

P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood
P260	Do not breathe vapours
P261	Avoid breathing vapours
P264	Wash hand thoroughly after handling
P271	Use only outdoors or in a well-ventilated area
P280	Wear protective gloves/eye protection/face protection

P281	Use personal protective equipment as required

Response

P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contract lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a POISON CENTER or doctor/physical if you feel unwell.
P314	Get medical advice/attention if you feel unwell.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.

Storage

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

2.3 Other hazards

None

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Synonyms:	Methylene chloride, DCM
Formula:	CH_2Cl_2
Molecular Weight:	84.93 g/mol
CAS-No.:	75-09-2

Component	Identity	Classification Code	H-Code	Concentration (by wt)
Dichloromethane	CAS-No. : 75-09-2 EC-No. : 200-838-9 Index-No. : 602-004-00-3	Skin Irrit. 2; Eye Irrit. 2; Carc. 2; STOT SE 3; STOT RE 2;	H315 H319 H351 H335 H336 H373	< = 100%

SECTION 4: FIRST AID MEASURES

4.1 Description of First Aid measures

General information
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
Move to fresh air in case of accidental inhalation of vapors. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use appropriate instruments/apparatus. Consult a physician.

In case of skin contact
Remove contaminated clothing and wash off with soap and plenty of water for at least 15 minutes. If signs of poisoning appear, treat as for inhalation. Consult a physician. Wash contaminated clothing before reuse.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Keep patient warm. In case of shortness of breath, give oxygen. Never give anything by mouth to an unconscious person. Apply artificial respiration only if patient is not breathing or under medical supervision. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and delayed symptoms and effects

The most important known symptoms and effects are described in section 2.2 and section 11

4.3 Indication of any immediate medical attention and special treatment

No information available

SECTION 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Water spray, alcohol-resistant foam, dry chemical, or carbon dioxide (CO_2) is required to extinguish flames.

Unsuitable extinguishing media

None

5.2 Special hazards arising from the substance or mixture

Not combustible

Ambient fire may liberate hazardous vapours

Fire may cause evolution of:

Hydrogen chloride gas, Phosgene

5.3 Advice for fire-fighters

Wear full protective clothing and self-contained breathing apparatus if necessary. Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal protective equipment is required during handling. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Shut off leaks if without risk. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

Contain or absorb leaking liquid with sand or earth, consults an expert. Prevent liquid entering sewers, basements and workpits. If substance has entered a water course or sewer or contaminated soil, advise police.

6.3 Methods and material for containment and cleaning up

Spillage: May respond with combustible substances creating fire or explosion hazard and formation of toxic fumes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Soak up with inert absorbent material (e.g. sand, silica gel). Prevent liquid entering sewers, basements and workpits; vapour may create explosive atmosphere. Transfer to covered steel drums. Dispose of properly.

6.4 Reference to other sections
For disposal see Section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precaution for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build-up of electrostatic charge. Keep container tightly closed. Do not empty into drains.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep away from heat and sources of ignition. Keep out of direct sunlight and away from incompatible materials

7.3 Specific end use
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Dichloromethane	TWA: 50 ppm	(Vacated) TWA: 500 ppm (Vacated) STEL: 2,000 ppm (Vacated) Ceiling: 1,000 ppm TWA: 25 ppm STEL: 125 ppm	IDLH: 2,300 ppm

8.2 Exposure control
Personal protection measures, such as personal protective equipment
Never eat, drink or smoke during handling the chemical. Ensure that there is adequate ventilation, especially in confined areas.

Eye/ face protection
Face shield and safety glasses is required during handling. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Discard of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Splash contact*
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 148 min
Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

*Source – Sigma Aldrich, 2015

Body protection
Impervious clothing, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	:	Liquid, clear
Color	:	colorless
Ordor	:	sharp penetrating
Ordor threshold	:	200 ppm
pH - value	:	Neutral at 20°C
Melting point / Range	:	-95 °C
Boiling point / Range	:	40 °C
Flash point	:	None

Evaporation rate	:	1.9
Flammability limit - LEL	:	12 % (V)
Flammability limit - UEL	:	19 % (V)
Vapour pressure	:	475 hPa at 20°C
Vapor density (air = 1)	:	2.93 - (Air = 1.0)
Density	:	1.326 g/ml at 20°C
Bulk density	:	No data available
Solubility(ies)	:	No data available
Water solubility	:	1.3% at 25°C
Partition coefficient: n-octanol/water:		log Pow: 1.25
Auto-ignition temperature	:	605 °C
Decomposition temperature	:	Not data available
Viscosity	:	0.43 mPa.s at 20°C
Explosive properties	:	No data available
Oxidising properties	:	No data available

9.2 Other information

Not applicable

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Keep away from direct sunlight

Keep away from moisture

10.2 Chemical stability

Stable in the presence of inhibitor

10.3 Possibility of hazardous reactions

Forms a detonable mixture with nitric acid

May react with certain amines, e.g. polyurethane catalysts

10.4 Conditions to avoid

Avoid contact with heat and ignition sources

10.5 Incompatible materials

Prolonged contact with aluminium or light alloys may cause a reaction resulting in the generation of hydrogen chloride gas and heat

10.6 Hazardous decomposition products

Hydrogen chloride, phosgene

SECTION 11: TOXICOLOGY INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Dichloromethane	> 2,000 mg/kg (Rat)	> 2,000 mg/kg (Rat)	53 mg/L/6h (Rat) 76,000 mg/m^3/4h (Rat)

Skin corrosion/irritation
Skin - rabbit
Remarks: Irritating to skin. - 24 h

Serious eye damage/eye irritation
Eyes - rabbit
Remarks: eye irritation – 24 h

Respiratory or skin sensitisation
No data available.

Germ cell mutagenicity
Bacterial mutagenicity; Ames test is positive.
Mutagenicity (mammal, cell test): micronucleus negative (in vivo).

Carcinogenicity
The carcinogenic potential requires further clarification but, owing possible carcinogenic effects for man.

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
May cause respiratory irritation.
May cause drowsiness or dizziness

Specific target organ toxicity - repeated exposure
May cause damage to organs through prolonged or repeated exposure (Inhalation) - Central nervous system

May cause damage to organs through prolonged or repeated exposure (Oral) - Liver, Blood

Aspiration hazard
No data available

Signs and Symptoms of Exposure
Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

Additional Information
RTECS: PA8050000

SECTION 12: ECOLOGY INFORMATION

12.1 Ecotoxicity

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Dichloromethane	EC50: >660 mg/L/96h	LC50: = 193 mg/L/96h (Pimephales promelas)	EC50: 1mg/L/24h EC50: 2.88 mg/L/15 min	EC50: 140 mg/L/48h

12.2 Persistence and degradability

Dichloromethane is not hydrolysed under normal environmental conditions. The product is slowly biodegradable in water.

Dichloromethane is photochemically oxidized in the troposphere (half-life, DT50 is calculated at 79.3 days)

Biodegradability: half-life (bacteria) approximately 18 months. Biodegradability: pseudomonas strain – 0.8g/l/hr

The product is slowly biodegradable in soil (TD50 = 14.2d). The product is substantially removed in biological treatment processes.

There is no evidence of inhibition to the aerobic treatment process at a concentration (mg/l) of 200

12.3 Bioaccumulative potential

The product has low potential for bioaccumulation. Bioconcentration factor (BCF): 0.91 to 40 l/kg

12.4 Mobility in soil

The product is predicted to have high mobility in soil

12.5 Results of PBT and vPvB assessment

Not classified as PBT or vPvB

12.6 Other adverse effects
Distribution preferentially in air. Do not allow to enter waters, waste water or soil.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment method

Product
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

Contaminated packaging
Disposal in compliance with official regulations. Handle contaminated packaging as hazardous waste in the same way of the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 1593	IMDG: 1593	IATA-DGR: 1593

14.2 UN proper shipping name

ADR/RID:	DICHLOROMETHANE
IMDG:	DICHLOROMETHANE
IATA-DGR:	DICHLOROMETHANE

14.3 Transport hazard class(es)

ADR/RID: 6.1	IMDG: 6.1	IATA-DGR: 6.1

14.4 Packaging group

ADR/RID: III	IMDG: III	IATA-DGR: III

14.5 Environmental hazards

ADR/RID: no	IMDG Marine pollutant: no	IATA-DGR: no

14.6 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No data available

14.7 Special precautions for user
No data available

SECTION 15: REGULATORY INFORMATION

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

No data available

SECTION 16: OTHER INFORMATION

This information is based on present level of our knowledge, however, this shall not constitute a guarantee product features and shall not establish a legally valid contractual relationship.

Abbreviations:

ADR : European agreement concerning the international carriage of dangerous goods by road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association

ICAO : International Civil Aviation Organization

RID : Regulations concerning the International Carriage of Dangerous goods by rail.

Notice to reader

The information contained in this Safety Data Sheet is based on the present state of knowledge and current national legislation. It provides guidance on health, safety and environmental aspects of the products and should not be construed as any guarantee of technical performance or suitability for particular application.

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