Elite Advanced Materials Sdn Bhd

SAFETY DATA SHEET

According to Regulation (EC) No 453/2010

Version 1.4
Revision Date: 09.12.2016
Printing Date: 09.12.2016

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

1.1 Product identifier

Product name : **2-Propanol**

Included product code : IPA010-2.5, IPA010-4.0, IPA012-2.5, IPA012-4.0, IPA011-2.5P, IPA011-25P, IPA011-25M, IPA011-200M, IPA008-2.5P, IPA011-25P, IPA008-25M, IPA008-200M, IPA006-2.5P, IPA006-25P, IPA006-25M, IPA006-200M

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 Ind. Est.
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]

Flammable liquids	Category 2
Eye irritation	Category 2
Specific target organ systemic toxicity - single exposure	Category 3
Specific target organ toxicity – repeated exposure	Category 2

2.2 Label elements

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

Hazard pictograms

GHS02

GHS07

Signal word

Danger

Hazard statements

H225	Highly flammable liquid and vapour
H319	Causes serious eye irritation
H336	May cause drowsiness or dizziness

Precautionary statements

P210	Keep away from heat/ sparks/open flames/hot surfaces. — No smoking
P233	Keep container tightly closed
P261	Avoid breathing vapours
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

2.3 Other hazards

Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Synonyms : Isopropanol

Formula : C_3H_8O

Molecular Weight : 60.10 g/mol

CAS-No. : 67-63-0

Hazardous components according to Regulation (EC) No 1272/2008

Component	Identity	Classification Code	H-Code	Concentration (by wt)
2-Propanol	CAS-No.: 67-63-0 EC-No.: 200-661-7 Index-No.: 603-117-00-0	Flam. Liq. 2 Eye Irritat. 2 STOT SE 3	H225 H319 H336	<=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.

After eye contact
Rinse opened eye for 15 minutes under running water and seek medical advice.

After skin contact
Remove contaminated clothing and wash the skin thoroughly with soap and water or a recognized cleaner for at least 15 minutes. Watch out for any remaining product between skin and clothing, watches, shoes, etc. Consult a doctor if skin irritation persists.

After swallowing
Do not give the patient anything orally. Keep the person exposed at rest. Do not induce vomiting. Seek medical attention, showing the label.

Inhalation
Supply fresh air and consult doctor in case of symptoms.

Information for doctor
There are no particular measures are known, treat according to symptoms.

4.2 Most important symptoms and delayed symptoms and effects

Irritant effects, respiratory paralysis, drowsiness, dizziness, unconsciousness, narcosis, narcosis, inerbriation, headache, somnolence, coma
Drying-out effect resulting in rough and chapped skin

4.3 Indication of any immediate medical attention and special treatment

No data available.

SECTION 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide (CO_2) to extinguish flames.

Unsuitable extinguishing media
None

5.2 Special hazards arising from the substance or mixture

The vapour is heavier than air, spreads along the ground and distant ignition is possible. Carbon monoxide may be evolved if incomplete combustion occurs.

5.3 Advice for fire-fighters

Special protective equipment for firefighters. Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing

5.4 Further information

Use water spray to cool unopened containers.

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. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

6.2 Environmental precautions

Do not discharge into drains or waterways.

6.3 Methods and material for containment and cleaning up

Allow residues to evaporate or soak up with an appropriate absorbent material. Dispose of contaminated material as waste according to section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precaution for safe handling

Prevent contact with skin and eyes. Avoid inhalation of vapour or mist.
Container must closed tightly and away from sources of heat, sparks and naked flames.
Take precautionary measures against static discharges.

7.2 Conditions for safe storage, including any incompatibilities

The container must close tightly in a cool dry, well-ventilated place.
Keep away from all sources of ignition, heat and direct sunlight.
Avoid accumulation of electrostatic charges.
Handle and store under inert gas. Hygroscopic.

7.3 Specific end use

No further relevant information available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Isopropyl alcohol	TWA: 200 ppm STEL: 400 ppm	(Vacated) TWA: 400 ppm (Vacated) TWA: 980 mg/m^3 (Vacated) STEL: 500 ppm (Vacated) STEL: 1, 225 mg/m^3 TWA: 400 ppm TWA: 980 mg/m^3	IDLH: 2,000 ppm TWA: 400 ppm TWA: 980 mg/m^3 STEL: 500 ppm STEL: 1,225 mg/m^3

8.2 Exposure control

Personal protection measures, such as personal protective equipment
Never eat, drink or smoke during handling the chemical. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

Eye/ face protection

Avoid contact with eyes.
Use eye protectors designed to protect against liquid splashes
Before handling, wear safety goggles in accordance with standard EN166.

Hand protection

Use appropriate protective gloves that are resistant to chemical agents in accordance with standard EN347.
Gloves must be selecting as indicated by the application and term of utilization at the workstation.

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

Full contact*
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 480 min
Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

Splash contact*
Material: Nitrile rubber
Minimum layer thickness: 0.2 mm
Break through time: 60 min
Material tested: Dermatril® P (KCL 743 / Aldrich Z677388, Size M)

*Source – Sigma Aldrich, 2015

Body protection
Avoid skin contact
Wear appropriate protective clothing
After contact with the product, all parts of the body that have been soiled must be washed.

Respiratory protection
Avoid breathing vapours
If the ventilation is insufficient, wear appropriate breathing apparatus.
When workers are confronted with concentrations that are above occupational exposure limits, they should wear an appropriate, approved, respiratory protection device.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	:	Liquid
Color	:	colorless
Ordor	:	alcohol-like
Ordor threshold	:	Not determined
pH - value	:	Not determined
Melting point / Range	:	-89.0 °C
Boiling point / Range	:	82.6 °C
Flash point	:	11.7 °C [closed cup]
Evaporation rate	:	3.0
Flammability limit - LEL	:	2 % (V)
Flammability limit - UEL	:	12 % (V)

Vapour pressure	:	43.2 hPA at 20 °C
Vapor density (air = 1)	:	2.1
Density	:	0.786 g/cm^3
Bulk density	:	Not determined
Solubility(ies)	:	Not determined
Water solubility	:	completely soluble
Partition coefficient:n-octanol/water	:	log Pow: 0.05
Auto-ignition temperature	:	425 °C
Decomposition temperature	:	Not determined
Viscosity	:	24cP at 25°C
Explosive properties	:	Not determined
Oxidising properties	:	Not determined

9.2 Other information

Not applicable

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Vapours may form explosive mixture with air

Formation of peroxides possible

10.2 Chemical stability

Sensitive to light

Sensitive to air

10.3 Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapours with:

Alkali metals, Alkaline earth metals, chromium (VI) oxide

Exothermic reaction with:

Oxidising agents, nitric acid, aldehydes, amines, fuming sulfuric acid, iron, aluminium, chlorine, phosphorus trichloride, strong acids

Risk of explosion with:

Chlorates, phosgene, organic nitro compounds, hydrogen peroxide, nitrogen oxides, perchlorates

10.4 Conditions to avoid

Accumulation of electrostatic charges, heating, heat, flames and hot surfaces

10.5 Incompatible materials

Oxidising agents, Acid anhydrides, Aluminium, Halogenated compounds, Acids

10.6 Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO_2), Peroxides

SECTION 11: TOXICOLOGY INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Isopropyl alcohol	5,840 mg/kg (Rat)	13,900 mg/kg (Rat) 12,870 mg/kg (Rabbit)	72.6 mg/L/4h (Rat)

Skin corrosion/irritation
Skin - rabbit
Remarks: Not irritating to skin.

Serious eye damage/eye irritation
Eyes - rabbit
Remarks: Causes serious eye irritation.

Respiratory or skin sensitisation
Remarks: Not expected to be a sensitiser.

Germ cell mutagenicity
Remarks: Not mutagenic.

Carcinogenicity
This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (2-Propanol)

Reproductive toxicity
Remarks: Does not impair fertility. Not a developmental toxicant.

Specific target organ toxicity - single exposure
Remarks: May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

Additional Information
Remarks: Exposure may enhance the toxicity of other materials, Classifications by other authorities under varying regulatory frameworks may exist.

SECTION 12: ECOLOGY INFORMATION

Aquatic toxicity:

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Isopropyl alcohol	EC50: >1,000mg/L/72h (Desmodesus subspicatus) EC50:>1,000mg/L/96h (Desmodesmus subspicatus)	LC50: > 1,400,000 µg/L/96h (Lepomis macrochirus) LC50: = 11,130 mg/L/96h static (Pimephales promelas) LC50: = 9,640 mg/L/96h flow-through (Pimephales promelas)	35,390 mg/L EC50 Photobacterium phosphoreum 5 min	13,299 mg/L EC50 = 48h 9,714 mg/L EC50 = 24h

Persistence and degradability
No data available

Bioaccumulative potential
No bioaccumulation is to be expected (log Pow <= 4)

Mobility in soil
No data available

Results of PBT and vPvB assessment:
PBT : Not applicable
vPvB : Not applicable

Other adverse effects
No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment method

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 1219	IMDG: 1219	IATA-DGR: 1219

14.2 UN proper shipping name

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

14.3 Transport hazard class(es)

ADR/RID: 3	IMDG: 3	IATA-DGR: 3

14.4 Packaging group

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

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
No data available

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

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.

Relevant phrases:

H225 Highly flammable liquid and vapor

H319 Causes serious eye irritation

H336 May cause drowsiness or dizziness

R11 Highly flammable

R36 Irritating to eyes

R67 Vapours may cause drowsiness and dizziness

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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