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Material Safety Data Sheet

ISOPROPYL PALMITATE

Section 1 - Product Identification

Product Name : Isopropyl Palmitate

CAS No. : 142-91-6

Synonym : chlorine bleach, conc active chlorine=12,5% / Hypochlorite solution / hypochlorite, solution

Company Identification : Tradeasia International Pte. Limited

Address :

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Section 2 – Composition/Information on Ingredients

Substances

Name of substance	Isopropyl Palmitate
Identifiers	Isopropyl hexadecanoate; Hexadecanoic acid; 1-methylethyl ester
CAS No	142-91-6
Molecular formula	CH3(CH2)14COOCH(CH3)2
Molar Mass	298.5 g/mol

Section 3 – Hazardous Ingredients & Occupational Exposure Limits

Classification of the substances or mixture

Classification acc. to OSHA "Hazard Communication Standard" 29 CFR 1910.1200)

Based on available data, the classification criteria are not met

Section 4 – First-Aid Measures

First-aid measures general:	Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with labored breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Call a physician immediately.
First-aid measures after inhalation:	Remove person to fresh air and keep comfortable for breathing. Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service. First-aid measures after skin contact: Wash immediately with lots of water (15 minutes)/shower. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital. Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Call a physician immediately.
First-aid measures after eye contact:	Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion:	Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Do not give activated charcoal. Do not give chemical antidote. Immediately consult a doctor/medical service. Call Poison Information

	Centre (www.big.be/antigif.htm). Ingestion of large quantities: immediately to hospital. Take the container/vomit to the doctor/hospital. Rinse mouth. Do not induce vomiting. Call a physician immediately.

Most Important Symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. EXPOSURE TO HIGH CONCENTRATIONS: Possible laryngeal spasm/oedema. Risk of lung oedema. Respiratory difficulties.

Symptoms/injuries after skin contact: Caustic burns/corrosion of the skin. Burns.

Symptoms/injuries after eye contact: Corrosion of the eye tissue. Permanent eye damage. Serious damage to eyes.

Symptoms/injuries after ingestion: Vomiting. Burns to the gastric/intestinal mucosa. Possible esophageal perforation. Bleeding of the gastrointestinal tract. Shock. Disturbances of consciousness. FOLLOWING SYMPTOMS MAY APPEAR LATER: Tumous of the gastrointestinal tract. Burns.

Chronic symptoms: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Fall of hair. Skin rash/inflammation. Gastrointestinal complaints

Indication of any immediate medical attention and special treatment needed

Treat symptomatically

Section 5 – Employee Protection

1. Extinguishing media

Suitable extinguishing media: Adapt extinguishing media to the environment. Water spray. Dry powder. Foam. Carbon dioxide.

Unsuitable extinguishing media: No unsuitable extinguishing media known.

2. Special hazards arising from the substance or mixture

Fire hazard: DIRECT FIRE HAZARD. Non-combustible. INDIRECT FIRE HAZARD. Reactions involving a fire hazard: see "Reactivity Hazard".

Explosion hazard: INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".

Reactivity: On burning: release of toxic and corrosive gases/vapours (chlorine, hydrogen chloride). Decomposes slowly on exposure to air: oxidation which increases fire hazard and release of toxic and corrosive gases/vapours (chlorine). This reaction is accelerated on exposure to light, on exposure to temperature rise and on exposure to (some) metals. Reacts violently with (some) acids/bases: release of toxic and corrosive gases/vapours (chlorine).

3. Advice for firefighters

Precautionary measures fire: Exposure to fire/heat: consider evacuation.

Firefighting instructions: Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible, collect or contain it.

Protection during firefighting: Heat/fire exposure: compressed air/oxygen apparatus. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

Section 6 – Accidental Release Measures

1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Protective equipment: Gloves. Face-shield. Corrosion-proof suit. Large spills/in enclosed spaces: compressed air apparatus. Large spills/in enclosed spaces: gas-tight suit. Reactivity hazard: compressed air/oxygen apparatus. Reactivity hazard: gas-tight suit. See "Material-Handling" to select protective clothing.

Emergency procedures: Ventilate spillage area. Keep upwind. Mark the danger area. Seal off low-lying areas. Close doors and windows of adjacent premises. No naked flames. Wash contaminated clothes. Large spills/in confined spaces: consider evacuation. In case of reactivity hazard: consider evacuation. Avoid contact with skin and eyes. Do not breathe fume, vapors.

For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

2. Environmental precautions

Avoid release to the environment. Prevent soil and water pollution. Prevent spreading in sewers.

3. Methods and material for containment and cleaning up

For containment: Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the liquid spill. If reacting: dilute toxic gas/vapour with water spray. Take account of toxic/corrosive precipitation water. Heat exposure: dilute toxic gas/vapour with water spray. Collect spillage.

Methods for cleaning up: Take up liquid spill into absorbent material. Liquid spill: neutralize. Take up liquid spill into a non-combustible material e.g.: sand, earth, vermiculite. Scoop absorbed substance into closing containers. See "Material-handling" for suitable container materials. Spill must not return in its original container. Damaged/cooled tanks must be emptied. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

Other information: Dispose of materials or solid residues at an authorized site.

4. Reference to other sections

For further information refer to section 13.

Section 7 – Handling and Storage

1. Precautions for safe handling

Precautions for safe handling: Ensure good ventilation of the work station. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Keep the substance free from contamination. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Keep away from naked flames/heat. Observe strict hygiene. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Avoid contact with skin and eyes. Do not breathe fume, vapors. Wear personal protective equipment.

Hygiene measures: Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store locked up. Store in a well-ventilated place. Keep cool.

Heat-ignition: KEEP SUBSTANCE AWAY FROM: heat sources.

Prohibitions on mixed storage: KEEP SUBSTANCE AWAY FROM: reducing agents. (strong) acids. (strong) bases. metals. organic materials.

Storage area: Store in a cool area. Keep out of direct sunlight. Store in a dry area. Store in a dark area. Keep locked up. Provide for a tub to collect spills. Unauthorized persons are not admitted. Keep only in the original container. Meet the legal requirements.

Special rules on packaging: SPECIAL REQUIREMENTS: closing. clean. opaque. correctly labelled. meet the legal requirements. Secure fragile packaging in solid containers.

Packaging materials: SUITABLE MATERIAL: synthetic material. polyethylene. glass. stoneware/porcelain. MATERIAL TO AVOID: aluminium, zinc.

Section 8 – Exposure Controls/Personal Protection (later)

Control Parameters

ISOPROPYL PALMITATE		
ACGIH	ACGIH TWA (ppm)	None listed
ACGIH	ACGIH STEL (ppm)	None listed
ACGIH	Remarks (ACGIH)	None listed
OSHA	OSHA PEL (celling) (mg/m3)	None listed
OSHA	OSHA PEL (celling) (ppm)	None listed

Exposure controls

Appropriate engineering controls: Ensure good ventilation of the work station.

Materials for protective clothing: GIVE EXCELLENT RESISTANCE: No data available. GIVE GOOD RESISTANCE: neoprene. PVC. GIVE LESS RESISTANCE: No data available. GIVE POOR RESISTANCE: No data available.

Hand protection: Gloves.

Eye protection: Face shield. Safety glasses.

Skin and body protection: Corrosion-proof clothing.

Respiratory protection: Wear gas mask with filter type B if conc. in air > exposure limit. High vapour/gas concentration: self-contained respirator.

Environmental exposure controls: Avoid release to the environment.

Section 9 – Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Appearance: Colorless liquid

Color: Colorless to yellow

Odor: Mild odour. Characteristic odour

Odor threshold: No data available

pH: No data available

pH solution: No data available

Melting point: No data available

Freezing point: < 15 °C

Boiling point: > 150 °C

Flash point: ca. 170°C

Relative evaporation rate (butyl acetate=1): No data available

Flammability (solid, gas): No data available

Explosion limits: No data available

Explosive properties: No data available

Oxidizing properties: No data available

Vapor pressure: No data available

Relative density: No data available

Relative vapor density at 20 °C: No data available

Specific gravity / density: ca. 853, 1 kg/m³ (20°C) ca. 839, 3 kg/m³ (40°C) ca. 797, 8 kg/m³ (100°C)

Molecular mass: 298.5 g/mol

Solubility: Water: < 0.1 mg/l (20°C)

Log Pow: > 3

Log Kow: No data available

Auto-ignition temperature: ca. 235°C

Decomposition temperature: No data available

Viscosity: No data available

Viscosity, kinematic: No data available

Viscosity, dynamic: ca. 8 mPa*s (20°C)

Other information

VOC content: Not applicable

Other properties: Gas/vapour heavier than air at 20°C. Clear. Substance has a basic reaction.

Section 10 – Stability and Reactivity

Reactivity

On burning: Release of (carbon monoxide - carbon dioxide)

Chemical stability

Stable under normal conditions

Possibility of hazardous reactions

No data available

Conditions to avoid

No data available

Incompatible materials

Strong oxidizing agents

Hazardous decomposition products

No data available

Section 11 – Toxicological Information

Information on toxicological effects

Acute toxicity: Not classified

ISOPROPYL PALMITATE

LD50 oral rat	> 2000 mg/kg (Rat)
LD50 dermal rabbit	>5000 mg/kg (Rabbit)

Skin corrosion/irritation: Not classified

Serious eye damage/irritation: Not classified

Respiratory or skin sensitization: Not classified

Germ cell mutagenicity: Not classified

Carcinogenicity: Not classified

ISOPROPYL PALMITATE

IARC group	3 - Not classifiable

Reproductive toxicity: Not classified

Specific target organ toxicity (single exposure): Not classified

Specific target organ toxicity (repeated exposure): Not classified

Aspiration hazard: Not classified

Symptoms/injuries after inhalation: Inhalation of mist or vapor may cause respiratory tract irritation.

Symptoms/injuries after skin contact: Can cause mild to moderate skin irritation. It can be absorbed through the skin.

Symptoms/injuries after eye contact: Can cause eye irritation.

Symptoms/injuries after ingestion: Low hazard

Chronic symptoms: No data available

Section 12 – Ecological Information

1. Toxicity

Ecology - general: Classification concerning the environment: not applicable. Very toxic to aquatic life.

Ecology - air: Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

Ecology - water: Contains ground water contaminating component(s). Maximum concentration in drinking water: 200 mg/l (sodium) (Directive 98/83/EC). Highly toxic to fishes. pH shift.

ISOPROPYL PALMITATE	
LC50 fish 1	> 10000 mg/l (96 h; semi-static (Danio rerio))

2. Persistence and degradability

ISOPROPYL PALMITATE	
Persistence and degradability	Immiscible with water May persist based on information available.
Biochemical oxygen demand (BOD	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

3. Bioaccumulative potential

ISOPROPYL PALMITATE	
Bioaccumulative potential	Bioaccumulation: not applicable.

4. Mobility in soil

ISOPROPYL PALMITATE

ISOPROPYL PALMITATE	
Ecology - soil	Is not likely mobile in the environment due its low water solubility.

5. Other adverse effects

No additional information available

Section 13 – Disposal Considerations

Waste treatment methods

Waste treatment methods: Dispose of contents/container in accordance with licensed collector's sorting instructions.

Waste disposal recommendations: Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove for physico-chemical/biological treatment. May be discharged to company wastewater treatment plant.

Additional information: LWCA (the Netherlands): KGA category 02. Hazardous waste according to Directive 2008/98/EC.

Section 14 – Transport Information

Department of Transportation (DOT)

In accordance with DOT

Transport document description: UN1791 Hypochlorite solutions, 8, II

UN-No. (DOT): UN1791

Proper Shipping Name (DOT): Hypochlorite solutions

Transport hazard class(es) (DOT): 8 - Class 8 - Corrosive material 49 CFR 173.136

Hazard labels (DOT): 8 – Corrosive

Packing group (DOT): II - Medium Danger

Dangerous for the environment: Yes

Marine pollutant: Yes

DOT Packaging Non-Bulk (49 CFR 173.xxx): 202

DOT Packaging Bulk (49 CFR 173.xxx): 242

DOT Special Provisions (49 CFR 172.102): A7 - Steel packaging must be corrosion-resistant or have protection against corrosion. B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized.

B15 - Packaging must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance.

IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.

IP5 - IBCs must have a device to allow venting. The inlet to the venting device must be located in the vapor space of the IBC under maximum filling conditions.

N34 - Aluminum construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material.

T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3)

TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.

TP24 - The portable tank may be fitted with a device to prevent the build up of excess pressure due to the slow decomposition of the hazardous material being transported. The device must be in the vapor space when the tank is filled under maximum filling conditions. This device must also prevent an unacceptable amount of leakage of liquid in the case of overturning.

DOT Packaging Exceptions (49 CFR 173.xxx) : 154

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27): 1 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75): 30 L

DOT Vessel Stowage Location: B - (i) The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) ‘‘On deck only’’ on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

DOT Vessel Stowage Other: 26 - Stow ‘‘away from’’ acids

Additional information

Other information: No supplementary information available.

ADR

Transport document description: UN 1791, 8, III, (E)

Packing group (ADR): III

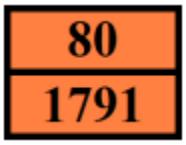
Class (ADR): 8 - Corrosive substances

Hazard identification number (Kemler No.): 80

Classification code (ADR): C9

Hazard labels (ADR): 8 - Corrosive substances

Orange plates:



Tunnel restriction code (ADR): E

Transport by sea

UN-No. (IMDG): 1791

Proper Shipping Name (IMDG): HYPOCHLORITE SOLUTION

Class (IMDG): 8 - Corrosive substances

Packing group (IMDG): II - substances presenting medium danger

EmS-No. (1): F-A

EmS-No. (2): S-B

Air transport

UN-No. (IATA): 1791

Proper Shipping Name (IATA): Hypochlorite solution

Class (IATA): 8 - Corrosives

Packing group (IATA): III - Minor Danger

Section 15 – Regulatory Information

1. US Federal regulations

ISOPROPYL PALMITATE	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Not listed on the United States SARA Section 313	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	100 lb

2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

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

Skin Corr. 1B H314

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

C; R34

R31

Full text of R-phrases: see section 16

3. National regulations

No additional information available

4. US State regulations

ISOPROPYL PALMITATE

State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

Section 16 - Additional Information

Full text of H-phrases:

------ Aquatic Acute 1 Hazardous to the aquatic environment - Acute Hazard Category 1

------ Eye Dam. 1 Serious eye damage/eye irritation Category 1

------ Skin Corr. 1A Skin corrosion/irritation Category 1A

------ H314 Causes severe skin burns and eye damage

------ H318 Causes serious eye damage

------ H400 Very toxic to aquatic life

NFPA health hazard: 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard: 0 - Materials that will not burn.

NFPA reactivity: 2 - Normally unstable and readily undergo violent decomposition but do not detonate. Also: may react violently with water or may form potentially explosive mixtures with water.

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product