

HUNTSMAN

MATERIAL SAFETY DATA SHEET

WAX SOLUTION IN STYRENE

Hazardous according to the criteria of NOHSC

COMPANY DETAILS

Company Name: Huntsman Chemical Company Australia Pty. Limited ABN 48 004 146 338
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IDENTIFICATION

Product Name: WAX SOLUTION IN STYRENE

Other Names: Paraffin wax 5% w/w solution in styrene
Paraffin wax 10% w/w solution in styrene

Manufacturer's Product Codes: T0003B 5% Wax Solution: 105601, 105618, 105764, 109044,
113304
T0011A 10% Wax Solution: 118481

ADG Code Classification

UN No. 2055

Proper Shipping Name: STYRENE MONOMER, INHIBITED

Dangerous Goods Class: 3

Subsidiary Risk: Not applicable

Packing Group: III

Hazchem Code: 3[Y]

Emergency Information: IERG 19P (SAA/NZS HB: 76) or EPG 3A1 (AS2931)

Poisons Schedule Number: 5

Australian Inventory of Chemical Substances: All components are listed or meet requirements of NICNAS.

Use: Additive for polyester resin solutions and gelcoats which are used in the fibreglass industry.

PHYSICAL DESCRIPTION/PROPERTIES

Appearance: Transparent straw coloured liquid with an aromatic odour.

Boiling Point: Styrene: 145 deg.C @ 760 mm Hg. May polymerise below boiling point.

Vapour Pressure: Styrene: 4.5 mm Hg @ 20 deg.C

Specific Gravity: 0.9 @ 25 deg.C (H2O = 1)

Flash Point: 31 deg.C Method: Tag Closed Cup

Flammability Limits: Styrene: 1.1-6.1 % by volume in air

Solubility in Water: Immiscible

HUNTSMAN

MATERIAL SAFETY DATA SHEET

WAX SOLUTION IN STYRENE

OTHER PROPERTIES

Vapour Density: Styrene: 3.6 (Air = 1)
Solubility in Organic Solvents: Miscible with acetone, glycol ethers, toluene.
Evaporation Rate: Styrene: 0.5 (n-Butyl Acetate=1)
Odour Threshold: Styrene: Approx. 0.15 ppm

INGREDIENTS

Chemical Name	CAS No.	Proportion % wt.
Styrene	100-42-5	90-95
Paraffin wax	8002-74-2	5-10

HEALTH HAZARD INFORMATION

HEALTH EFFECTS

Acute - Swallowed:

No data. Styrene may cause irritation to the mouth and throat and abdominal discomfort, nausea and vomiting.

Acute - Eye:

Irritating to eyes. Possible injury to cornea.

Acute - Skin:

Irritating to skin. Prolonged or repeated contact may cause irritant contact dermatitis (itching dryness redness).

Acute - Inhaled:

Inhalation of styrene vapour and/or product mist can cause irritation to the respiratory system and central nervous system depression resulting effects such as dizziness, drowsiness, euphoria, loss of coordination, headache, nausea and vomiting.

Chronic:

Repeated skin contact may cause irritant contact dermatitis. Repeated inhalation of styrene and/or product mist may cause lung damage. Prolonged and repeated overexposure to styrene may cause damage to the liver and kidney.

Other Health Effects Information:

Carcinogenicity (Capability to Cause Cancer)

Chronic (lifetime) inhalation studies on rats and mice exposed to styrene vapours showed evidence of lung tumours in mice but not in rats. Further research is in progress to determine the relevance of these mouse tumours to humans.

It should be noted, however, that several workplace exposure (epidemiological) studies investigating the incidence of cancer in a large number of workers employed in the styrene, polystyrene and reinforced plastics industries have shown no increased incidence of cancer risk due to workplace exposures to styrene.

HUNTSMAN

MATERIAL SAFETY DATA SHEET

WAX SOLUTION IN STYRENE

The International Agency for Research on Cancer (IARC) has evaluated styrene and classified it as "Possibly Carcinogenic to Humans", under group 2B.

The National Occupational Health and Safety Commission (NOHSC) has not classified styrene as a carcinogen under any category.

Developmental and Reproductive Toxicity

Laboratory studies investigating human developmental and reproductive toxicity of styrene have indicated that styrene exposures, either as vapour, oral or drinking water, do not result in any specific developmental or reproductive toxicity. Although some minor developmental effects were noted in some studies, these effects were either within the historical range for these effects, or were secondary to maternal toxicity from exposure to relatively high levels of styrene.

Although there have been very few studies investigating human developmental and reproductive toxicity following exposures to styrene, the limited available information supports the observation that there is no evidence of developmental or reproductive toxicity from workplace exposures to styrene.

Neurological (Nervous System) Effects

Some evidence of hearing loss was observed in rats repeatedly exposed to high concentrations of styrene vapour. Effects on human hearing are not expected from workplace exposures to styrene.

Slight effects on colour discrimination have been detected in workers exposed to styrene vapours. These subtle effects are unlikely to be noticed by those affected.

Other nervous system effects have been noted in humans exposed to styrene. However, these effects have not been consistently or reliably observed at exposure levels below 50 ppm.

Genetic effects

Some cytogenetic (cell formation) studies on workers exposed to styrene have shown increases in chromosomal (genetic) damage, although these effects do not appear to be related to styrene exposure and are not supported by the data observed in animal studies.

Medical Conditions Aggravated by Exposure:

Because of styrene's defatting properties, prolonged and repeated skin contact may aggravate an existing dermatitis (skin condition). Repeated overexposure may aggravate or enhance existing nervous system dysfunction. Repeated overexposure may aggravate existing respiratory, liver or kidney disease.

FIRST AID

Swallowed:

If swallowed, give a glass of water. Do NOT induce vomiting. Never give drink to an unconscious person. Transport to a doctor or hospital quickly. For further advice call Poisons Information Centre (Phone Australia 13 1126).

Eye:

Immediately flush with plenty of water for at least 15 minutes, with eyelids held open. Seek immediate medical advice.

Skin:

Immediately remove contaminated clothing. Wash skin thoroughly with soap and water. Wash clothing before reuse.

HUNTSMAN

MATERIAL SAFETY DATA SHEET

WAX SOLUTION IN STYRENE

Inhaled:

Remove to fresh air. Seek medical assistance. If not breathing give artificial respiration. If breathing difficult give oxygen.

First Aid Facilities:

Eye wash station and showering facilities.

ADVICE TO DOCTOR

Treat symptomatically. Effects may be delayed and include pulmonary oedema.

PRECAUTIONS FOR USE

EXPOSURE STANDARDS

	<u>NOHSC EXPOSURE STANDARDS</u>		
	<u>8 HR TWA</u>	<u>STEL (15 MIN'S)</u>	<u>PEAK LIMITATION</u>
Styrene	50 ppm	100 ppm	None established
Paraffin wax	None established	None established	None established

Keep exposures as low as practicable below exposure standards.

ENGINEERING CONTROLS

Provide sufficient ventilation to control exposure levels below the exposure standards. Use mechanical exhaust ventilation at sources of contamination such as open process equipment.

PERSONAL PROTECTION**Respiratory Protection:**

Avoid breathing vapours and/or spray mist. If inhalation risk exists, wear air-purifying respirator fitted with organic vapour filter meeting AS/NZS1716 and selected and used in accordance with AS/NZS1715. Consult respirator supplier for appropriate equipment for a given application.

Eye Protection:

Wear chemical goggles to prevent eye contact. A full-face shield may also be required. Do not wear contact lenses.

Glove Type:

Wear impervious gloves to prevent skin contact. Supplier data indicates that Viton or polyvinyl alcohol gloves are suitable for prolonged contact with styrene. Other glove types, such as nitrile rubber, may be suitable as disposable gloves for short-term protection (eg. splash protection) Consult glove supplier.

Clothing:

Wear coveralls and safety boots where potential for skin contact is low. Wear impervious clothing, such as PVC apron, PVC splash suit and PVC boots, as appropriate for the operation, where the potential for skin contact is high.

HUNTSMAN

MATERIAL SAFETY DATA SHEET

WAX SOLUTION IN STYRENE

Other Personal Protection:

Protective clothing/equipment should meet, and be selected and used in accordance with relevant Australian Standards. Consult protective equipment/clothing suppliers to determine appropriate type equipment/clothing for a given application. Avoid contact with eyes, skin and clothing. Use only in well ventilated areas. Wash thoroughly after handling. When using, do not eat, smoke or drink. Protective equipment and clothing should be decontaminated before storage and/or reuse.

FLAMMABILITY

Flammable liquid. Vapour may form explosive mixtures with air. Avoid all ignition sources. Use only in well ventilated areas. Keep container tightly closed. Flameproof equipment is necessary in area where product is being used. Earth (ground) and bond shipping container, transfer line and receiving container. Consult AS1940 for further information on the storage and handling of flammable liquids. Handle in accordance with State or Territory regulations for flammable liquids.

SAFE HANDLING INFORMATION

STORAGE AND TRANSPORT

Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code):

Classified as Dangerous Goods (See "Identification" section). Do not load or pack with Class 1 (Explosives), Class 2.1 (Flammable Gases-where flammable liquids/gases are in bulk), Class 2.3 (Toxic Gases), Class 4.2 (Spontaneously Combustible Substances), Class 5.1 (Oxidising Agents), Class 5.2 (Organic Peroxides), Class 7 (Radioactive Substances). Transport in accordance with State and Territory regulations.

International Maritime Dangerous Goods (IMDG) Code and International Air Transport Association (IATA) Dangerous Goods Regulations:

UN 2055, STYRENE MONOMER, STABILIZED, Class 3, Packing Group III.

Other Transport and Storage Information:

Classified as Dangerous Goods (See "Identification" section for classification). Store and handle in accordance with State and Territory regulations (See "Flammability" section).

The material is a Schedule 5 Poison and must be stored, maintained and used in accordance with relevant regulations.

Keep away from sources of ignition - No smoking. Keep container tightly closed. Store in the shade, preferably below 30 deg.C. The product is inhibited with 10-20 ppm wt. Tertiary-Butyl Hydroquinone (TBC) to prevent polymerisation during transport and storage. Storage life for product quality is limited due to slow formation of polymer on storage. Use oldest stock first. Store in a well ventilated area. Keep away from direct sunlight, heat and incompatible materials. Avoid contamination with materials, such as alkylation catalysts (sulphuric acid, phosphoric acid, boron trifluoride, aluminium trichloride), halogens and halogen halides, alkali metal-graphite compounds and butyl lithium and organic peroxides, which can cause rapid polymerisation of styrene monomer. Avoid contamination with strong alkalis (caustic soda) and glycols which remove the inhibitor from styrene monomer. May polymerise violently in a closed container if subjected to strong heat.

Styrene degrades most plastics and rubbers and corrodes copper and copper alloys. Avoid these materials for storage and handling of styrene based solutions.

HUNTSMAN

MATERIAL SAFETY DATA SHEET

WAX SOLUTION IN STYRENE

SPILLS AND DISPOSAL

Spill or Leak Procedures:

Keep unprotected people away. Wear appropriate protective equipment to prevent eye and skin contact and inhalation of vapours (See "Personal Protection" section). Remove all ignition sources. Increase ventilation. For large spills, wear self-contained breathing apparatus and full protective clothing. Contain spill and absorb with inert absorbent such as sand, earth or vermiculite and seal in properly labelled containers for disposal. Alternatively, pump to salvage truck. Keep out of sewer, stormwater drains and waterways.

Waste Disposal:

The product is considered to be a hazardous waste because of its flammability and toxicity. If feasible, recycle. Dispose of by burning in an approved incinerator. In all cases, disposal should be in accordance with regulations.

Containers:

Emptied containers retain vapour and product residue and may therefore present explosive vapour and toxic material hazards. Observe all safeguards on label and in this MSDS until container is cleaned, reconditioned or destroyed. DO NOT CUT OR WELD ON OR NEAR THIS CONTAINER. In all cases, disposal should be in accordance with regulations.

FIRE/EXPLOSION HAZARD

Flammable liquid. Polymerisable in a fire situation.

Extinguishing Media:

Foam, dry chemical and carbon dioxide extinguishers may be used. Use water spray to cool exposed closed containers.

Special Fire-Fighting Procedures:

Fire-fighters and others exposed to the products of combustion (see "Hazardous Decomposition Products") should wear self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.

Unusual Fire and Explosion Hazards:

At elevated temperatures and/or in the presence of oxidising agents, such as organic peroxides, polymerisation may take place. If polymerisation takes place in a container, there is a possibility of violent rupture of the container.

Hazardous Decomposition Products:

Thermal decomposition products include carbon monoxide and carbon dioxide, styrene and acrid smoke.

HUNTSMAN

MATERIAL SAFETY DATA SHEET

WAX SOLUTION IN STYRENE

ADDITIONAL INFORMATION

HAZARDOUS SUBSTANCE CLASSIFICATION

Health hazard classification and labelling according to the criteria of NOHSC:

Overall health hazard classification: HARMFUL (Xn)

R10 Flammable.

R20 Harmful by inhalation.

R36/38 Irritating to eyes and skin.

S23 Do not breathe vapour or spray.

Note: Consult the current edition of the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) and relevant regulations for labelling requirements for product sold to the general public in Australia.

REASONS FOR REVISION

1. Supersedes Issue of 1 Apr 2002.
2. Revisions to "Identification" section (Wax 10% Solution included and IERG No. amended) and "Personal Protection-Clothing" section.

CONTACT POINT

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