Material Safety Data Sheet

Version 3.0
Revision Date 07/20/2009
Print Date 04/08/2010

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Isoprene

Product Number : I19551
Brand : Aldrich

Company : Sigma-Aldrich Canada, Ltd
2149 Winston Park Drive
OAKVILLE ON L6H 6J8
CANADA
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2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 2-Methyl-1,3-butadiene

Formula : C_5H_8

CAS-No.	EC-No.	Index-No.	Concentration
Isoprene			
78-79-5	201-143-3	601-014-00-5	>= 99 %
4-tert-Butylpyrocatechol			
98-29-3	202-653-9	-	>= 0.01 - <= 0.02 %

3. HAZARDS IDENTIFICATION

Emergency Overview

Target Organs

Central nervous system

WHMIS Classification

D2A Very Toxic Material Causing Other Toxic Effects — Carcinogen

HMIS Classification

Health Hazard: 1
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 0

Potential Health Effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.

Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

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. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point	no data available
Ignition temperature	220 °C (428 °F) - Auto-flammability

Suitable extinguishing media
For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, 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.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods for cleaning up
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

Handling
Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. Use explosion-proof equipment.

Storage
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. Store in cool place.

Recommended storage temperature: 2 - 8 °C

Heat sensitive.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

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).

Hand protection
Handle with gloves.

Eye protection
Face shield and safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid

Safety data

pH	no data available
Melting point	-146 °C (-231 °F)
Boiling point	34 °C (93 °F)
Flash point	no data available
Ignition temperature	220 °C (428 °F) - Auto-flammability
Lower explosion limit	1 %(V)
Upper explosion limit	9.7 %(V)
Vapour pressure	133 hPa (100 mmHg) at -16 °C (3 °F) 793 hPa (595 mmHg) at 21 °C (70 °F)
Density	0.681 g/mL at 25 °C (77 °F)
Water solubility	0.38 g/l at 20 °C (68 °F)
Partition coefficient: n-octanol/water	log Pow: 3.2 - 4.5 at 20 °C (68 °F)

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Conditions to avoid
Heat, flames and sparks.

Materials to avoid
Oxidizing agents, Strong bases, Ammonia, Alkali metals, Alcohols, Oxygen

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

Hazardous reactions
Vapours may form explosive mixture with air.

Contains the following stabiliser(s):
4-tert-Butylpyrocatechol (>=0.01 - <=0.02 %)

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 2,043 - 2,210 mg/kg

LC50 Inhalation - rat - 4 h - 180 mg/l

Irritation and corrosion

Skin - rabbit - Mild skin irritation

Sensitisation

no data available

Chronic exposure

Carcinogenicity - rat - Inhalation
Tumorigenic:Carcinogenic by RTECS criteria. Skin and Appendages: Other: Tumors.

Carcinogenicity - mouse - Inhalation
Tumorigenic:Carcinogenic by RTECS criteria. Lungs, Thorax, or Respiration:Tumors.

This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Isoprene)

May alter genetic material.

Signs and Symptoms of Exposure

Inhalation of vapors may cause:, Dizziness, Irregular cardiac activity, narcosis, Nausea, Asphyxia, CNS depression with hypertension or circulatory failure, and respiratory depression, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.
Target Organs	Central nervous system,

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

no data available

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 75 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates.	Immobilization EC50 - Daphnia magna (Water flea) - 140 mg/l - 48 h
Toxicity to algae	Growth inhibition EC50 - Scenedesmus quadricauda (Green algae) - > 1,000 mg/l - 96 h

Further information on ecology

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

no data available

13. DISPOSAL CONSIDERATIONS

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 1218 Class: 3 Packing group: I
Proper shipping name: Isoprene, stabilized
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 1218 Class: 3 Packing group: I EMS-No: F-E, S-D
Proper shipping name: ISOPRENE, STABILIZED
Marine pollutant: No

IATA
UN-Number: 1218 Class: 3 Packing group: I
Proper shipping name: Isoprene, stabilized

15. REGULATORY INFORMATION

DSL Status
All components of this product are on the Canadian DSL list.

WHMIS Classification

D2A	Very Toxic Material Causing Other Toxic Effects	Carcinogen

16. OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.