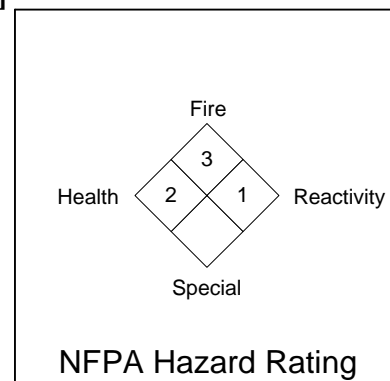


Material Safety Data Sheet: Isopropylbenzene [Cumene]**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION****Product name** Isopropylbenzene [Cumene]**Effective date** August 2007**Synonyms** Isopropylbenzene, cumol,
2-phenylepropane,
(1-methylethyl) benzene,
cumene**Chemical formula** $(\text{CH}_3)_2 \text{CHC}_6\text{H}_5$ **CAS name & no.** Benzene, (1-methylethyl), 98-82-8**Manufacturer's name and address** Georgia Gulf Chemicals and Vinyls, LLC
P.O. Box 1959
Pasadena, TX 77501**Emergency telephone number** For transportation emergencies:
CHEMTREC (800) 424-9300
For all other emergencies: (225) 685-2500**MSDS contact** Corporate Health & Safety Department
P.O. Box 629
Plaquemine, LA 70765
Phone Number (225) 685-2500

Material Safety Data Sheet: Isopropylbenzene [Cumene]**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS No.	Wt.%.
Isopropylbenzene [Cumene]	98-82-8	99.97

3. HAZARDS IDENTIFICATION**PRECAUTIONARY INFORMATION**

Flammable liquid. Eye, skin and respiratory tract irritant. May cause narcosis. Causes dizziness, drowsiness and unconsciousness.

POTENTIAL HEALTH EFFECTS**Primary Routes of Entry**

Inhalation, ingestion, skin, and eye contact.

Acute Effects

Isopropylbenzene may act as a central nervous system depressant and a narcotic. Inhalation of high vapor concentrations may cause dizziness, slight incoordination, and unconsciousness. This chemical may also be toxic to the liver, spleen, and gall bladder, but there is little human evidence of these effects. This chemical is also a skin and eye irritant.

Chronic Effects

Prolonged skin contact may result in skin rashes. Chronic experiments in animals found isopropylbenzene to cause damage to the spleen and fatty changes in the liver, but no renal or pulmonary irritancy. Subacute inhalation experiments showed no significant changes in peripheral blood, but exhibited some liver, kidney, and lung effects.

Potential Adverse Chemical Interactions

Persons with kidney diseases, liver diseases, skin diseases or respiratory diseases, especially obstructive airway disease, may be at increased risks due to the toxic effects of isopropylbenzene on these organs.

Carcinogen Status

Isopropylbenzene is not considered to be carcinogenic by OSHA, NIOSH, NTP, IARC, or EPA.

Material Safety Data Sheet: Isopropylbenzene [Cumene]**4. FIRST AID MEASURES****Inhalation**

If a person breathes large amounts of this chemical, move the exposed person to fresh air at once. If breathing has stopped, begin artificial respiration and if heart action has stopped, CPR. Get medical attention as soon as possible.

Skin Contact

If this chemical contacts the skin, flush the contaminated skin with copious quantities of water for at least 15 minutes. If this chemical penetrates the clothing, immediately remove clothing and flush the skin with water promptly. If irritation persists after washing, get medical attention.

Eye Contact

If the chemical contacts the eyes, immediately wash the eyes with large amounts of room temperature water for at least 15 minutes, occasionally lifting the lower and upper lids. Get medical attention immediately.

Ingestion

If the chemical is ingested do not induce vomiting. Get medical attention immediately.

5. FIRE FIGHTING MEASURES

Flash Point 33°C (closed cup)

Flammable Limits (% By Vol.)

Lower Explosive Limit (LEL) 0.9

Upper Explosive Limit (UEL) 6.5

Autoignition Temperature 425° C

Fire Fighting Procedures/Fire Extinguishing Media

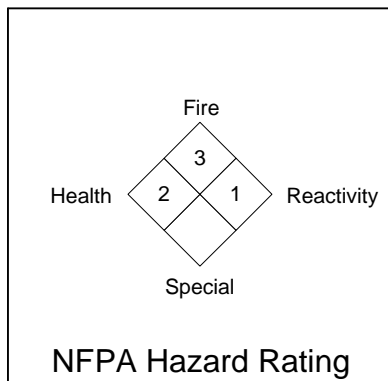
Keep unnecessary people away; isolate hazard area and deny entry. Avoid breathing vapors, stay upwind. Use NIOSH approved self-contained respirator in the positive pressure mode as combustion of isopropylbenzene produces toxic vapors. Structural firefighter's protective clothing is NOT effective for this material. Use an acceptable halon replacement such as carbon dioxide extinguishers, alcohol foam or dry chemical for small fires. Large fires should be extinguished with alcohol foam. Water sprays may be used to keep the containers cool but may be insufficient to extinguish the fire. Direct water streams may promote the spread of isopropylbenzene flames, as isopropylbenzene is lighter than water. Stay away from ends of tanks. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Isolate for 1/2 mile in all directions if tank car or truck is involved in fire.

Unusual Fire and Explosion Hazards

Dangerous fire and explosion hazard when exposed to heat or flame. Isopropylbenzene vapor forms explosive mixtures in air. Flowing isopropylbenzene may ignite by self-generated static electricity. Do not weld, cut, drill, grind, or perform similar operations on or near containers (even empty containers, as even residues of isopropylbenzene can ignite explosively).

Material Safety Data Sheet: Isopropylbenzene [Cumene]**5. FIRE FIGHTING MEASURES (continued)**

Isopropylbenzene vapors are heavier than air and may travel back a considerable distance to a source of ignition and flash back. Containers exposed to heat from fires should be cooled with water to prevent vapor pressure buildup, which could result in container rupture. Combustion of isopropylbenzene produces irritants and toxic gases.

**National Fire Protection Association Hazard Rating**

- 4 = Extreme
- 3 = High
- 2 = Moderate
- 1 = Slight
- 0 = Insignificant

6. ACCIDENTAL RELEASE MEASURES

Shut off all sources of ignition. No smoking or flares allowed in the spill area. Restrict access to spill area, and move unprotected personnel upwind of the area. Keep out of low areas. Allow only trained personnel wearing appropriate protective clothing and self-contained respirator in the vicinity of the spill. Do not touch spilled material; stop leak if you can without risk. If fire potential exists, cover spill with foam. Prevent isopropylbenzene from entering water bodies, drains and any sewage collection systems. Isopropylbenzene will float on water and the runoff will present an explosion or fire hazard. For small spills take up with sand or other non-combustible absorbent material, and place into containers for later disposal. Control large spills by diking. Dispose all spill material in accordance with federal, state and local regulations. Isopropylbenzene spills over the reportable quantity (5,000 lbs) should be reported to the National Response Center (800-424-8802).

7. HANDLING AND STORAGE

Store in a well ventilated place away from sources of ignition, and oxidizing agents and in accordance with 29 CFR 1910.106. Store in metal containers. Ground and bond all storage and transfer equipment to prevent possible ignition from static sparks. Use spark resistant equipment (tools) in the isopropylbenzene area. Store in an area equipped with automatic sprinklers or fire extinguishing system. Wear appropriate protective equipment when handling isopropylbenzene. All seals, gaskets, liners and other such parts exposed to isopropylbenzene service should be made of aromatic resistant elastomers. Do not use rubber-lined tanks. Since emptied containers retain product residues, assume emptied containers to have the same hazards as full containers. Follow all federal, state and local regulations as well as all insurance codes when storing and handling isopropylbenzene.

Material Safety Data Sheet: Isopropylbenzene [Cumene]**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Respiratory Protection**

Use appropriate NIOSH approved respirators in accordance with 29 CFR 1910.132 and 1910.134, to prevent overexposure. Respirators must be selected based on the airborne levels found in the workplace and must not exceed the working limits of the respirator.

Eye Protection

Use splash proof chemical safety goggles or appropriate full-face respirator. Follow the eye and face protection guidelines of 29 CFR 1910.132 and 1910.133. Where there is any possibility that an individual's eyes may be exposed to isopropylbenzene, an eye wash fountain (in accordance with 29 CFR 1910.151) should be within the immediate work area for emergency use.

Protective Gloves

Use gloves in accordance with 29 CFR 1910.132 and 29 CFR 1910.138.

Ventilation

Provide local ventilation to maintain exposure levels below recommended exposure limits, and to prevent accumulation of isopropylbenzene in explosive levels. Use explosion proof ventilation equipment. Local exhaust ventilation should comply with OSHA regulations and the American Conference of Governmental Industrial Hygienists, Industrial Ventilation - A Manual of Recommended Practice.

Exposure Guidelines

The OSHA-PEL, NIOSH-REL and ACGIH-TLV for Isopropylbenzene [Cumene] is 50 ppm (8-hr TWA). The IDLH is 900 ppm [10% LEL].

Other

Where there is a possibility of exposure of an individual's body to isopropylbenzene, facilities for quick drenching of the body should be provided (in accordance with 29 CFR 1910.151) within the immediate work area for emergency use. Such individuals should be provided with and required to use impervious clothing in accordance with 29 CFR 1910.132.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear colorless liquid
Odor	Sharp penetrating aromatic odor
Molecular Weight	120.2
Boiling Point	152°C
Melting Point	-96°C
Solubility	Insoluble in water, soluble in alcohol, ether, benzene, and chlorinated solvents
Specific Gravity (Water = 1.0)	0.86
Vapor Density (Air = 1.0)	4.14
Vapor Pressure	3.2 mm Hg @ 20°C
pH	Not Available

Material Safety Data Sheet: Isopropylbenzene [Cumene]**10. STABILITY AND REACTIVITY****Stability**

Stable under normal conditions.

Polymerization

Hazardous polymerization does not occur.

Hazardous Decomposition Products

Combustion products of isopropylbenzene may include styrene, benzaldehyde, acetophenone, benzene, carbon monoxide, and carbon dioxide. Other unidentified organic compounds may be formed during combustion.

Incompatible Materials

Violent reactions may take place between isopropylbenzene and nitric acid, oleum and chlorosulphonic acid. Isopropylbenzene reacts with oxidizing agents to form isopropylbenzene hydroperoxide, which may cause explosive hazards.

11. TOXICOLOGICAL INFORMATION**Animal Toxicity:**

Oral:	Rat LD ₅₀	1.4 g/kg
Inhalation:	Rat LC _{LO}	8,000 ppm (4hr)
	Mouse LC _{LO}	5,042 ppm (2hr)
	Human LC _{LO}	200 ppm (somnolence, irritability)

LC_{LO} = Lowest air concentration that is lethal to a given species in a given time.

LC₅₀ = Dose that is lethal to 50% of a given species by a given route of exposure.

Animal experiments indicate that isopropylbenzene may be toxic at very high concentrations to the spleen and liver. Cataract formation has also been observed in experimental animals exposed to high concentrations of isopropylbenzene vapor.

12. ECOLOGICAL INFORMATION

Environmental Fate: The following information on isopropylbenzene [cumene] is extracted from the TOXNET database maintained by the National Library of Medicine.

Atmosphere: According to a model of gas/particle partitioning of semi-volatile organic compounds in the atmosphere, cumene, which has a vapor pressure of 4.5 mm Hg at 25 deg C, is expected to exist solely as a vapor in the ambient atmosphere. Vapor-phase cumene is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 2.5 days, calculated from its rate constant of 6.5×10^{-12} cu cm/molecule-sec at 25 deg C. Vapor-phase cumene is also degraded in the atmosphere by reaction with ozone radicals; the half-life for this reaction in air is estimated to be 3 yrs, calculated from its estimated rate constant of 1.0×10^{-20} cu cm/molecule-sec at 25 deg C.

Material Safety Data Sheet: Isopropylbenzene [Cumene]**12. ECOLOGICAL INFORMATION (continued)**

Terrestrial: Based on a classification scheme, an estimated Koc value of 820, determined from a structure estimation method, indicates that cumene is expected to have low mobility in soil. Volatilization of cumene from moist soil surfaces is expected to be an important fate process given a Henry's Law constant of 0.0115 atm-cu m/mole. The potential for volatilization of cumene from dry soil surfaces may exist based upon a vapor pressure of 4.5 mm Hg. However, adsorption to soil is expected to attenuate volatilization. After a 10 and 20 day exposure of wastewater inoculum to cumene, a theoretical BOD of 62% and 70% was observed, respectively. Based on these results, cumene is expected to undergo considerable biodegradation in soil environments.

Aquatic: Based on a classification scheme, an estimated Koc value of 820, determined from an estimation method, indicates that cumene is expected to adsorb to sediment and suspended solids in water. Volatilization from water surfaces is expected based upon a Henry's Law constant of 0.0115 atm-cu m/mole. Using this Henry's Law constant and an estimation method, volatilization half-lives for a model river and model lake are 1.2 hrs and 4.4 days, respectively. In natural waters, cumene is degraded by reaction with hydroxyl radicals; the half-life for this reaction in water is estimated to be 107 days, calculated from its rate constant of 7.5×10^9 L/mol sec at pH 7.

Biodegradation:

Aerobic: Using river water and sediment in a test system, the aerobic biodegradation of cumene was studied in a closed system. The disappearance rate constant of cumene (avg concn 2.5 mg/l) for total mineralization was 0.02/day; this equates to a half-life of 34.6 days. However, when volatilization was considered coupled with biodegradation, the half-life for cumene became 2.5 days. Cumene biodegradation experienced a lag time of approximately 5 days. Based on the results of this experiment, residence time of cumene in aquatic ecosystems will likely be brief.

Anaerobic: In an in-situ anaerobic biodegradation study of various alkyl benzene compounds, cumene was found to undergo considerable biodegradation. Biodegradation proceeded via methanogenic and fermentative bacteria.

Ecotoxicity:

LC₅₀ Daphnia magna 0.6 ppm/48 hr /Conditions of bioassay not specified

LD₅₀ Agelaius phoeniceus (red-winged blackbird) oral 98 mg/kg

Mytilus edulis (mussel larvae): no significant alteration of growth rate at concentrations of 1 to 50 ppm.

13. DISPOSAL CONSIDERATIONS

Waste Management Information: Any disposal practice must be in compliance with local, state and federal laws and regulations.

14. TRANSPORTATION INFORMATION

Proper shipping name	Isopropylbenzene
DOT Hazard class	3, (Flammable liquid)
DOT Shipping I.D. No.	UN 1918
PG	III
Labeling	Flammable
RQ	Cumene

Material Safety Data Sheet: Isopropylbenzene [Cumene]**15. REGULATORY INFORMATION****SARA Title III**

Section 302 and 304 of the Emergency Planning and Community Right to Know Act; Extremely Hazardous Substances (40 CFR 355)

<u>COMPONENT</u>	<u>CAS No.</u>	<u>TPQ (lbs)</u>	<u>RQ</u>
None	Not Applicable	Not Applicable	Not Applicable

NOTE: TPQ - Threshold Planning Quantity

RQ - Reportable Quantity

Section 311 and 312 Hazard Categorization (40 CFR 370)

<u>ACUTE</u>	<u>CHRONIC</u>	<u>FIRE</u>	<u>PRESSURE</u>	<u>REACTIVE</u>
X	X	X		

Section 313 Toxic Chemicals (40 CFR 372.65)

<u>COMPONENT</u>	<u>CAS No.</u>	<u>WT. %</u>
Isopropylbenzene	98-82-8	99.97

CERCLA**Section 102(a) Hazardous Substances (40 CFR 302.4)**

<u>COMPONENT</u>	<u>CAS No.</u>	<u>WT. %</u>	<u>RQ (lbs)</u>
Isopropylbenzene	98-82-8	99.97	5,000

RCRA

40 CFR 261.21 Hazardous Waste Number:

Isopropylbenzene waste and material contaminated with isopropylbenzene would be regulated as a hazardous waste material under the hazardous waste number U055.

TSCA

Isopropylbenzene is listed on the TSCA inventory.

Canadian Regulations

This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33 and the MSDS contains all information required by this regulation. WHMIS Classification- BD2

Canadian Environmental Protection Act (CEPA)

All substances in this product are listed on the Canadian Domestic Substances (DSL) list or are not required to be listed.

16. OTHER INFORMATION

IMPORTANT: The information and data herein are believed to be accurate and have been compiled from sources believed to be reliable. It is offered for your consideration, investigation and verification. Buyer assumes all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. **GEORGIA GULF CHEMICALS AND VINYLs, LLC MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, CONCERNING THE ACCURACY OR COMPLETENESS OF THE INFORMATION AND DATA HEREIN.** Georgia Gulf will not be liable for claims relating to any party's use of or reliance on information and data contained herein regardless of whether it is claimed that the information and data are inaccurate, incomplete or otherwise misleading. This information relates to the material designated and may not be valid for such material used in combination with any other materials nor in any process.

MSDS Status: Revision Date: 08/24/2007

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