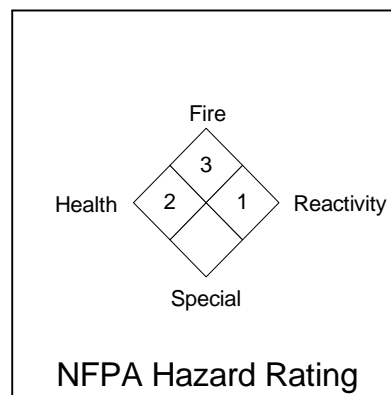


Material Safety Data Sheet: Cumene Heavies
(Formerly Diisopropylbenzene)**1. CHEMICAL PRODUCT /COMPANY INFORMATION****Product name** Cumene Heavies**Effective date** March 2007**Synonyms** Cumene heavies; Mixture of principally alkylated benzenes**Chemical formula** Mixture**CAS name & no.**
Isopropylbenzene[Cumene] 98-82-8
DIPB 25321-09-9
Propylene oligimers [C9-C18]
TIPB 717-74-8**Manufacturer's name and address**
Georgia Gulf Chemicals & Vinyls, LLC
P.O. Box 1959
Pasadena, TX 77501-1959**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 70765-0629
Phone Number (225) 685-2500

Material Safety Data Sheet: Cumene Heavies
(Formerly Diisopropylbenzene)**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS No.	Wt. %
Isopropylbenzene [Cumene]	98-82-8	0.5 - 10
DIPB [diisopropylbenzene]	25321-09-9	20 - 35
Propylene oligimers (C9-C18)	Not listed	2 - 50
TIPB [triisopropylbenzene]	717-74-8	30 - 55

3. HAZARDS IDENTIFICATION**PRECAUTIONARY INFORMATION**

DANGER: Combustible liquid can be fatal by inhalation, ingestion and by skin absorption. Highly toxic by skin absorption. Severe eye and skin burns. Known liver toxin.

POTENTIAL HEALTH EFFECTS**Primary Routes of Entry**

Inhalation, ingestion, skin absorption, and eye contact.

HAZARD CLASSIFICATION**Acute Effects**

Cumene Heavies 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

Cumene Heavies may cause skin rashes due to prolonged contact. 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 liver or kidney diseases should not be exposed to cumene heavies for any length of time, even intermittently, since this chemical can damage these organs. Blood forming organs may be impaired by exposure to cumene heavies.

Carcinogen Status

Isopropylbenzene, diisopropylbenzene and propylene oligimers are not listed as carcinogenic by OSHA, IARC, NIOSH or EPA.

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Move the exposed person to fresh air at once. Monitor the individual for respiratory distress. Emergency airway support and 100% humidified supplemental oxygen with assisted ventilation may be needed. **GET MEDICAL ATTENTION IMMEDIATELY.**

Eye Contact

If this chemical contacts the eyes, immediately wash the eyes with large amounts of water for at least 15 minutes, occasionally lifting the lower and upper lids. Get medical attention by an ophthalmologist immediately. Contact lenses should not be worn when working with this chemical.

Skin Contact

If this chemical contacts the skin, flush the contaminated skin with copious quantities of soap and 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.

Ingestion

DO NOT INDUCE VOMITING. GET MEDICAL ATTENTION IMMEDIATELY.

5. FIRE FIGHTING MEASURES**Flash Point:**

Mixture, Unknown (Cumene 31° C, DIPB 71° C, TIPB 86° C)

Flammable Limits (% by Vol)

Lower Explosive Limit (LEL)	Mixture, Unknown
Upper Explosive Limit (UEL)	Mixture, Unknown

Autoignition Temperature

Mixture, Unknown

Unusual Fire and Explosion Hazards

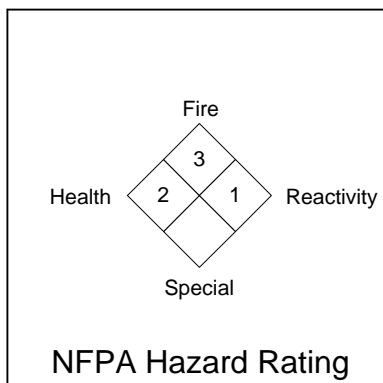
Cumene heavies is a fire and explosion hazard when heated. The heavier-than-air vapors can flow along surfaces to a distant ignition source and flash back. Vapors can flow along surfaces to distant ignition sources and then flash back.

Fire Fighting Procedures/Fire Extinguishing Media

Keep unnecessary people away; isolate hazard area and deny entry. Avoid breathing vapors, stay upwind, out of low areas and ventilate closed spaces before entering. Use NIOSH approved self-contained respirators in the positive pressure mode, and chemical protective clothing. No skin areas should be exposed. Do not enter fire area without full bunker gear (helmet with face shield, bunker coats, gloves, and rubber boots). Use halon replacement or carbon dioxide extinguishers. Water spray may be insufficient in putting out a fire, but use it to cool fire-exposed containers to prevent rupture. Use of a water stream on burning liquid can scatter flames. If a leak or spill has not ignited, use water spray to disperse vapors. Fight fire from maximum distance.

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(Formerly Diisopropylbenzene)**5. FIRE FIGHTING MEASURES (continued)****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. Restrict access to spill area. Allow only trained personnel with appropriate respirator and full body protective clothing in the spill area. Highly toxic, do not touch spilled material; stop leak if you can do so without risk. Prevent cumene heavies from entering water bodies, drains, or any sewage collection systems. 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 and pump to salvage vessels. Do not allow liquid to enter a confined space, such as a sewer, because of the possibility of an explosion. Dispose all spill material in accordance with federal, state, and local regulations. Isopropylbenzene spills over the CERCLA reportable quantity (5,000 lbs) should be reported to the National Response Center (800-424-8802) and/or appropriate state and local agencies.

7. HANDLING AND STORAGE**Storage**

Store in accordance with 29 CFR 1910.106. Store away from sources of ignition and strong oxidizers in an area equipped with automatic sprinklers or fire extinguishing system. Ground and bond shipping container and transfer equipment to prevent possible ignition from static sparks. Wear appropriate protective equipment when handling cumene heavies. Follow all federal, state, and local regulations as well as all insurance codes when storing and handling cumene heavies.

Material Safety Data Sheet: Cumene Heavies
(Formerly Diisopropylbenzene)**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Respiratory Protection**

Use appropriate NIOSH approved respirator 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 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 cumene heavies, an eye wash fountain (in accordance with 29 CFR 1910.151) should be within the immediate work area for emergency use. Contact lenses should not be worn when working with this chemical.

Protective Gloves

Use gloves in accordance with 29 CFR 1910.132.

Ventilation

Provide local explosion proof ventilation to maintain exposure levels below recommended exposure limits. Discharge from ventilating system must be so located as to prevent atmospheric contamination.

Exposure Controls

The OSHA 8 hour TWA PEL for Isopropylbenzene is 50 ppm (skin). The ACGIH 8 hour TWA for Isopropylbenzene is 50 ppm (skin).

Other

Where there is a possibility of exposure of an individual's body to cumene heavies, facilities for quick drenching of the body should be provided (in accordance with 29 CFR 1910.151). 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, Amber Liquid
Odor	Sharp, Penetrating and Aromatic
Molecular Weight	Mixture, Unknown
Boiling Point	Mixture, Unknown (Cumene 152-154°C, DIPB 203°C, TIPB 232-236°C)
Melting Point	Mixture, Unknown (Cumene -96°C, DIPB -63°C, TIPB unknown)
Solubility	Limited
Specific Gravity (Water = 1.0)	Mixture, Unknown (Cumene 0.864 g/ml, DIPB 0.856 g/ml)
Vapor Density (Air = 1.0)	Mixture, Unknown
Vapor Pressure	Mixture, Unknown
pH	Mixture, Unknown

Material Safety Data Sheet: Cumene Heavies
(Formerly Diisopropylbenzene)**10. STABILITY AND REACTIVITY****Stability**

Stable under normal conditions.

Polymerization

Hazardous polymerization does not occur.

Hazardous Decomposition Products

Toxic gases and vapors such as carbon monoxide.

Incompatible Materials

Oxidizing agents, concentrated sulfuric acid, nitric acid and chlorosulfuric.

11. TOXICOLOGICAL INFORMATION**Animal Toxicity**

Oral:	Mouse LD ₅₀	12.75 g/kg for isopropylbenzene
	Rat LD ₅₀	1.4 g/kg for isopropylbenzene
	Rat LD ₅₀	6.5 g/kg for diisopropylbenzene
Dermal:	Rabbit LD ₅₀	16 g/kg for diisopropylbenzene
	Inhalation:	
	Rat LC _{LO}	8,000 ppm (4 hr) for isopropylbenzene
	Mouse LC _{LO}	5,042 ppm (2 hr) for isopropylbenzene
	Mouse LC _{LO}	5300 mg/m ³ /2H for diisopropylbenzene
	Rat LC _{LO}	5300 mg/m ³ /4H for diisopropylbenzene

LD_{LO} = Lowest lethal dose in a given species by a given route of exposure.

LD₅₀ = Dose that is lethal to 50% of a given species by a given route of exposure.

LC₅₀ = Lowest air concentration that is lethal to 50% of a given species in a given period of time.

TC_{LO} = Lowest air concentration that is toxic to a given species.

TD_{LO} = Lowest dosage that is toxic to a given species.

12. ECOLOGICAL INFORMATION

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

Cumene:

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: Cumene Heavies
(Formerly Diisopropylbenzene)**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.

Diisopropenylbenzene:

Atmosphere: Based upon vapor pressures of 0.25 to 0.39 mm Hg at 25 deg C, the diisopropylbenzene isomers are expected to exist almost entirely in the vapor-phase in the ambient atmosphere. Diisopropylbenzene will degrade in an average ambient atmosphere by reaction with photochemically produced hydroxyl radicals (estimated half-life of 30 hours)

Terrestrial: Based upon an estimated Koc value of 4000, diisopropylbenzene is expected to be relatively immobile in soil. Insufficient data are available to predict the rates or importance of soil degradation processes.

Aquatic: Volatilization and adsorption to sediment may be important transport processes in water for diisopropylbenzene. Volatilization half-lives of 3.8 and 45 hours can be estimated for a model river (1 meter deep) and model pond (2 meters deep), respectively, when the effects of adsorption are not present; in the presence of adsorption (Koc of 4000), the volatilization half-life from the pond increases to 27 days. Based upon an estimated Koc of 4000, diisopropylbenzene may partition from the water column to sediment and suspended material. Insufficient data are available to predict the importance of biodegradation.

Biodegradation: The rate constant for the vapor-phase reaction of diisopropylbenzene with photochemically produced hydroxyl radicals has been estimated to be about 1.3×10^{-11} cu cm/molecule-sec at 25 deg C which corresponds to an atmospheric half-life of about 30 hrs at an atmospheric concn of 5×10^{-5} hydroxyl radicals per cu cm. Benzenes are generally resistant to aqueous environmental hydrolysis, therefore, diisopropylbenzene is not expected to hydrolyze in the environment

Material Safety Data Sheet: Cumene Heavies
(Formerly Diisopropylbenzene)**13. DISPOSAL CONSIDERATIONS**

Waste Management Information: Do not dump into any sewers, on the ground, or into any body of water. Any disposal practice must be in compliance with local, state and federal laws and regulations (contact local or state environmental agency for specific rules). Waste characterization and compliance with applicable laws are the responsibility of the waste generator.

14. TRANSPORTATION INFORMATION

Proper Shipping Name	Flammable Liquid N.O.S.
DOT Hazard class	3, (Flammable Liquid)
DOT Shipping I.D. No.	UN 1993
PG	III
Labeling	Flammable Liquid
DOT Placard	Flammable Liquid
MISC.	Marine Pollutant (Diisopropylbenzene)

15. REGULATORY INFORMATION**SARA Title III**

Section 302 and 304 of the Act; Extremely Hazardous Substances (40 CFR 355)

COMPONENT	CAS No.	TPQ (lbs)	RQ (lbs)
None			

Section 311 Hazard Categorization (40 CFR 370)

ACUTE	CHRONIC	FIRE	PRESSURE	REACTIVE
X	X	X		

Section 313 Toxic Chemicals (40 CFR 372.65)

COMPONENT	CAS No.	WT. %
Isopropylbenzene	98-82-8	0.5-15%

CERCLA

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

COMPONENT	CAS No.	WT. %	RQ (lbs)
Isopropylbenzene	98-82-8	0.5-15%	5,000

RCRA

40 CFR 261.33 hazardous waste number: Not listed

TSCA

Isopropylbenzene is listed on the TSCA inventory.

Material Safety Data Sheet: Cumene Heavies
(Formerly Diisopropylbenzene)**16. OTHER INFORMATION**

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MSDS Status: Revision date 3/21/2006 Supersedes 2/1/2006