ETHYLBENZENE

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
ETHYLBENZENE

OTHER NAMES

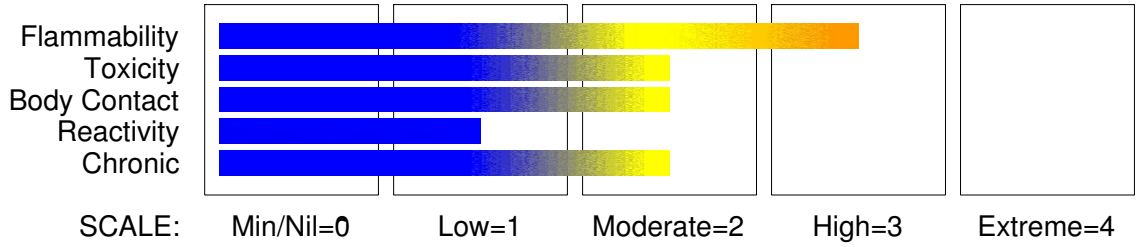
C8-H10, "ethyl benzene", ethylbenzol, phenylethane

PROPER SHIPPING NAME
ETHYLBENZENE

PRODUCT USE
The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing.
Before starting consider control of exposure by mechanical ventilation.
Used in the manufacture of cellulose acetate, styrene and synthetic rubber; solvent or diluent; component of automotive and aviation gasoline.
Component of many petroleum hydrocarbon solvents, thinners.

SUPPLIER
Company: S D FINE- CHEM LIMITED
Address:
315- 317, T.V. INDUSTRIAL ESTATE,
248, WORLI,
MUMBAI- 400030.INDIA.
technical@sdfine.com
Telephone: 91- 22- 24959898
Telephone: 91- 22- 24959899
Fax: 91- 22- 24937232

HAZARD RATINGS



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Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Acute Aquatic Hazard Category 3
Acute Toxicity (Inhalation) Category 4
Acute Toxicity (Oral) Category 5
Eye Irritation Category 2A
Flammable Liquid Category 2
Respiratory Irritation Category 3
Skin Corrosion/Irritation Category 3

EMERGENCY OVERVIEW

HAZARD

DANGER
Determined by using GHS criteria:
H335 H225 H332 H303 H316 H319 H402
May cause respiratory irritation
Highly flammable liquid and vapour
Harmful if inhaled
May be harmful if swallowed
Causes mild skin irritation
Causes serious eye irritation
Harmful to aquatic life

PRECAUTIONARY STATEMENTS

Prevention

Ground/bond container and receiving equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge
Avoid breathing dust/fume/gas/mist/vapours/spray.
Use only outdoors or in a well ventilated area.
Wash hands thoroughly after handling.
Use explosion-proof electrical/ventilating/lighting/equipment
Keep away from heat/sparks/open flame - No smoking.
Keep container tightly closed.
Wear protective gloves and eye/face protection.

Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

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IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
If eye irritation persists, get medical advice/attention.
Wear eye/face protection.
If skin irritation occurs, seek medical advice/attention.
Specific treatment: refer to Label or MSDS.
In case of fire, use foam for extinction.
If on skin or hair: remove/take off immediately all contaminated clothing. Rinse with water/shower.
Call a POISON CENTER or doctor/physician if you feel unwell.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

Disposal

Dispose of contents and container in accordance with relevant legislation.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
ethylbenzene	100-41-4	>95

Section 4 - FIRST AID MEASURES

SWALLOWED

Rinse mouth out with plenty of water.
· For advice, contact a Poisons Information Centre or a doctor at once.
· Urgent hospital treatment is likely to be needed.
· If swallowed do NOT induce vomiting.
· If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
· Observe the patient carefully.
· Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
· Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
· Transport to hospital or doctor without delay.

EYE

If this product comes in contact with the eyes:
· Immediately hold eyelids apart and flush the eye continuously with running water.
· Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
· Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
· Transport to hospital or doctor without delay.
· Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin contact occurs:
· Immediately remove all contaminated clothing, including footwear.
· Flush skin and hair with running water (and soap if available).
· Seek medical attention in event of irritation.

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INHALED

· If fumes or combustion products are inhaled remove from contaminated area.
· Lay patient down. Keep warm and rested.
· Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
· Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
· Transport to hospital, or doctor.

NOTES TO PHYSICIAN

For acute or short term repeated exposures to petroleum distillates or related hydrocarbons:
· Primary threat to life, from pure petroleum distillate ingestion and/or inhalation, is respiratory failure.
· Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO2 50 mm Hg) should be intubated.
· Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
· A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
· Epinephrine (adrenalin) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.
· Lavage is indicated in patients who require decontamination; ensure use of cuffed endotracheal tube in adult patients. [Ellenhorn and Barceloux: Medical Toxicology].

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

· Foam.
· Dry chemical powder.
· BCF (where regulations permit).
· Carbon dioxide.
· Water spray or fog - Large fires only.

FIRE FIGHTING

· Alert Fire Brigade and tell them location and nature of hazard.
· May be violently or explosively reactive.
· Wear breathing apparatus plus protective gloves.
· Prevent, by any means available, spillage from entering drains or water course.
· If safe, switch off electrical equipment until vapour fire hazard removed.
· Use water delivered as a fine spray to control fire and cool adjacent area.
· Avoid spraying water onto liquid pools.
· DO NOT approach containers suspected to be hot.
· Cool fire exposed containers with water spray from a protected location.
· If safe to do so, remove containers from path of fire.

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Section 5 - FIRE FIGHTING MEASURES

FIRE/EXPLOSION HAZARD
· Liquid and vapour are flammable.
· Moderate fire hazard when exposed to heat or flame.
· Vapour forms an explosive mixture with air.
· Moderate explosion hazard when exposed to heat or flame.
· Vapour may travel a considerable distance to source of ignition.
· Heating may cause expansion or decomposition leading to violent rupture of containers.
· On combustion, may emit toxic fumes of carbon monoxide (CO).
May emit clouds of acrid smoke.

FIRE INCOMPATIBILITY
Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

Personal Protective Equipment
Gloves, boots (chemical resistant).
Breathing apparatus.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS
· Remove all ignition sources.
· Clean up all spills immediately.
· Avoid breathing vapours and contact with skin and eyes.
· Control personal contact by using protective equipment.
· Contain and absorb small quantities with vermiculite or other absorbent material.
· Wipe up.
· Collect residues in a flammable waste container.

MAJOR SPILLS
· Clear area of personnel and move upwind.
· Alert Fire Brigade and tell them location and nature of hazard.
· May be violently or explosively reactive.
· Wear breathing apparatus plus protective gloves.
· Prevent, by any means available, spillage from entering drains or water course.
· No smoking, naked lights or ignition sources.
· Increase ventilation.
· Stop leak if safe to do so.
· Water spray or fog may be used to disperse / absorb vapour.
· Contain spill with sand, earth or vermiculite.
· Use only spark-free shovels and explosion proof equipment.
· Collect recoverable product into labelled containers for recycling.
· Absorb remaining product with sand, earth or vermiculite.
· Collect solid residues and seal in labelled drums for disposal.
· Wash area and prevent runoff into drains.
· If contamination of drains or waterways occurs, advise emergency services.

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)
The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

continued...

life-threatening health effects is:
ethylbenzene 800 ppm

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:
ethylbenzene 125 ppm

other than mild, transient adverse effects without perceiving a clearly defined odour is:
ethylbenzene 125 ppm

The threshold concentration below which most people will experience no appreciable risk of health effects:
ethylbenzene 100 ppm

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS

+	X	X	X	X	+

+: May be stored together
O: May be stored together with specific preventions
X: Must not be stored together

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

Avoid generating and breathing mist.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights, heat or ignition sources.
- When handling, DO NOT eat, drink or smoke.
- Vapour may ignite on pumping or pouring due to static electricity.
- DO NOT use plastic buckets.
- Earth and secure metal containers when dispensing or pouring product.
- Use spark-free tools when handling.
- Avoid contact with incompatible materials.

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· Keep containers securely sealed.
· Avoid physical damage to containers.
· Always wash hands with soap and water after handling.
· Work clothes should be laundered separately.
· Use good occupational work practice.
· Observe manufacturer's storing and handling recommendations.
· Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

SUITABLE CONTAINER

· Metal can or drum
· Packaging as recommended by manufacturer.
· Check all containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY

Avoid storage with oxidisers.

STORAGE REQUIREMENTS

· Store in original containers in approved flammable liquid storage area.
· DO NOT store in pits, depressions, basements or areas where vapours may be trapped.
· No smoking, naked lights, heat or ignition sources.
· Keep containers securely sealed.
· Store away from incompatible materials in a cool, dry, well-ventilated area.
· Protect containers against physical damage and check regularly for leaks.
· Observe manufacturer's storing and handling recommendations.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records
• ethylbenzene: CAS:100- 41- 4

EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m3)	Revised IDLH Value (ppm)
ethylbenzene		800 [LEL]

NOTES
Values marked LEL indicate that the IDLH was based on 10% of the lower explosive limit for safety considerations even though the relevant toxicological data indicated that irreversible health effects or impairment of escape existed only at higher concentrations.

ODOUR SAFETY FACTOR (OSF)

OSF=43 (ETHYL BENZENE)
Exposed individuals are reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.
Odour Safety Factor (OSF) is determined to fall into either Class A or B.
The Odour Safety Factor (OSF) is defined as:
OSF= Exposure Standard (TWA) ppm/ Odour Threshold Value (OTV) ppm
Classification into classes follows:

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Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV- TWA for example) is being reached, even when distracted by working activities
B	26- 550	As " A" for 50- 90% of persons being distracted
C	1- 26	As " A" for less than 50% of persons being distracted
D	0.18- 1	10- 50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As " D" for less than 10% of persons aware of being tested

.

MATERIAL DATA

Odour Threshold Value: 0.46-0.60 ppm
NOTE: Detector tubes for ethylbenzene, measuring in excess of 30 ppm, are commercially available.
Ethyl benzene produces irritation of the skin and mucous membranes and appears to produce acute and chronic effects on the central nervous system. Animal experiments also suggest the effects of chronic exposure include damage to the liver, kidneys and testes. In spite of structural similarities to benzene, the material does not appear to cause damage to the haemopoietic system. The TLV-TWA is thought to be protective against skin and eye irritation. Exposure at this concentration probably will not result in systemic effects.
Subjects exposed at 200 ppm experienced transient irritation of the eyes; at 1000 ppm there was eye irritation with profuse lachrymation; at 200 ppm eye irritation and lachrymation were immediate and severe accompanied by moderate nasal irritation, constriction in the chest and vertigo;
at 5000 ppm exposure produced intolerable irritation of the eyes and throat.

PERSONAL PROTECTION




EYE

· Safety glasses with side shields; or as required,
· Chemical goggles.
· Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or

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restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET
· Barrier cream with polyethylene gloves or Nitrile gloves.
Protective footwear.

OTHER
· Overalls.
· Eyewash unit.

GLOVE SELECTION INDEX
Glove selection is based on a modified presentation of the:
" Forsberg Clothing Performance Index" .
The effect(s) of the following substance(s) are taken into account in the computer- generated selection: ethylbenzene

Protective Material	
VITON	A
TEFLON	A

A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

RESPIRATOR
Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half- face Respirator	Full- Face Respirator
1000	10	A- AUS	-
1000	50	-	A- AUS
5000	50	Airline *	-
5000	100	-	A- 2
10000	100	-	A- 3
	100+		Airline**

* - Continuous Flow ** - Continuous-flow or positive pressure demand.

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The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.
For further information consult
your
Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

CARE: Use of a quantity of this material in confined space or poorly ventilated area, where rapid build up of concentrated atmosphere may occur, could require increased ventilation and/or protective gear.
Use in a well-ventilated area.
General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air)	0.25- 0.5 m/s (50- 100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5- 1 m/s (100- 200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1- 2.5 m/s (200- 500 f/min)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5- 10 m/s (500- 2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood - local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Clear highly flammable liquid; floats on water. Aromatic solvent odour.
Soluble in alcohol, benzene, carbon tetrachloride and ether.

PHYSICAL PROPERTIES

Liquid.
Does not mix with water.
Floats on water.

Molecular Weight: 106.17	Boiling Range (°C): 136.25
Melting Range (°C): - 95	Specific Gravity (water=1): 0.8670 @ 20 deg
Solubility in water (g/L): Insoluble	pH (as supplied): Not applicable
pH (1% solution): Not applicable.	Vapour Pressure (kPa): 1.333 @ 25.9 de
Volatile Component (%vol): 100	Evaporation Rate: Fast
Relative Vapour Density (air=1): 3.66	Flash Point (°C): 15
Lower Explosive Limit (%): 1.2	Upper Explosive Limit (%): 6.8
Autoignition Temp (°C): 432	Decomposition Temp (°C): Not available
State: Liquid	Viscosity: Not available

log Kow (Prager 1995):	3.15
log Kow (Sangster 1997):	3.15

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Elevated temperatures.
- Presence of open flame.
- Product is considered stable.
- Hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Accidental ingestion of the material may be damaging to the health of the individual. Considered an unlikely route of entry in commercial/industrial environments The liquid may produce considerable gastrointestinal discomfort and may be harmful or toxic if swallowed. Ingestion may result in nausea, pain and vomiting. Vomit entering the lungs by aspiration may cause potentially lethal chemical pneumonitis.

EYE

Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular

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lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.
Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.
The vapour is discomforting.
The material may produce severe irritation to the eye causing pronounced inflammation.
Repeated or prolonged exposure to irritants may produce conjunctivitis.

SKIN
Limited evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.
Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.
The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

INHALED
Limited evidence exists, or practical experience predicts, that the material produces irritation of the respiratory system in a significant number of individuals following inhalation.
Inhalation hazard is increased at higher temperatures.
Acute effects from inhalation of high concentrations of vapour are pulmonary irritation, including coughing, with nausea; central nervous system depression - characterised by headache and dizziness, increased reaction time, fatigue and loss of co-ordination.
If exposure to highly concentrated solvent atmosphere is prolonged this may lead to narcosis, unconsciousness, even coma and possible death.
Inhalation of vapour may aggravate a pre-existing respiratory condition such as asthma, bronchitis, emphysema.

CHRONIC HEALTH EFFECTS
Principal routes of exposure are usually by inhalation of vapour and skin contact.
Chronic solvent inhalation exposures may result in nervous system impairment and liver and blood changes. [PATTYS].
Prolonged or continuous skin contact with the liquid may cause defatting with drying, cracking, irritation and dermatitis following.
Industrial workers exposed to a maximum level of ethyl benzene of 0.06 mg/l (14 ppm) reported headaches and irritability and tired quickly. Functional nervous system disturbances were found in some workers employed for over 7 years whilst other workers had enlarged livers.

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Section 11 - TOXICOLOGICAL INFORMATION

TOXICITY AND IRRITATION

TOXICITY
Oral (rat) LD50: 3500 mg/kg
Inhalation (human) TCLo: 100 ppm/8h
Inhalation (rat) LCLo: 4000 ppm/4h
Intraperitoneal (mouse) LD50: 2642 mg/kg
Dermal (rabbit) LD50: 17800 mg/kg

IRRITATION
Skin (rabbit): 15 mg/24h Mild
Eye (rabbit): 500 mg - SEVERE

Liver changes, utheral tract, effects on fertility, foetotoxicity,
specific developmental abnormalities (musculoskeletal system) recorded.
NOTE: Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA.
WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.

Section 12 - ECOLOGICAL INFORMATION

Hazardous Air Pollutant:	Yes
Fish LC50 (96hr.) (mg/l):	32.0- 97.1
Algae IC50 (72hr.) (mg/l):	33- 160
Water solubility (g/l):	2.16
log Kow (Prager 1995):	3.15
log Kow (Sangster 1997):	3.15
log Pow (Verschueren 1983):	3.15
ThOD:	3.17
Half- life Soil - High (hours):	240
Half- life Soil - Low (hours):	72
Half- life Air - High (hours):	85.6
Half- life Air - Low (hours):	8.56
Half- life Surface water - High (hours):	240
Half- life Surface water - Low (hours):	72
Half- life Ground water - High (hours):	5472
Half- life Ground water - Low (hours):	144
Aqueous biodegradation - Aerobic - High (hours):	240
Aqueous biodegradation - Aerobic - Low (hours):	72
Aqueous biodegradation - Anaerobic - High (hours):	5472
Aqueous biodegradation - Anaerobic - Low (hours):	4224
Aqueous biodegradation - Removal secondary treatment - High (hours):	95%
Aqueous biodegradation - Removal secondary treatment - Low (hours):	72%
Photolysis maximum light absorption - High (nano- m):	269.5
Photolysis maximum light absorption - Low (nano- m):	208
Photooxidation half- life air - High (hours):	85.6
Photooxidation half- life air - Low (hours):	8.56

The material is classified as an ecotoxin* because the Fish LC50 (96 hours) is less than or equal to 0.1 mg/l

* Classification of Substances as Ecotoxic (Dangerous to the Environment)
Appendix 8, Table 1
Compiler's Guide for the Preparation of International Chemical Safety Cards: 1993
Commission of the European Communities.
log Koc: 1.98-3.04
Koc: 164
log Kom: 1.73-3.23
Half-life (hr) air: 0.24-85.6

continued...

Half-life (hr) H2O surface water: 5-240
Half-life (hr) H2O ground: 144-5472
Half-life (hr) soil: 72-240
Henry's Pa m³ /mol: 748-887
Henry's atm m³ /mol: 8.44E-03
ThOD: 3.17
BCF: 3.15-146
Log BCF: 1.19-2.67

Section 13 - DISPOSAL CONSIDERATIONS

- Consult manufacturer for recycling options and recycle where possible .
- Consult State Land Waste Management Authority for disposal.
- Incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

Labels Required: FLAMMABLE LIQUID
HAZCHEM: 3[Y]E

UNDG:

Dangerous Goods Class:	3	Subrisk:	None
UN Number:	1175	Packing Group:	II

Shipping Name:ETHYLBENZENE

Air Transport IATA:

ICAO/IATA Class:	3	ICAO/IATA Subrisk:	None
UN/ID Number:	1175	Packing Group:	II
ERG Code:	3L		

Shipping name:ETHYLBENZENE

Maritime Transport IMDG:

IMDG Class:	3	IMDG Subrisk:	None
UN Number:	1175	Packing Group:	II
EMS Number:	F- E, S- D		

Shipping name:ETHYLBENZENE

continued...

Section 15 - REGULATORY INFORMATION

REGULATIONS

ethylbenzene (CAS: 100-41-4) is found on the following regulatory lists;
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk
International Agency for Research on Cancer (IARC) Carcinogens
OECD Representative List of High Production Volume (HPV) Chemicals
WHO Guidelines for Drinking-water Quality - Guideline values for chemicals that are of health significance in drinking-water

Section 16 - OTHER INFORMATION

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

Issue Date: 24-Jun-2018