



M A T E R I A L   S A F E T Y   D A T A   S H E E T

PRODUCT NAME: TOLUENE  
PRODUCT CODE: 950

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Date Prepared: 08/18/04  
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MSDS No: 301.0000565-010.012

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity

Product Name: TOLUENE  
General or Generic ID: AROMATIC HYDROCARBON

Company

PBE Jobbers Warehouse  
2899 Syene Road  
Madison, WI 53713  
1-800-225-5723

Emergency Telephone Number: 1-800-424-9300 CHEMTREC

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient(s)	CAS Number	% (by weight)
TOLUENE	108-88-3	100.0-100.0

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye

Can cause eye irritation\_ Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin

May cause mild skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, drying and cracking of skin, and skin burns. Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

Swallowing

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

Inhalation

Breathing of vapor or mist is possible. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms usually occur at air concentrations higher than the recommended exposure limits (See Section 8).

Symptoms of Exposure

Signs and symptoms of exposure to this material through breathing, swallowing,



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and/or passage of the material through the skin may include: metallic taste, stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), central nervous system excitation (giddiness, liveliness, light-headed feeling) followed by central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects, temporary changes in mood and behavior, muscle weakness, loss of coordination, confusion, irregular heartbeat, coma, and death.

### Target Organ Effects

Prolonged intentional toluene abuse may lead to damage to many organ systems having effects on: central and peripheral nervous systems, vision, hearing, liver, kidneys, heart and blood. Such abuse has been associated with brain damage characterized by disturbances in gait, personality changes and loss of memory. Comparable central nervous system effects have not been shown to result from occupational exposure to toluene. Prolonged intentional toluene abuse may lead to hearing loss progressing to deafness. In addition, while noise is known to cause hearing loss in humans, it has been suggested that workers exposed to organic solvents, including toluene, along with noise may suffer greater hearing loss than would be expected from exposure to noise alone. Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals: mild, reversible liver effects, mild, reversible kidney effects, respiratory tract damage (nose, throat, and airways), effects on hearing, central nervous system damage, Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans: kidney damage.

### Developmental Information

Toluene may be harmful to the human fetus based on positive test results with laboratory animals. Case studies show that prolonged intentional abuse of toluene during pregnancy can cause birth defects in humans.

### Cancer Information

This material is not expected to cause cancer in humans since it did not cause cancer in laboratory animals. This material is not listed as a carcinogen by the International Agency for Research on Cancer, the National Toxicology Program, or the occupational Safety and Health Administration.

Other Health Effects No  
data

### Primary Route(s) of Entry

Inhalation, Skin absorption, Skin contact, Eye contact, Ingestion.

## 4. FIRST AID MEASURES

### Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

### Skin

Remove contaminated clothing. Wash exposed area with soap and water. If symptoms



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persist, seek medical attention. Launder clothing before reuse.

### Swallowing

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

### Inhalation

If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

### Note to Physicians

Inhalation of high concentrations of this material, as could occur in enclosed spaces or during deliberate abuse, may be associated with cardiac arrhythmias. Sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to this material. This material is an aspiration hazard. Potential danger from aspiration must be weighed against possible oral toxicity (See Section 3 - Swallowing) when deciding whether to induce vomiting. Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: respiratory tract skin, lung (for example, asthma-like conditions), kidney, central nervous system, and auditory system. Individuals with preexisting heart disorders may be more susceptible to arrhythmias (irregular heartbeats) if exposed to high concentrations of this material.

## 5. FIRE FIGHTING MEASURES

### Flash Point

45.0 F (7.2 C) TCC

### Explosive Limit

(for product) Lower 1.2 Upper 7.0 %

### Autoignition Temperature

896.0 F (480.0 C)

### Hazardous Products of Combustion

May form: carbon dioxide and carbon monoxide, various hydrocarbons.

### Fire and Explosion Hazards

Material is volatile and readily gives off vapors which may travel along the ground or be moved by ventilation and ignited by pilot lights, flames, sparks, heaters, smoking, electric motors, static discharge or other ignition sources at locations near the material handling point. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.

### Extinguishing Media

regular foam (such as AFFF), carbon dioxide, dry chemical.

### Fire Fighting Instructions

Use water spray to cool fire exposed containers and structures until fire is out if



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it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes\_ Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA).

### NFPA Rating

Health - 2, Flammability - 3, Reactivity - 0

## 6. ACCIDENTAL RELEASE MEASURES

### Small Spill

Eliminate all sources of ignition such as flares, flames (including pilot lights), and electrical sparks. Absorb liquid on vermiculite, floor absorbent or other absorbent material.

### Large Spill

Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source. Prevent from entering drains, sewers, streams or other bodies of water\_ Prevent from spreading. If runoff occurs, notify authorities as required. Pump or vacuum transfer spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminated absorbent, soil and other materials to containers for disposal\_ Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required, that a spill has occurred.

## 7. HANDLING AND STORAGE

### Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Special precautions may be necessary to dissipate static electricity for non-conductive containers. Use proper bonding and grounding during product transfer as described in National Fire Protection Association document NFPA 77. Hydrocarbon solvents are basically non-conductors of electricity and can become electrostatically charged during mixing, filtering or pumping at high flow rates. If this charge reaches a sufficiently high level, sparks can form that may ignite the vapors of flammable liquids. Warning. Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources\_ Published "auto-ignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual. process conditions. Any use of this product in elevated temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions.

### Storage

Store in a cool, dry, ventilated area away from sources of heat, moisture, and incompatible substances. Store out of direct sunlight.



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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection

Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. Consult your safety representative.

Skin Protection

Wear resistant gloves such as: polyvinyl alcohol, Your local safety equipment and protective clothing supplier can provide alternative glove recommendations for your specific applications. To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

Respiratory Protections

If workplace exposure limit(s) of product or any component is exceeded (see exposure guidelines), a NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions (see your industrial hygienist). Engineering or administrative controls should be implemented to reduce exposure.

Engineering Controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s). Explosion-proof ventilation system is acceptable.

Exposure Guidelines

Component

TOLUENE (108-88-3)

- OSHA PEL 200.000 ppm - TWA
- OSHA PEL 300.000 ppm - Ceiling
- OSHA VPEL 100.000 ppm - TWA
- OSHA VPEL 150.000 ppm - STEL
- ACGIH TLV 50.000 ppm - TWA(Skin)
- ACGIH TLV 150.000 ppm - STEL(Skin)

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point

(for product) 232.0 F (111.1 C) @ 760 mmHg

Vapor Pressure

(for product) 22.000 mmHg @ 68.00 F

Specific Vapor Density

3.200 @ AIR=1

Specific Gravity

.870 @ 68.00 F

Liquid Density

7.250 lbs/gal @ 60.00 F  
.870 kg/l @ 16.00 C



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Percent Volatiles

100.0 %

Volatile Organic Compounds (VOC)

100.000 %

870.000 g/l

7.250 lbs/gal

Evaporation Rate

2.00 (N-BUTYL ACETATE)

Appearance

CLEAR

State

LIQUID

Physical Form

NEAT

Color

COLORLESS

Odor

HYDROCARBON

pH

No Data

Viscosity

< 1.0 cps

Freezing Point

-139.0 F (-95.0 C)

Molecular Weight

92.0

Solubility in Water

LESS THAN 0.1%

Octanol/Water Partition Coefficient

2.690

Heat Value

18314.000 BTU

10. STABILITY AND REACTIVITY

Hazardous Polymerization

Product will not undergo hazardous polymerization.



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Hazardous Decomposition
May form: carbon dioxide and carbon monoxide, various hydrocarbons.

Chemical Stability
Stable.

Incompatibility
Avoid contact with: strong acids, strong oxidizing agents.

11. TOXICOLOGICAL INFORMATION
No data

12. ECOLOGICAL INFORMATION
data No

13. DISPOSAL CONSIDERATION

Waste Management Information
Dispose of in accordance with all applicable local, state and federal regulations.

14. TRANSPORT INFORMATION

DOT Information - 49 CFR 172\_101
DOT Description:
TOLUENE,3,UN1294,II

Container/Mode:
55 GAL DRUM/TRUCK PACKAGE

NOS Component:
None

RQ (Reportable Quantity) - 49 CFR 172.101

Table with 2 columns: Product Quantity (lbs), Component. Row 1: 1000, TOLUENE

Other Transportation Information
The Transport Information may vary with the container and mode of shipment.

15. REGULATORY INFORMATION

US Federal Regulations
TSCA (Toxic Substances Control Act) Status
TSCA (UNITED STATES) The intentional ingredients of this product are listed.

Table with 2 columns: Component, RQ (lbs). Row 1: TOLUENE, 1000



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CERCLA RQ -40 CFR 302.4(b)

Materials without a "listed" RQ may be reportable as an "unlisted hazardous substance". See 40 CFR 302.5 (b).

SARA 302 Components - 40 CFR 355 Appendix A

None

Section 311/312 Hazard Class - 40 CFR 370.2

Immediate(X) Delayed(X) Fire(X) Reactive( ) Sudden Release of Pressure( )

SARA 313 Components - 40 CFR 372.65

Section 313 Component(s)	CAS Number	%
TOLUENE	108-88-3	100.00

OSHA Process Safety Management 29 CFR 1910

None listed

EPA Accidental Release Prevention 40 CFR 68

None

listed

International Regulations

Inventory Status

- AICS (AUSTRALIA) The intentional ingredients of this product are listed.
- DSL (CANADA) The intentional ingredients of this product are listed.
- ECL (SOUTH KOREA) The intentional ingredients of this product are listed.
- EINECS (EUROPE) The intentional ingredients of this product are listed.
- ENCS (JAPAN) The intentional ingredients of this product are listed.
- IECSC (CHINA) The intentional ingredients of this product are listed.
- PICCS (PHILIPPINES) The intentional ingredients of this product are listed.
- SWISS (SWITZERLAND) The intentional ingredients of this product are listed.

State and Local Regulations

California Proposition 65

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains the following substance(s) known to the state of California to cause cancer.

BENZENE

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains the following substance(s) known to the state of California to cause reproductive harm.

TOLUENE

BENZENE

New Jersey RTK Label Information

TOLUENE 108-88-3

Pennsylvania RTK Label Information

BENZENE, METHYL- 108-88-3



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16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.