

Ref P.O. 24455

TOLUENE

**EXXON COMPANY, U.S.A.**  
A DIVISION OF EXXON CORPORATION

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### MATERIAL SAFETY DATA SHEET

EXXON COMPANY, U.S.A. P.O. BOX 2180 HOUSTON, TX 77252-2180

#### A. IDENTIFICATION AND EMERGENCY INFORMATION

|   |                                       |
|---|---------------------------------------|
| <b>PRODUCT NAME</b><br>TOLUENE  | <b>PRODUCT CODE</b><br>132010 - 00650 |
| <b>CHEMICAL NAME</b><br>Petroleum Solvent   | <b>CAS NUMBER</b><br>108-88-3         |
| <b>PRODUCT APPEARANCE AND ODOR</b><br>Clear water-white liquid<br>Aromatic hydrocarbon odor |                                       |
| <b>EMERGENCY TELEPHONE NUMBER</b><br>(713) 656-3424   |                                       |

#### B. COMPONENTS AND HAZARD INFORMATION

| COMPONENTS   | CAS NO. OF COMPONENTS            | APPROXIMATE CONCENTRATION |
|--|----------------------------------|---------------------------|
| This product can be defined as:<br>Toluene   | 108-88-3                         | 100%                      |
| See Section E for Health and Hazard Information                                      |                                  |                           |
| <b>HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)</b>                              |                                  |                           |
| Health   | Flammability                     | Reactivity                |
| 1  | 3                                | 0                         |
| BASIS<br>Recommended by Exxon  |                                  |                           |
| <b>EXPOSURE LIMIT FOR TOTAL PRODUCT</b>  |                                  |                           |
| BASIS  |                                  |                           |
| Recommended by the American Conference of Governmental Industrial Hygienists (ACGIH) |                                  |                           |
| 100 ppm (375 mg/m3) for an 8-hour workday.<br>150 ppm (560 mg/m3) STEL               | OSHA Regulation 29 CFR 1910.1000 |                           |
| 200 ppm (300 ppm Ceiling;<br>500 ppm Peak)   |                                  |                           |

#### C. PRIMARY ROUTES OF ENTRY AND EMERGENCY AND FIRST AID PROCEDURES

##### EYE CONTACT

If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

##### SKIN

In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water.

##### INHALATION

If overcome by vapor, remove from exposure and call a physician immediately. If breathing is irregular or has stopped, start resuscitation, administer oxygen, if available.

##### INGESTION

If ingested, DO NOT induce vomiting; call a physician immediately.

## D. FIRE AND EXPLOSION HAZARD INFORMATION

### FLASH POINT (MINIMUM)

FLAMMABLE - Per DOT 49 CFR 173.115  
7°C (45°F)  
ASTM D 56, Tag Closed Cup

### AUTOIGNITION TEMPERATURE

Greater than 538°C (1000°F)  
ASTM D 2155

### NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) - HAZARD IDENTIFICATION

Health Flammability Reactivity  
2 3 0

#### BASIS

Recommended by the National Fire Protection Association

### HANDLING PRECAUTIONS

Keep product away from heat, sparks, pilot lights, static electricity, and open flame.

### FLAMMABLE OR EXPLOSIVE LIMITS (APPROXIMATE PERCENT BY VOLUME IN AIR)

Estimated values: Lower Flammable Limit 1% Upper Flammable Limit 7.1%

### EXTINGUISHING MEDIA AND FIRE FIGHTING PROCEDURES

Foam, water spray (fog), dry chemical, carbon dioxide and vaporizing liquid type extinguishing agents may all be suitable for extinguishing fires involving this type of product, depending on size or potential size of fire and circumstances related to the situation. Plan fire protection and response strategy through consultation with local fire protection authorities or appropriate specialists.

The following procedures for this type of product are based on the recommendations in the National Fire Protection Association's "Fire Protection Guide on Hazardous Materials", Eighth Edition (1984):

Use dry chemical, foam or carbon dioxide. Water may be ineffective, but water should be used to keep fire-exposed containers cool. If a leak or spill has ignited, use water spray to disperse the vapors and to protect men attempting to stop a leak. Water spray may be used to flush spills away from exposures. Minimize breathing gases, vapor, fumes or decomposition products. Use supplied-air breathing equipment for enclosed or confined spaces or as otherwise needed.

NOTE: The inclusion of the phrase "water may be ineffective" is to indicate that although water can be used to cool and protect exposed material, water may not extinguish the fire unless used under favorable conditions by experienced fire fighters trained in fighting all types of flammable liquid fires.

### DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS

Fumes, smoke, carbon monoxide, aldehydes and other decomposition products, in the case of incomplete combustion.

### "EMPTY" CONTAINER WARNING

"Empty" containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. For work on tanks refer to Occupational Safety and Health Administration regulations, ANSI Z49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

## E. HEALTH AND HAZARD INFORMATION

### VARIABILITY AMONG INDIVIDUALS

Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

**EFFECTS OF OVEREXPOSURE (Signs and symptoms of exposure)**

High vapor concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic, and may have other central nervous system effects including death.

**NATURE OF HAZARD AND TOXICITY INFORMATION**

Prolonged or repeated skin contact with this product tends to remove skin oils possibly leading to irritation and dermatitis; however, based on human experience and available toxicological data, this product is judged to be neither a "corrosive" nor an "irritant" by OSHA criteria.

Product contacting the eyes may cause eye irritation.

Product has a low order of acute oral and dermal toxicity, but minute amounts aspirated into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

This product is judged to have an acute oral LD50 (rat) greater than 5 g/kg of body weight, and an acute dermal LD50 (rabbit) greater than 3.16 g/kg of body weight.

**PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE**

Petroleum Solvents/Petroleum Hydrocarbons - Skin contact may aggravate an existing dermatitis.

**F. PHYSICAL DATA**

The following data are approximate or typical values and should not be used for precise design purposes.

**BOILING RANGE**

110.2-111.0°C (230.4-231.8°F)

**VAPOR PRESSURE**

Approximately 54 mm Hg @ 25°C  
ASTM D 2879

**SPECIFIC GRAVITY (15.6 C/15.6 C)**

0.87

**VAPOR DENSITY (AIR = 1)**

Approximately 3.2

**MOLECULAR WEIGHT**

92

**PERCENT VOLATILE BY VOLUME**

100 @ 1 atm. and 25°C (77°F)

**pH**

Essentially neutral

**EVAPORATION RATE @ 1 ATM. AND 25 C (77 F)**

(n-BUTYL ACETATE = 1)  
1.8

**POUR, CONGEALING OR MELTING POINT**

Less than -18°C (0°F)  
Pour Point by ASTM D 97

**SOLUBILITY IN WATER @ 1 ATM. AND 25 C (77 F)**

Negligible; less than 0.1%

**VISCOSITY**

0.57 cP @ 25°C ASTM D 445

**G. REACTIVITY**

This product is stable and will not react violently with water. Hazardous polymerization will not occur. Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite or calcium hypochlorite.

**H. ENVIRONMENTAL INFORMATION****STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Shut off and eliminate all ignition sources. Keep people away. Recover free product. Add sand, earth or other suitable absorbent to spill area. Minimize breathing vapors. Minimize skin contact. Ventilate confined spaces. Open all windows and doors. Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses, or extensive land areas. Assure conformity with applicable governmental regulations. Continue to observe precautions

for volatile, flammable vapors from absorbed material.

**REPORTABLE QUANTITY (RQ), EPA REGULATION 40 CFR 302**

The RQ for toluene is 1,000 pounds. This product contains approximately 100% toluene.

**THRESHOLD PLANNING QUANTITY (TPQ), EPA REGULATION 40 CFR 355**

Not applicable

**TOXIC CHEMICAL RELEASE REPORTING, EPA REGULATION 40 CFR 372**

This product contains approximately 100% toluene.

|                                 |                        |                   |                       |                    |                    |                |
|---------------------------------|------------------------|-------------------|-----------------------|--------------------|--------------------|----------------|
| EPA HAZARD CLASSIFICATION CODE: | Acute<br>Hazard<br>XXX | Chronic<br>Hazard | Fire<br>Hazard<br>XXX | Pressure<br>Hazard | Reactive<br>Hazard | Not Applicable |
|---------------------------------|------------------------|-------------------|-----------------------|--------------------|--------------------|----------------|

## I. PROTECTION AND PRECAUTIONS

**VENTILATION**

Use only with ventilation sufficient to prevent exceeding recommended exposure limit or buildup of explosive concentrations of vapor in air. Use explosion-proof equipment. No smoking or open lights.

**RESPIRATORY PROTECTION**

Use supplied-air respiratory protection in confined or enclosed spaces, if needed.

**PROTECTIVE GLOVES**

Use chemical-resistant gloves, if needed, to avoid prolonged or repeated skin contact.

**EYE PROTECTION**

Use splash goggles or face shield when eye contact may occur.

**OTHER PROTECTIVE EQUIPMENT**

Use chemical-resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing which could result in prolonged or repeated skin contact.

**WORK PRACTICES / ENGINEERING CONTROLS**

Keep containers and storage containers closed when not in use. Do not store near heat, sparks, flame or strong oxidants. To prevent fire or explosion risk from static accumulation and discharge, effectively ground product transfer system in accordance with the National Fire Protection Association standard for petroleum products.

**PERSONAL HYGIENE**

Minimize breathing vapor or mist. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before reuse. Remove contaminated shoes and thoroughly clean and dry before reuse. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water.

## J. TRANSPORTATION INFORMATION

**TRANSPORTATION INCIDENT INFORMATION**

For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Emergency Response Guidebook for Hazardous Materials Incidents, DOT P 5800.3.

**DOT IDENTIFICATION NUMBER**

UN 1294