

# MATERIAL SAFETY DATA SHEET

ExxonMobil Chemical Company

A Division of Exxon Mobil Corporation

TOLUENE

PAGE: 1  
DATE PREPARED: APR 1, 2000  
MSDS NO.: 92931650

## SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** TOLUENE**CHEMICAL NAME:**

Toluene

CAS 108-88-3

**CHEMICAL FAMILY:**

Aromatic Hydrocarbon

**PRODUCT DESCRIPTION:**

Aromatic odor.

Clear, colorless liquid.

### CONTACT ADDRESS:

ExxonMobil Chemical Company

P.O. Box 3272, Houston, Texas 77253-3272

**	EMERGENCY TELEPHONE NUMBERS: (24 Hours)	**
**	CHEMTREC (800) 424-9300	**
**	ExxonMobil Chemical Company (800) 726-2015	**

**NON EMERGENCY TELEPHONE NUMBERS : (8am-5pm M-F)****FOR HEALTH AND SAFETY INFORMATION CALL : (281) 870-6884****FOR GENERAL PRODUCT INFORMATION CALL : (281) 870-6000**

## SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

The composition of this mixture may be proprietary information. In the event of a medical emergency, compositional information will be provided to a physician or nurse.

This product is hazardous as defined in 29 CFR1910.1200, based on the following compositional information:

<u>OSHA HAZARD</u>	<u>COMPONENT</u>
Flammable	Toluene
OSHA PEL;ACGIH TLV	Toluene
Eye Irritant	Toluene

## SECTION 3 HAZARDS IDENTIFICATION

### POTENTIAL HEALTH EFFECTS

**EYE CONTACT:**

Irritating, but does not injure eye tissue.

**SKIN CONTACT:**

Frequent or prolonged contact may irritate and cause dermatitis.

Occasional brief contact with the liquid will not result in significant irritation unless evaporation is impeded.

Skin contact may aggravate an existing dermatitis condition.

**INHALATION:**

High vapor/aerosol concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, central nervous

# MATERIAL SAFETY DATA SHEET

ExxonMobil Chemical Company

A Division of Exxon Mobil Corporation

TOLUENE

PAGE: 2  
DATE PREPARED: APR 1, 2000  
MSDS NO.: 92931650

system effects, brain damage and possibly death.

**INGESTION:**

Small amounts of this product aspirated into the respiratory system during ingestion or vomiting may cause mild to severe pulmonary injury, possibly progressing to death.

**CHRONIC EFFECTS**

WARNING: Concentrated, prolonged or deliberate inhalation of this product may cause brain and nervous system damage. Prolonged and repeated exposure of pregnant animals to toluene (levels greater than approximately 1500 ppm) has been reported to cause adverse fetal developmental effects.

---

## SECTION 4 FIRST AID MEASURES

---

**EYE CONTACT:**

Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.

**SKIN CONTACT:**

Flush with large amounts of water; use soap if available. Remove grossly contaminated clothing, including shoes, and launder before reuse.

**INHALATION:**

Using proper respiratory protection, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest. Call for prompt medical attention.

**INGESTION:**

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

---

## SECTION 5 FIRE-FIGHTING MEASURES

---

**FLASH POINT:**

45 Deg F.

**FLAMMABLE LIMITS:**

LEL: 1.4 UEL: 7.4 @ 77 Deg F. NOTE: Approximate

**AUTOIGNITION TEMPERATURE:**

1,026 Deg F. NOTE: Approximate

---

**GENERAL HAZARD**

Flammable Liquid, can release vapors that form flammable mixtures at temperatures at or above the flashpoint.

Toxic gases will form upon combustion.

Static Discharge, material can accumulate static charges which can cause an incendiary electrical discharge.

"Empty" containers retain product 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.

Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner, or properly disposed of.

# MATERIAL SAFETY DATA SHEET

ExxonMobil Chemical Company

A Division of Exxon Mobil Corporation

**TOLUENE**

PAGE: 3  
DATE PREPARED: APR 1, 2000  
MSDS NO.: 92931650

---

## **FIRE FIGHTING**

Use water spray to cool fire exposed surfaces and to protect personnel. Shut off "fuel" to fire. If a leak or spill has not ignited, use water spray to disperse the vapors.

Either allow fire to burn under controlled conditions or extinguish with foam or dry chemical. Try to cover liquid spills with foam.

Respiratory and eye protection required for fire fighting personnel.

Avoid spraying water directly into storage containers due to danger of boilover.

This liquid is volatile and gives off invisible vapors. Either the liquid or vapor may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

## **DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS**

Fumes, smoke, and carbon monoxide

---

## **SECTION 6 ACCIDENTAL RELEASE MEASURES**

---

### **LAND SPILL**

Eliminate sources of ignition. Prevent additional discharge of material, if possible to do so without hazard. For small spills implement cleanup procedures; for large spills implement cleanup procedures and, if in public area, keep public away and advise authorities. Also, if this product is subject to CERCLA reporting (see Section 15 REGULATORY INFORMATION) notify the National Response Center.

Prevent liquid from entering sewers, watercourses, or low areas. Contain spilled liquid with sand or earth. Do not use combustible materials such as sawdust.

Recover by pumping (use an explosion proof or hand pump) or with a suitable absorbent.

Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

### **WATER SPILL**

Eliminate sources of ignition. Warn occupants and shipping in surrounding and downwind areas of fire and explosion hazard and request all to stay clear.

Remove from surface with suitable adsorbents. If allowed by local authorities and environmental agencies, sinking and/or suitable dispersants may be used in non-confined waters.

Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

---

## **SECTION 7 STORAGE AND HANDLING**

# MATERIAL SAFETY DATA SHEET

ExxonMobil Chemical Company

A Division of Exxon Mobil Corporation

**TOLUENE**PAGE: 4  
DATE PREPARED: APR 1, 2000  
MSDS NO.: 92931650**ELECTROSTATIC ACCUMULATION HAZARD:**

Yes, use proper bonding and/or grounding procedure. Additional information regarding safe handling of products with static accumulation potential can be ordered by contacting the American Petroleum Institute (API) for API Recommended Practice 2003, entitled "Protection Against Ignitions Arising Out of Static, Lighting, and Stray Currents" (American Petroleum Institute, 1220 L Street Northwest, Washington, DC 20005), or the National Fire Protection Association (NFPA) for NFPA 77 entitled "Static Electricity" (National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101).

**STORAGE TEMPERATURE, °F:**

Ambient

**LOADING/UNLOADING TEMPERATURE, °F:**

Ambient

**STORAGE/TRANSPORT PRESSURE, mmHg:**

Atmospheric

**LOADING/UNLOADING VISCOSITY, cSt:**

0.7

**STORAGE AND HANDLING:**

Keep container closed. Handle and open containers with care. Store in a cool, well ventilated place away from incompatible materials. Do NOT handle or store near an open flame, heat or other sources of ignition. Protect material from direct sunlight. Material will accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or grounding procedures. Do NOT pressurize, cut, heat, or weld containers. Empty product containers may contain product residue. Do NOT reuse empty containers without commercial cleaning or reconditioning.

## SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**EXPOSURE CONTROLS**

The use of local exhaust ventilation is recommended to control process emissions near the source. Laboratory samples should be handled in a lab hood. Provide mechanical ventilation of confined spaces. See respiratory protection recommendations. Use explosion-proof ventilation equipment.

**PERSONAL PROTECTION**

For open systems where contact is likely, wear safety glasses with side shields, long sleeves, and chemical resistant gloves. Where contact may occur, wear safety glasses with side shields. Where concentrations in air may exceed the limits given in this Section and engineering, work practice or other means of exposure reduction are not adequate, NIOSH/MSHA approved respirators may be necessary to prevent overexposure by inhalation.

**WORKPLACE EXPOSURE GUIDELINES****OSHA REGULATION 29CFR1910.1000 REQUIRES THE FOLLOWING PERMISSIBLE EXPOSURE LIMITS:**

A TWA of 100 ppm (375 mg/m<sup>3</sup>) and a STEL of 150 ppm (560 mg/m<sup>3</sup>) for Toluene.

# MATERIAL SAFETY DATA SHEET

ExxonMobil Chemical Company

A Division of Exxon Mobil Corporation

**TOLUENE**PAGE: 5  
DATE PREPARED: APR 1, 2000  
MSDS NO.: 92931650

The recommended permissible exposure levels indicated above reflect the levels revised by OSHA in 1989 or in subsequent regulatory activity. Although the 1989 levels have since been vacated by the 11th Circuit Court of Appeals, ExxonMobil Chemical Company recommends that the lower exposure levels be observed as reasonable worker protection.

**THE ACGIH RECOMMENDS THE FOLLOWING THRESHOLD LIMIT VALUES:**

A TWA of 50 ppm (188 mg/m<sup>3</sup>) for Toluene, with skin and A4 designations.

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

<b>SPECIFIC GRAVITY, at °F:</b> 0.87 at 60	<b>VAPOR PRESSURE, mmHg at °F:</b> 22 at 68
<b>SOLUBILITY IN WATER, wt. % at °F:</b> 0.05 at 77 Calculated	<b>VISCOSITY OF LIQUID, cSt at °F:</b> 0.7 at 77 Approximate
<b>SP. GRAV. OF VAPOR, at 1 atm (Air=1):</b> 3.20 Calculated	<b>FREEZING/MELTING POINT, °F:</b> Less than -76
<b>EVAPORATION RATE, n-Bu Acetate=1:</b> 2.4 Approximate	<b>BOILING POINT, °F:</b> 230 to 232

**SECTION 10 STABILITY AND REACTIVITY****STABILITY:**

Stable

**CONDITIONS TO AVOID INSTABILITY:**

Not Applicable

**HAZARDOUS POLYMERIZATION:**

Will not occur

**CONDITIONS TO AVOID HAZARDOUS POLYMERIZATION:**

Not Applicable

**MATERIALS AND CONDITIONS TO AVOID INCOMPATIBILITY:**

Strong oxidizing agents, concentrated nitric or sulphuric acid, halogens, or molten sulphur.

**HAZARDOUS DECOMPOSITION PRODUCTS:**

None

**SECTION 11 TOXICOLOGICAL INFORMATION**

Please refer to Section 3 for available information on potential health effects.

**SECTION 12 ECOLOGICAL INFORMATION**

No specific ecological data are available for this product. Please refer to Section 6 for information regarding accidental releases and Section 15 for regulatory reporting information.

**SECTION 13 DISPOSAL CONSIDERATIONS**

Please refer to Sections 5, 6, and 15 for disposal and regulatory information.

# MATERIAL SAFETY DATA SHEET

ExxonMobil Chemical Company

A Division of Exxon Mobil Corporation

**TOLUENE**PAGE: 6  
DATE PREPARED: APR 1, 2000  
MSDS NO.: 92931650

---

**SECTION 14 TRANSPORT INFORMATION**

---

**DEPARTMENT OF TRANSPORTATION (DOT):**

DOT SHIPPING DESCRIPTION: TOLUENE, 3, UN 1294, II

---

**SECTION 15 REGULATORY INFORMATION**

---

**TSCA:**

This product is listed on the TSCA Inventory as a UVCB (Unknown, Variable Composition or Biological) Chemical at CAS Registry Number 108-88-3

**CERCLA:**

If the reportable quantity of this product is accidentally spilled, the incident is subject to the provisions of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and must be reported to the National Response Center by calling 800-424-8802.

The reportable spill quantity of this product is 1,000 pounds.

This product contains:

Toluene.

**SARA TITLE III:**

Under the provisions of Title III, Sections 311/312 of the Superfund Amendments and Reauthorization Act, this product is classified into the following hazard categories: Immediate health, Delayed Health, Fire.

This information may be subject to the provisions of the Community Right-to-Know Reporting Requirements (40 CFR 370) if threshold quantity criteria are met.

This product contains the following Section 313 Reportable Ingredients:

<u>COMPONENT</u>	<u>CAS NO.</u>	<u>MAXIMUM %</u>
Toluene	108-88-3	100.0

---

**SECTION 16 OTHER INFORMATION**

---

**HAZARD RATING SYSTEMS:**

This information is for people trained in:

National Paint &amp; Coatings Association's (NPCA)

Hazardous Materials Identification System (HMIS)

National Fire Protection Association (NFPA 704)

Identification of the Fire Hazards of Materials

	NPCA-HMIS	NFPA 704	KEY
HEALTH	2	2	4 = Severe
FLAMMABILITY	3	3	3 = Serious
REACTIVITY	0	0	2 = Moderate
			1 = Slight
			0 = Minimal

# MATERIAL SAFETY DATA SHEET

ExxonMobil Chemical Company

A Division of Exxon Mobil Corporation

**TOLUENE**

PAGE: 7  
DATE PREPARED: APR 1, 2000  
MSDS NO.: 92931650

---

**REVISION SUMMARY:**

Since March 21, 1998 the corporate names have been changed to reflect the merger of Exxon and Mobil.

---

**REFERENCE NUMBER:**

HDHA-C-25056

**SUPERSEDES ISSUE DATE:**

March 21, 1998

---

THIS INFORMATION RELATES TO THE SPECIFIC MATERIAL DESIGNATED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. SUCH INFORMATION IS TO THE BEST OF OUR KNOWLEDGE AND BELIEF, ACCURATE AND RELIABLE AS OF THE DATE COMPILED. HOWEVER, NO REPRESENTATION, WARRANTY OR GUARANTEE IS MADE AS TO ITS ACCURACY, RELIABILITY OR COMPLETENESS. IT IS THE USER'S RESPONSIBILITY TO SATISFY HIMSELF AS TO THE SUITABILITY AND COMPLETENESS OF SUCH INFORMATION FOR HIS OWN PARTICULAR USE. WE DO NOT ACCEPT LIABILITY FOR ANY LOSS OR DAMAGE THAT MAY OCCUR FROM THE USE OF THIS INFORMATION NOR DO WE OFFER WARRANTY AGAINST PATENT INFRINGEMENT.

---

LAST PAGE

EYE -----  
CONTACT WITH THE EYE MAY CAUSE SEVERE IRRITATION.  
INGESTION -----  
HARMFUL OR FATAL IF SWALLOWED. PULMONARY ASPIRATION HAZARD IF SWALLOWED  
AND/OR VOMITING OCCURS - CAN ENTER LUNGS AND CAUSE DAMAGE.  
CARCINOGEN LISTED BY-IARC (NO) NTP (NO) OSHA (NO) ACGIH (NO) OTHER (NO)  
PRE-EXISTING MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE-  
DISORDERS OR DISEASES OF THE SKIN, EYE, LIVER, KIDNEY, NERVOUS SYSTEM,  
RESPIRATORY AND/OR PULMONARY SYSTEM, LUNG (E.G. ASTHMA-LIKE  
CONDITIONS).

=====

#### 4. FIRST AID MEASURES

INHALATION -----  
MOVE PERSON TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION,  
OBTAIN MEDICAL ASSISTANCE.  
SKIN -----  
WASH WITH SOAP AND WATER UNTIL NO ODOR REMAINS. IF REDNESS OR SWELLING  
DEVELOPS, OBTAIN MEDICAL ASSISTANCE. IMMEDIATELY REMOVE SOAKED CLOTHING.  
WASH CLOTHING BEFORE REUSE.  
EYE -----  
FLUSH WITH WATER FOR AT LEAST 15 MINUTES. OBTAIN MEDICAL ASSISTANCE.  
INGESTION -----  
DO NOT INDUCE VOMITING! DO NOT GIVE LIQUIDS! OBTAIN EMERGENCY MEDICAL  
ATTENTION. SMALL AMOUNTS WHICH ACCIDENTALLY ENTER MOUTH SHOULD BE RINSED  
OUT UNTIL TASTE OF IT IS GONE.

=====

#### 5. FIRE FIGHTING MEASURES

FLASH POINT: 48 TAG C.C. (DEG. F); 8.9 TAG C.C. (DEG. C)  
AUTOIGNITION TEMP.: 997 (DEG. F); 536 (DEG. C)

---FLAMMABLE LIMITS IN AIR---  
LOWER EXPLOSIVE LIMIT (LEL): 1.2 % VOLUME  
UPPER EXPLOSIVE LIMIT (UEL): 7.1 % VOLUME

FIRE AND EXPLOSION HAZARDS -----  
FLAMMABLE LIQUID (FLASH POINT LESS THAN 100F)

EXTINGUISHING-MEDIA -----  
WATER SPRAY. REGULAR FOAM. DRY CHEMICAL. CARBON DIOXIDE.

SPECIAL FIRE FIGHTING INSTRUCTIONS -----  
COOL TANK/ CONTAINER. WEAR SELF-CONTAINED BREATHING APPARATUS. WEAR  
STRUCTURAL FIREFIGHTERS PROTECTIVE CLOTHING.

NFPA/HMIS CLASSIFICATION	HAZARD RATING
HEALTH - 3 / 3	0=LEAST 1=SLIGHT
FIRE - 3 / 3	2=MODERATE 3=HIGH
REACTIVITY - 0 / 0	4=EXTREME
PERSONAL PROTECTION INDEX - X	

SPECIFIC HAZARD: FLAMMABLE

=====

#### 6. ACCIDENTAL RELEASE MEASURES

PREVENT IGNITION; STOP LEAK; VENTILATE AREA. CONTAIN SPILL. USE WATER  
SPRAY TO DISPERSE VAPORS. KEEP UPWIND OF LEAK. FOR LARGE SPILL, LEAK OR  
RELEASE. USE PERSONAL PROTECTIVE EQUIPMENT STATED IN SECTION 8. ADVISE  
EPA; STATE AGENCY IF REQUIRED. ABSORB ON INERT MATERIAL. SHOVEL, SWEEP  
OR VACUUM SPILL.



---

## 7. HANDLING AND STORAGE

KEEP AWAY FROM HEAT, SPARKS AND FLAME. KEEP CONTAINER TIGHTLY CLOSED. KEEP IN WELL VENTILATED SPACE. NFPA CLASS 1B STORAGE. CONSULT NFPA AND OSHA CODES. TRANSFER OPERATIONS MUST BE ELECTRICALLY GROUNDED TO DISSIPATE STATIC BUILDUP. AVOID PROLONGED BREATHING OF MIST OR VAPOR. AVOID PROLONGED OR REPEATED CONTACT WITH SKIN. AVOID CONTACT WITH EYES. WASH THOROUGHLY AFTER HANDLING.

---

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

CONSULT WITH A HEALTH/SAFETY PROFESSIONAL FOR SPECIFIC SELECTION.

### VENTILATION -----

USE ONLY WITH ADEQUATE VENTILATION. VENTILATE AS NEEDED TO COMPLY WITH EXPOSURE LIMIT. EXPLOSION PROOF VENTILATION EQUIPMENT REQUIRED.

### PERSONAL PROTECTIVE EQUIPMENT -----

#### EYE -----

SPLASH PROOF CHEMICAL GOGGLES OR FULL FACE SHIELD RECOMMENDED TO PROTECT AGAINST SPLASH OF PRODUCT.

#### GLOVES -----

PROTECTIVE GLOVES RECOMMENDED TO PROTECT AGAINST CONTACT WITH PRODUCT. THE FOLLOWING GLOVE MATERIALS ARE ACCEPTABLE: POLYETHYLENE; POLYVINYL CHLORIDE (PVC); NEOPRENE; NITRILE; POLYVINYL ALCOHOL; VITON;

#### RESPIRATOR -----

CONCENTRATION-IN-AIR DETERMINES PROTECTION NEEDED. USE ONLY NIOSH CERTIFIED RESPIRATORY PROTECTION. HALF-MASK AIR PURIFYING RESPIRATOR WITH ORGANIC VAPOR CARTRIDGES IS ACCEPTABLE TO 10 TIMES THE EXPOSURE LIMIT. FULL-FACE AIR PURIFYING RESPIRATOR WITH ORGANIC VAPOR CARTRIDGES IS ACCEPTABLE TO 50 TIMES THE EXPOSURE LIMIT NOT TO EXCEED THE CARTRIDGE LIMIT OF 1000 PPM. PROTECTION BY AIR PURIFYING RESPIRATORS IS LIMITED. USE A POSITIVE PRESSURE-DEMAND FULL-FACE SUPPLIED AIR RESPIRATOR OR SCBA FOR EXPOSURES ABOVE 50X THE EXPOSURE LIMIT. IF EXPOSURE IS ABOVE IDLH (IMMEDIATELY DANGEROUS TO LIFE & HEALTH) OR THERE IS THE POSSIBILITY OF AN UNCONTROLLED RELEASE OR EXPOSURE LEVELS ARE UNKNOWN THEN USE A POSITIVE PRESSURE-DEMAND FULL-FACE SUPPLIED AIR RESPIRATOR WITH ESCAPE BOTTLE OR SCBA.

#### OTHER -----

IF CONTACT IS UNAVOIDABLE, WEAR CHEMICAL RESISTANT CLOTHING. THE FOLLOWING MATERIALS ARE ACCEPTABLE AS PROTECTIVE CLOTHING MATERIALS: POLYVINYL ALCOHOL (PVA); POLYVINYL CHLORIDE (PVC); NEOPRENE; NITRILE; VITON; POLYURETHANE; SAFETY SHOWER AND EYE WASH AVAILABILITY RECOMMENDED. LAUNDER SOILED CLOTHES. FOR NON-FIRE EMERGENCIES, POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS (SCBA) & STRUCTURAL FIREFIGHTERS' PROTECTIVE CLOTHING WILL PROVIDE LIMITED PROTECTION.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT.....: 231 (DEG. F) 110.5 (DEG. C)  
MELTING POINT.....: MINUS 139 (DEG. F) MINUS 95 (DEG. C)  
SPECIFIC GRAVITY.....: 0.87 (WATER=1)  
PACKING DENSITY.....: N/A (KG/M3)  
VAPOR PRESSURE.....: 26 AT 25C (MM HG @ 20 DEG C)  
VAPOR DENSITY.....: 3.2 (AIR=1)  
SOLUBILITY IN WATER..: 0.047 (% BY VOLUME)  
PH INFORMATION.....: N/A AT CONC. N/A G/L H2O  
% VOLATILES BY VOL...: 100  
EVAPORATION RATE....: 5X SLOWER (ETHYL ETHER=1)  
OCTANOL/WATER COEFF.: N.D.  
APPEARANCE.....: COLORLESS LIQUID.  
ODOR.....: PLEASANT SWEET ODOR.  
ODOR THRESHOLD.....: N.D. (PPM)  
VISCOSITY.....: N.D. SUS @ N.D DEG F ... N.D. CST @ N.D DEG C

---

N/A = NOT APPLICABLE N.D. = NO DATA / NOT DETERMINED

MOLECULAR WEIGHT.....: 92.14 (G/MOLE)

=====

10. STABILITY AND REACTIVITY

STABILITY -----  
STABLE.  
CONDITIONS TO AVOID-  
HEAT, SPARKS AND OPEN FLAMES.  
INCOMPATIBLE MATERIALS -----  
STRONG OXIDIZERS.  
HAZARDOUS DECOMPOSITION -----  
CARBON MONOXIDE AND ASPHYXIANTS  
POLYMERIZATION -----  
WILL NOT OCCUR.

=====

11. TOXICOLOGICAL INFORMATION

FOR THE PRODUCT -----

INHALATION: VAPOR HARMFUL! OVEREXPOSURE TO HIGH CONCENTRATIONS CAN CAUSE CENTRAL NERVOUS SYSTEM (BRAIN) EFFECTS, DIZZINESS, DIFFICULTY IN BREATHING, UNCONSCIOUSNESS, COMA, DEATH. THERE ARE REPORTS OF HEART IRREGULARITIES FROM MASSIVE EXPOSURES. PROLONGED OVEREXPOSURES CAN CAUSE BRAIN, LIVER, KIDNEY EFFECTS/DAMAGE. SKIN: CAN BE ABSORBED. PROLONGED CONTACT IS IRRITATING. EYE: POSSIBLE SEVERE IRRITATION. ORAL: HARMFUL OR FATAL IF SWALLOWED. PULMONARY ASPIRATION HAZARD- CAN ENTER LUNGS & CAUSE DAMAGE. IN RATS, PROLONGED BREATHING OF 3000 PPM DID NOT CAUSE BIRTH DEFECTS (NOT TERATOGENIC); FETAL TOXICITY AT 1500 PPM; NO EFFECT AT 750 PPM.

TOLUENE (COMPONENT)

INH: VAPOR HARMFUL! OVEREXPOSURE TO HIGH CONCENTRATIONS: EYE, NOSE, THROAT, LUNG IRRITATION; CNS (BRAIN) EFFECTS, DIZZINESS, DIFFICULTY IN BREATHING, COMA, DEATH. REPORTS OF HEART BEAT IRREGULARITIES FROM MASSIVE EXPOSURE. PROLONGED OVEREXPOSURE CAN CAUSE BRAIN, LIVER, KIDNEY EFFECTS/DAMAGE. SKIN: CAN BE ABSORBED. PROLONGED CONTACT IS IRRITATING. EYE: IRRITATION. ORAL: HARMFUL OR FATAL IF SWALLOWED. PULMONARY ASPIRATION HAZARD-CAN ENTER LUNG & CAUSE DAMAGE. PREG: MAY CAUSE MENTAL AND/OR GROWTH RETARDATION IN CHILDREN OF FEMALE SOLVENT ABUSERS (SNIFFERS); IN RATS PROLONGED BREATHING WAS TOXIC TO FETUSES & MOTHERS - 1500 PPM; NO BIRTH DEFECTS - 5000 PPM. NO EFFECTS - 750 PPM.

BENZENE (COMPONENT)

INHALATION: VAPOR HARMFUL! OVEREXPOSURE TO HIGH CONCENTRATIONS CAN CAUSE CENTRAL NERVOUS SYSTEM (BRAIN) EFFECTS, HEADACHE, DIZZINESS, DIFFICULTY IN BREATHING, UNCONSCIOUSNESS, COMA, LIVER AND KIDNEY EFFECTS/DAMAGE, DEATH. THERE ARE REPORTS OF HEART IRREGULARITIES FROM MASSIVE EXPOSURES. IARC GROUP 1-HUMAN CANCER HAZARD. REPEATED/ PROLONGED INHALATION CAN CAUSE BLOOD DISORDERS-ANEMIA TO LEUKEMIA. CHANGES IN CHROMOSOMES. FETAL EFFECTS IN ANIMAL STUDIES AT REPEATED/ PROLONGED EXPOSURES. SKIN: CAN BE ABSORBED; IRRITATING. EYE: SEVERE IRRITATION POSSIBLE. ORAL: POISON! HARMFUL OR FATAL IF SWALLOWED. PULMONARY ASPIRATION HAZARD- CAN ENTER THE LUNGS AND CAUSE DAMAGE.

=====

12. ECOLOGICAL INFORMATION

AQUATIC TOXICITY -----

FRESHWATER TOXIC CONCENTRATIONS: 61PPM-1HOUR SUNFISH, 44PPM-96HOURS TLM  
FATHEAD MINNOW, 24PPM-96HOURS TLM BLUEGILL. SALTWATER TOXICITY:  
33PPM-24HOURS TLM BRINE SHRIMP.

## =====

## 13. DISPOSAL CONSIDERATIONS

FOLLOW FEDERAL, STATE AND LOCAL REGULATIONS. RCRA HAZARDOUS WASTE. DO NOT FLUSH TO DRAIN/ STORM SEWER. CONTRACT TO AUTHORIZED DISPOSAL SERVICE.

## =====

## 14. TRANSPORTATION INFORMATION

DOT-  
PROPER SHIPPING NAME- TOLUENE  
HAZARD CLASS- 3 (FLAMMABLE LIQUID)  
IDENTIFICATION NUMBER- UN1294  
LABEL REQUIRED- PG II

IMDG- PROPER SHIPPING NAME- TOLUENE

IATA- PROPER SHIPPING NAME- TOLUENE

## =====

## 15. REGULATORY INFORMATION

SARA 302 THRESHOLD PLANNING QUANTITY. N/A

SARA 304 REPORTABLE QUANTITY ..... 1000 POUNDS

SARA 311 CATEGORIES- IMMEDIATE (ACUTE) HEALTH EFFECTS.. Y  
DELAYED (CHRONIC) HEALTH EFFECTS.. Y  
FIRE HAZARD ..... Y  
SUDDEN RELEASE OF PRESSURE HAZARD. N  
REACTIVITY HAZARD ..... N

WHEN A PRODUCT AND/OR COMPONENT IS LISTED BELOW, THE REGULATORY LIST ON WHICH IT APPEARS IS INDICATED.

TOLUENE - CA FL MA MN NJ PA 01 07  
BENZENE - CA FL MA MN NJ PA 01 03 04 05 06 07 10

01=SARA 313  
04=OSHA CARCINOGEN  
07=CERCLA 302.4  
10=OTHER CARCINOGEN  
PA=PENNSYLVANIA RTK  
MA=MASSACHUSETTS RTK  
FL=FLORIDA  
NY=NEW YORK  
LA=LOUISIANA

02=SARA 302/304  
05=ACGIH CARCINOGEN  
08=WHMIS CONTROLLED PROD.

NJ=NEW JERSEY RTK  
MI=MICHIGAN 406  
RI=RHODE ISLAND  
WV=WEST VIRGINIA  
ME=MAINE

03=IARC CARCINOGEN  
06=NTP CARCINOGEN

CA=CALIFORNIA PROP 65  
MN=MINNESOTA RTK  
IL=ILLINOIS  
CT=CONNECTICUT  
OH=OHIO

THIS PRODUCT OR ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE U.S. TSCA INVENTORY.

## =====

## 16. OTHER INFORMATION

DANGER! HARMFUL OR FATAL IF SWALLOWED. IF SWALLOWED, DO NOT INDUCE VOMITING. OBTAIN MEDICAL ASSISTANCE IMMEDIATELY. KEEP OUT OF REACH OF CHILDREN. FLAMMABLE! KEEP CONTAINER CLOSED. D.O.T. FLAMMABLE LIQUID LABEL AND "HAZARDOUS WHEN EMPTY" PICTOGRAM ALSO REQUIRED FOR CONTAINERS. VAPOR HARMFUL! INTENTIONAL MIS-USE (SNIFFING) CAN CAUSE DAMAGE TO BRAIN, LIVER, KIDNEYS, AND/OR DEATH.

N/A = NOT APPLICABLE N.D. = NO DATA / NOT DETERMINED

## =====

## 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

REVISION DATE: 03/20/1998  
UN NUMBER- UN1294

PRIMARY APPLICATION- CHEMICAL INTERMEDIATE

MANUFACTURER- SUN COMPANY, INC.  
TEN PENN CENTER  
1801 MARKET STREET  
PHILADELPHIA PA 19103-1699SYNONYMS.....: TOLUOL, METHYLBENZENE  
CAS REGISTRY NO: 108-88-3  
CAS NAME.....: TOLUENE  
CHEMICAL FAMILY: AROMATIC HYDROCARBON  
INFORMATION  
SUPPLIER... MARIA DAYRIT  
PHONE.....: (610) 859-1120

EMERGENCY PHONE NUMBERS (AFTER NORMAL BUSINESS HOURS)

SUN CO.. 1-800-964-8861  
CHEMTREC. 1-800-424-9300

## =====

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

ANALYSIS / INFORMATION ON INGREDIENTS						EXPOSURE GUIDELINES				
COMPONENT/CAS NO.	LO%	HI%	OSHA		ACGIH	SUN/MFR		UNIT		
			TWA	STEL	TWA	STEL	TWA		STEL	
LIMITS FOR THE PRODUCT:										
			100	150	50					PPM
TOLUENE										
108-88-3	99.80	100.0	100	150	50					PPM
BENZENE										
71-43-2	.00	.03	1	5	.5000	2				PPM

ADDITIONAL EXPOSURE LIMITS ----- GOVERNMENT REGULATION  
OTHER LIMIT- SEE ABOVE. LIMIT EXPOSURES TO 100 PPM - 8HOURS

## =====

## 3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW -----

DANGER! FLAMMABLE LIQUID AND VAPOR. HARMFUL IF INHALED. HIGH VAPOR  
CONCENTRATIONS MAY CAUSE DIZZINESS. MAY CAUSE SKIN IRRITATION. CAUSES  
EYE IRRITATION. HARMFUL OR FATAL IF SWALLOWED. PULMONARY ASPIRATION  
HAZARD-CAN ENTER LUNGS AND CAUSE DAMAGE. MAY CAUSE SEVERE CHRONIC  
TOXICITY.

APPEARANCE-- COLORLESS LIQUID. ODOR-- PLEASANT SWEET ODOR.

POTENTIAL HEALTH EFFECTS -----

PRIMARY ROUTES OF ENTRY- INHALATION( X ) SKIN( X ) EYE( X ) INGESTION( X )

INHALATION -----

EXCESSIVE EXPOSURES MAY CAUSE IRRITATION TO EYES, NOSE, THROAT, LUNGS;  
RESPIRATORY TRACT; CENTRAL NERVOUS SYSTEM (BRAIN) EFFECTS; HEADACHES,  
NAUSEA; DIZZINESS, LOSS OF BALANCE AND COORDINATION; UNCONSCIOUSNESS,  
COMA; RESPIRATORY FAILURE AND DEATH. REPEATED EXCESSIVE EXPOSURES MAY  
CAUSE LIVER EFFECTS OR DAMAGE. KIDNEY EFFECTS OR DAMAGE.

SKIN -----

SKIN ABSORPTION OF MATERIAL MAY PRODUCE SYSTEMIC TOXICITY. MAY CAUSE  
IRRITATION WITH PROLONGED OR REPEATED CONTACT. REMOVES NATURAL OILS &  
FATS FROM SKIN.