Product ID:TOLUENE, TECHNICAL MSDS Date:03/10/1999 FSC:6810 NIIN:00-290-0048 Status Code:A **MSDS Number: CJJWN** === Responsible Party === Company Name: PHOENIX INDUSTRIES INC Address:11028 LEADBETTER RD UNIT 10 City:ASHLAND State:VA ZIP:23005 Country:US Emergency Phone Num:800-274-5263 CAGE:0YED2 === Contractor Identification === Company Name: PHOENIX INDUSTRIES I NC Address:1519 CHAMBERLAYNE PARKWAY Box:City:RICHMOND State:VA ZIP:23222 Country:US Phone:804-264-5183/FAX: 264-5535 Contract Num:SPO450-99-M-NA31 CAGE:0YED2

Ingred Name:TOLUENE (SARA III) CAS:108-88-3 RTECS #:XS5250000 Fraction by Wt: 100% Other REC Limits:NONE RECOMMENDED OSHA PEL:200 PPM/150 STEL ACGIH TLV:50 PPM; 9293 EPA Rpt Qty:1000 LBS DOT Rpt Qty:1000 LBS

Flash Point:=7.2C. 45.F

LD50 LC50 Mixture:LD50 ORAL RAT =636 MG/KG. Routes of Entry: Inhalation:YES Skin:YES Ingestion:NO Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO Health Hazards Acute and Chronic: ACUTE -EYE: IRRITATION. SKIN: IRRITATION. INHALATION: UPPER RESPIRATORY TRACT IRRITATION, CENTRAL NERVOUS SYSTEM EFFECTS, POSSIBLE UNCONSCIOUSNESS, EVEN DEATH. INGESTION: CAN CAUSE ABDOMINAL SPASMS AN D OTHER SYMPTOMS THAT PARALLEL OVER-EXPOSURE FROM INHLATION. ASPIRATION INTO LUNGS AFTER INGESTION CAN CAUSE CHEMICAL PNEUMONITIS AND DEATH. CHRONIC :- ANEMIA, DECREASED BLOOD CELL COUNT AND BONE MARR OW HYPOPLASIA, LIVER AND KIDNEY DAMAGE. Effects of Overexposure: EYES: REDNESS AND PAIN. SKIN: REDNESS, DRYNESS. INHALATION: DIZZINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE, UNCONSCIOUSNESS, DEATH. INGESTION: NAUSEA, VOMITING, DIARRHEA, AND SAME SYMPTOMS AS INHALAT ION. Medical Cond Aggravated by Exposure: PREEXISTING SKIN DISORDERS, IMPAIRED LIVER OR KIDNEY FUNCTION MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THIS SUBSTANCE. ALCOHOLIC BEVERAGE CONSUMPTION CAN ENHANCE THE TOXIC EFFECTS OF THIS SUBSTANCE. First Aid: EYES: FLUSH WITH PLENTY OF WATER FOR 15 MINUTES. SEE DOCTOR. SKIN: REMOVE CONTAMINATED CLOTHING. WASH WITH SOAP AND WATER. SEE DOCTOR. INHALATION: REMOVE VICTIM TO FRESH AIR. GIVE OXYGEN/CPR IF NEEDED . SEE DOCTOR. INGESTION: ASPIRATION HAZARD, DO NOT INDUCE VOMITING. GIVE LARGE QUANTITIES OF WATER TO DRINK IF PERSON IS CONSCIOUS. IF SPONTANEOUS VOMITING OCCURS, KEEP HEAD BELOW HIPS TO PREVENT ASPI RATION INTO LUNGS. SEE DOCTOR IMMEDIATELY. Flash Point Method:TCC

Lower Limits:3.3% Upper Limits:19% Extinguishing Media:USE CARBON DIOXIDE, FOAM, OR DRY CHEMICAL. WATER

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MAY BE USED TO FLUSH SPILLLS AWAY FROM EXPOSURES AND TO DILUTE SPILLS TO NON-FLAMMABLE MIXTURES.

Fire Fighting Procedures:WEAR FIRE FIGHTING PROTECTIVE EQUIPMENT AND NIOS APPROVED SELF CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN THE PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE. COOL FIRE EXPOSED CONT AINERS WITH WATER SPRAY. Unusual Fire/Explosion Hazard:VAPORS HEAVIER THAN AIR. CAN TRAVEL ALONG GROUND AND FLAHSBACK. COMBUSTION OR HEAT OF FIRE MAY PRODU CE

HAZARDOUS DECOMPOSITION PRODUCTS AND VAPORS.

Spill Release Procedures:WEAR PROTECTIVE EQUIPMENT. ELIMINATE SOURCES OF IGNITION. VENTILATE AREA. CONTAIN AND RECOVER LIQUID WHEN POSSIBLE. COLLECT LIQUID IN AN APPROPRIAT CONTAINER OR ABSORB WITH NON-FLAMMABLE ABSORBENT SU CH AS SAND, EARTH, VERMICULITE. GROUND ALL HANDLING EQUIPMENTS. PREVENT LIQUID FROM ENTERING SEWERS OR WATERWAYS. Neutralizing Agent

:NOT APPLICABLE.

Handling and Storage Precautions: PROTECT AGAINST PHYSICAL DAMAGE. STORE IN COOL, DRY, WELL VENTILATED PLACE, AWAY FROM HEAT, IGNITION SOURCES AND INCOMPATIBLE MATERIALS. KEEP CONTAINERS CLOSED WHEN NOT IN USE. STORAGE AND USE AREAS M UST BE NO SMOKING AREAS.
Other Precautions: AVOID BREATHING VAPORS, EYE AND SKIN CONTACT. USE ONLY WITH ADEQUATE VENTILATION. DO NOT TAKE INTERNALLY. EMPTY CONT

AINERS RETAIN RESIDUE, TREAT THEM AS IF THEY WERE FULL.

Respiratory Protection:NIOSH/MSHA APPROVED HALF-FACE RESPIRATOR WITH ORGANIC VAPOR CARTRIDGE MAY BE WORN UPTO TEN TIMES THE EXPOSURE LIMIT OR THE MAX LIMIT OF CONENTRATION SPECIFIED BY THE SUPPLIER. FULL FACE PIECE ORGANIC VAPOR RESPIRATOR MAY BE WORN 50 TIMES THE EXPOSURE LIMIT OR THE MAX USE CONCENTRATION. AIR PRIFYING RESPIRATORS DO NOT PROTECT IN OXYGEN-DEFICIENT ATMOSPHERE.

Ventilation:MECHANICAL (GENERAL) AND/OR LOCAL EXHAUST VENTILATION TO MAINTAIN EXPOSURE BELOW TLV. USE EXPLOSION-PROOF EQUIPMENT. Protective Gloves:NEOPRENE GLOVES.

Eye Protection: CHEMICAL SPLASH GOGGLES.

Other Protective Equipment:WORK CLOTHING TO PREVENT REPEATED OR PROLONGED SKIN CONTACT. EYE WASH STATION AND SAFETY SHOWER.

Work Hygienic Practices: WASH THOROUGHLY AFTER HANDLING. LAUNDER CONTAMINATED CLOTHING. DISCARD CONTAMINATED LEATHER GOODS.

Suppleme

ntal Safety and Health

NEVER USE WELDING OR CUTTING TORCH NEAR THIS ITEM, BECAUSE PRODUCT, EVEN JUST RESIDUE, CAN IGNITE EXPLOSIVELY.

HCC:F2 Boiling Pt:=111.1C, 232.F B.P. Text:232F,111C Vapor Pres:22 @ 68F Vapor Density:3.14 Spec Gravity:0.86 Evaporation Rate & amp; Reference:2.0 (BUTYL ACETATE = 1) Solubility in Water:INSOLUBLE. Appearance and Odor:CLEAR COLORLESS LIQUID. BENZENE-LIKE ODOR. Percent Volatiles by Volume:10 0

Stability Indicator/Materials to Avoid:YES STRONG OXIDIZING AGENTS Stability Condition to Avoid:HIGH HEAT, OPEN FLAMES AND OTHER SOURCES OF IGNITION Hazardous Decomposition Products:CARBON MONOXIDE, CARBON DIOXIDE, AND REACTIVE HYDROCARBONS (ALDEHYDES, AROMATICS, ETC.)

Toxicological Information:ORAL RAT LD50= 636 MG/KG; SKIN LD50=14100 MICRO LIT ER/KG; INHALATION RAT LC50= 49 GM/M3/4H; IRRITATION DATA: SKIN RABBIT, 500 MG, MODERATE; EYE RABBIT, 2 MG/24H, SEVERE. INVESTIGATED AS A TUMORIGEN, M UTAGEN, REPRODUCTIVE EFFECTOR. HAS SHOWN SOME REPRODUCTIVE EFFECTS IN LABORATORY ANIMALS.

Ecological:WHEN RELAEASE INTO THE SOIL, THIS MATERIAL IS EXPECTED TO QUICKLY EVAPORATE, MAY BIOGRADE TO A MODERATE EXTENT AND LEACH INTO GROUNDWATER. WHEN RELEASED INTO WATER, THIS MATERIAL IS EXPECTED

TO QUICK LY EVAPORATE AND READILY BIODEGRADE. THIS MATERIAL HAS AN ESTIMATED BIOCONCENTRATION FACTOR 13.2. IT DOES NOT SIGNIFICANTLY BIOACCUMULATES. WHEN RELEASED INTO AIR THIS MATEIAL IS EXPECTED TO READILY D EGRADED BY REACTION WITH PHOTOCHEMICALLY PRODUCED HYDROXYL RADICALS, AND HAS AHALF LIFE OF