



MATERIAL SAFETY DATA SHEET

MSDS NUMBER ▶

8,030-11

PAGE 1

97368 (4-85)

24 HOUR EMERGENCY ASSISTANCE			GENERAL MSDS ASSISTANCE		
SHELL: 713-473-9461 CHEMTREC: 800-424-9300			SHELL: 713-241-4819		
ACUTE HEALTH * + 2	FIRE 2	REACTIVITY O	HAZARD RATING ▶ LEAST - 0 SLIGHT - 1 MODERATE - 2 HIGH - 3 EXTREME - 4		
*For acute and chronic health effects refer to the discussion in Section III					



SECTION I		NAME
PRODUCT ▶	SHELL TS-28 SOLVENT	
CHEMICAL NAME ▶	NOT APPLICABLE	
CHEMICAL FAMILY ▶	HYDROCARBON SOLVENT	
SHELL CODE ▶	83437	

SECTION II-A		PRODUCT/INGREDIENT	
NO.	COMPOSITION	CAS NUMBER	PERCENT
P	SHELL TS-28 SOLVENT	MIXTURE*	100
1	SOLVENT NAPHTHA (PETROLEUM), MEDIUM ALIPHATIC	64742-88-7	25
2	SOLVENT NAPHTHA (PETROLEUM), LIGHT AROMATIC	64742-95-6	75
.	CONTAINS		
A	TRIMETHYLBENZENES (TOTAL)	25551-13-7	51
B	PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)	95-63-6	<32
C	XYLENE	1330-20-7	3
D	CUMENE	98-82-8	<2.0

*A COMPLEX COMBINATION OF PREDOMINATELY C8-C12 HYDROCARBONS; EXACT COMPOSITION WILL VARY.

HMIS HAZARD RATING: HEALTH 1 FIRE 2 REACTIVITY 0

SECTION II-B		ACUTE TOXICITY DATA	
NO.	ACUTE ORAL LD50	ACUTE DERMAL LD50	ACUTE INHALATION LC50
P	NOT AVAILABLE		
1*	>25 ML/KG (RAT)	> 4 ML/KG (RABBIT)	> 700 PPM/4H (RAT)
2*	4.7 G/KG (RAT)	>4 ML/KG (RAT)	>3670 PPM/8H (RAT)

*BASED UPON TESTING OF EITHER PRODUCT OR ESSENTIALLY SIMILAR PRODUCTS.

SECTION III	HEALTH INFORMATION
-------------	--------------------

THE HEALTH EFFECTS NOTED BELOW ARE CONSISTENT WITH REQUIREMENTS UNDER THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200).

EYE CONTACT

LIQUID IS MINIMALLY IRRITATING TO THE EYES. HIGH VAPOR CONCENTRATIONS MAY CAUSE IRRITATION.

SKIN CONTACT

LIQUID IS SLIGHTLY IRRITATING TO THE SKIN. PROLONGED OR REPEATED LIQUID CONTACT CAN RESULT IN DEFATTING AND DRYING OF THE SKIN WHICH MAY RESULT IN SKIN IRRITATION AND DERMATITIS.

INHALATION

VAPORS MAY BE IRRITATING TO NOSE, THROAT AND RESPIRATORY TRACT. HIGH VAPOR CONCENTRATIONS MAY CAUSE CNS DEPRESSION.

INGESTION

INGESTION OF PRODUCT MAY RESULT IN VOMITING; ASPIRATION (BREATHING) OF VOMITUS INTO THE LUNGS MUST BE AVOIDED AS EVEN SMALL QUANTITIES MAY RESULT IN ASPIRATION PNEUMONITIS.

SIGNS AND SYMPTOMS

IRRITATION AS NOTED ABOVE. EARLY TO MODERATE CNS (CENTRAL NERVOUS SYSTEM) DEPRESSION MAY BE EVIDENCED BY GIDDINESS, HEADACHE, DIZZINESS AND NAUSEA; IN EXTREME CASES, UNCONCIOUSNESS AND DEATH MAY OCCUR. ASPIRATION PNEUMONITIS MAY BE EVIDENCED BY COUGHING, LABORED BREATHING AND CYANOSIS (BLUISH SKIN); IN SEVERE CASES DEATH MAY OCCUR.

AGGRAVATED MEDICAL CONDITIONS

PREEXISTING EYE, SKIN AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT.

SEE SECTION VI FOR SUPPLEMENTAL INFORMATION.

SECTION IV OCCUPATIONAL EXPOSURE LIMITS

NO.	OSHA PEL/TWA	PEL/CEILING	TLV/TWA	ACGIH TLV/STEL	OTHER
P	NOT ESTABLISHED				
1*	100 PPM		100 PPM		
A	25 PPM		25 PPM		
C	100 PPM		100 PPM	150 PPM	150 PPM**
D	60 PPM		50 PPM		

*RECOMMEND THAT LIMITS FOR STODDARD SOLVENT BE USED AS A GUIDELINE. ** OSHA PEL/STEL.

SECTION V EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT

FLUSH EYES WITH PLENTY OF WATER FOR 15 MINUTES WHILE HOLDING EYELIDS OPEN. GET MEDICAL ATTENTION.

SKIN CONTACT

REMOVE CONTAMINATED CLOTHING/SHOES. FLUSH SKIN WITH WATER. FOLLOW BY WASHING WITH SOAP AND WATER. IF IRRITATION OCCURS, GET MEDICAL ATTENTION. DO NOT REUSE CLOTHING UNTIL CLEANED.

INHALATION

REMOVE VICTIM TO FRESH AIR AND PROVIDE OXYGEN IF BREATHING IS DIFFICULT. GIVE ARTIFICIAL RESPIRATION IF NOT BREATHING. GET MEDICAL ATTENTION.

INGESTION

DO NOT INDUCE VOMITING. IF VOMITING OCCURS SPONTANEOUSLY, KEEP HEAD BELOW HIPS TO PREVENT ASPIRATION OF LIQUID INTO THE LUNGS. GET MEDICAL ATTENTION.*

NOTE TO PHYSICIAN

*IF MORE THAN 2.0 ML PER KG HAS BEEN INGESTED AND VOMITING HAS NOT OCCURRED, EMESIS SHOULD BE INDUCED WITH SUPERVISION. KEEP VICTIM'S HEAD BELOW HIPS TO PREVENT ASPIRATION. IF SYMPTOMS SUCH AS LOSS OF GAG REFLEX, CONVULSIONS OR UNCONSCIOUSNESS OCCUR BEFORE EMESIS, GASTRIC LAVAGE USING A CUFFED ENDOTRACHEAL TUBE SHOULD BE CONSIDERED.

SECTION VI SUPPLEMENTAL HEALTH INFORMATION

RATS EXPOSED FOR 4 MONTHS TO 1700 PPM OF A SOLVENT SIMILAR TO THIS PRODUCT SHOWED EVIDENCE OF MILD DAMAGE TO THE LIVER, LUNGS AND KIDNEYS. THESE EFFECTS WERE NOT SEEN IN RATS EXPOSED FOR ONE YEAR TO 350 PPM OF ANOTHER SIMILAR SOLVENT. RATS EXPOSED TO VAPORS OF A SIMILAR SOLVENT DURING PREGNANCY SHOWED EMBRYO/FETOTOXICITY AT CONCENTRATIONS PRODUCING MATERNAL TOXICITY.

IN RESPONSE TO A TSCA TEST RULE, SEVERAL STUDIES OF A COMPOUND SIMILAR TO COMPONENT 2 HAVE BEEN COMPLETED. MUTAGENICITY STUDIES AND A RAT INHALATION NEUROTOXICITY STUDY WERE NEGATIVE. IN A MOUSE DEVELOPMENTAL EFFECTS STUDY, REDUCED FETAL BODY WEIGHT WAS SEEN BUT NO TERATOGENICITY. A RAT REPRODUCTIVE EFFECTS STUDY DEMONSTRATED TOXICITY BUT LITTLE EFFECT ON REPRODUCTIVE PARAMETERS.

XYLENE IS NOT KNOWN TO BE MUTAGENIC, CARCINOGENIC OR A SKIN SENSITIZER. HOWEVER, THE AVAILABLE EXPERIMENTAL DATA ARE LIMITED AND INSUFFICIENT TO ASSESS CARCINOGENIC POTENTIAL. XYLENE IS NOT LISTED AS A CARCINOGEN BY NTP, IARC OR OSHA. PROLONGED AND REPEATED EXPOSURES TO HIGH CONCENTRATIONS OF XYLENE HAVE RESULTED IN HEARING LOSS IN LABORATORY RATS. LABORATORY ANIMALS EXPOSED BY VARIOUS ROUTES IN HIGH DOSES OF XYLENE HAVE EXHIBITED EFFECTS IN LIVER, KIDNEYS, LUNGS, SPLEEN, HEART, BLOOD AND ADRENALS. RESULTS OF DEVELOPMENTAL TOXICITY STUDIES WITH LAB ANIMALS INDICATE XYLENE MAY INDUCE EMBRYOLETHAL, EMBRYOTOXIC OR TERATOGENIC EFFECTS. THESE STUDIES WERE GENERALLY LIMITED AND MOST OF THE EFFECTS MAY HAVE BEEN SECONDARY TO MATERNAL TOXICITY. LIMITED HUMAN STUDIES ADDRESSING THE SAME EFFECTS ARE NOT CONCLUSIVE.

SECTION VII**PHYSICAL DATA**

BOILING POINT: 322-388 (DEG F)	SPECIFIC GRAVITY: 0.85 (H2O=1)	VAPOR PRESSURE: <5.2 @ (MM HG) 100 DEG. F
MELTING POINT: NOT AVAILABLE (DEG F)	SOLUBILITY: NEGLIGIBLE (IN WATER)	VAPOR DENSITY: 4.4* (AIR=1)
EVAPORATION RATE (N-BUTYL ACETATE = 1): <0.1*		*ESTIMATED

APPEARANCE AND ODOR:
LIGHT COLORED LIQUID. HYDROCARBON ODOR.

SECTION VIII**FIRE AND EXPLOSION HAZARDS**

FLASH POINT AND METHOD: 124 DEG. F (TCC)	FLAMMABLE LIMITS /% VOLUME IN AIR LOWER: 1 UPPER: 6
---	--

EXTINGUISHING MEDIA

USE WATER FOG, FOAM, DRY CHEMICAL OR CO2. DO NOT USE A DIRECT STREAM OF WATER. PRODUCT WILL FLOAT AND CAN BE REIGNITED ON SURFACE OF WATER.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS

CAUTION. COMBUSTIBLE. DO NOT ENTER CONFINED FIRE SPACE WITHOUT FULL BUNKER GEAR (HELMET WITH FACE SHIELD, BUNKER COATS, GLOVES AND RUBBER BOOTS), INCLUDING A POSITIVE PRESSURE NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS. COOL FIRE EXPOSED CONTAINERS WITH WATER.

UNUSUAL FIRE AND EXPLOSION HAZARDS

CONTAINERS EXPOSED TO INTENSE HEAT FROM FIRES SHOULD BE COOLED WITH WATER TO PREVENT VAPOR PRESSURE BUILDUP WHICH COULD RESULT IN CONTAINER RUPTURE. CONTAINER AREAS EXPOSED TO DIRECT FLAME CONTACT SHOULD BE COOLED WITH LARGE QUANTITIES OF WATER AS NEEDED TO PREVENT WEAKENING OF CONTAINER STRUCTURE.

SECTION IX**REACTIVITY**

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS AND MATERIALS TO AVOID:

AVOID HEAT, FLAME AND CONTACT WITH STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS

CARBON MONOXIDE AND UNIDENTIFIED ORGANIC COMPOUNDS MAY BE FORMED DURING COMBUSTION.

SECTION X**EMPLOYEE PROTECTION**
-----**RESPIRATORY PROTECTION**

AVOID PROLONGED OR REPEATED BREATHING OF VAPORS. IF EXPOSURE MAY OR DOES EXCEED OCCUPATIONAL EXPOSURE LIMITS (SEC. IV) USE A NIOSH-APPROVED RESPIRATOR TO PREVENT OVEREXPOSURE. IN ACCORD WITH 29 CFR 1910.134 USE EITHER AN ATMOSPHERE-SUPPLYING RESPIRATOR OR AN AIR-PURIFYING RESPIRATOR FOR ORGANIC VAPORS.

PROTECTIVE CLOTHING

AVOID CONTACT WITH EYES. WEAR SAFETY GLASSES OR GOGGLES AS APPROPRIATE. AVOID PROLONGED OR REPEATED CONTACT WITH SKIN. WEAR GLOVES AND OTHER CLOTHING AS REQUIRED TO MINIMIZE CONTACT.

ADDITIONAL PROTECTIVE MEASURES

USE EXPLOSION-PROOF VENTILATION AS REQUIRED TO CONTROL VAPOR CONCENTRATIONS. AIR-DRY CONTAMINATED CLOTHING IN A WELL VENTILATED AREA, THEN LAUNDER BEFORE REUSING.

SECTION XI**ENVIRONMENTAL PROTECTION**
-----**SPILL OR LEAK PROCEDURES**

CAUTION. COMBUSTIBLE. *** LARGE SPILLS *** ELIMINATE POTENTIAL SOURCES OF IGNITION. WEAR APPROPRIATE RESPIRATOR AND OTHER PROTECTIVE CLOTHING. SHUT OFF SOURCE OF LEAK ONLY IF SAFE TO DO SO. DIKE AND CONTAIN. REMOVE WITH VACUUM TRUCKS OR PUMP TO STORAGE/SALVAGE VESSELS. SOAK UP RESIDUE WITH AN ABSORBENT SUCH AS CLAY, SAND, OR OTHER SUITABLE MATERIAL; PLACE IN NON-LEAKING CONTAINERS AND SEAL TIGHTLY FOR PROPER DISPOSAL. FLUSH AREA WITH WATER TO REMOVE TRACE RESIDUE; DISPOSE OF FLUSH SOLUTION AS ABOVE. *** SMALL SPILLS *** TAKE UP WITH AN ABSORBENT MATERIAL AND PLACE IN NON-LEAKING CONTAINERS FOR PROPER DISPOSAL.

SECTION XII**SPECIAL PRECAUTIONS**

KEEP LIQUID AND VAPOR AWAY FROM HEAT, SPARKS AND FLAME. SURFACES THAT ARE SUFFICIENTLY HOT MAY IGNITE EVEN LIQUID PRODUCT IN THE ABSENCE OF SPARKS OR FLAME. EXTINGUISH PILOT LIGHTS, CIGARETTES AND TURN OFF OTHER SOURCES OF IGNITION PRIOR TO USE AND UNTIL ALL VAPORS ARE GONE. VAPORS MAY ACCUMULATE AND TRAVEL TO IGNITION SOURCES DISTANT FROM THE HANDLING SITE; FLASH-FIRE CAN RESULT. KEEP CONTAINERS CLOSED WHEN NOT IN USE. USE WITH ADEQUATE VENTILATION.

CONTAINERS, EVEN THOSE THAT HAVE BEEN EMPTIED, CAN CONTAIN EXPLOSIVE VAPORS. DO NOT CUT, DRILL, GRIND, WELD OR PERFORM SIMILAR OPERATIONS ON OR NEAR CONTAINERS. DO NOT PRESSURIZE DRUM CONTAINERS TO EMPTY THEM.

STATIC ELECTRICITY MAY ACCUMULATE AND CREATE A FIRE HAZARD. GROUND FIXED EQUIPMENT. BOND AND GROUND TRANSFER CONTAINERS AND EQUIPMENT.

WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING, APPLYING COSMETICS, OR USING TOILET FACILITIES. LAUNDER CONTAMINATED CLOTHING BEFORE REUSE. AIR-DRY CONTAMINATED CLOTHING IN A WELL VENTILATED AREA BEFORE LAUNDERING.

SECTION XIII**TRANSPORTATION REQUIREMENTS**
-----**DEPARTMENT OF TRANSPORTATION CLASSIFICATION:**

CLASS 3 (FLAMMABLE LIQUIDS), III

D.O.T. PROPER SHIPPING NAME:

PETROLEUM DISTILLATES, N.O.S. (PETROLEUM NAPHTHA)

OTHER REQUIREMENTS:

UN1268, GUIDE 27. THIS PRODUCT CONTAINS TRIMETHYLBENZENES (51%) WHICH ARE MARINE POLLUTANTS UNDER 49 CFR 172.101, APPENDIX B.

SECTION XIV

OTHER REGULATORY CONTROLS

THE COMPONENTS OF THIS PRODUCT ARE LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES.

PROTECTION OF STRATOSPHERIC OZONE (PURSUANT TO SECTION 611 OF THE CLEAN AIR ACT AMENDMENTS OF 1990): PER 40 CFR PART 82, THIS PRODUCT DOES NOT CONTAIN NOR WAS IT DIRECTLY MANUFACTURED WITH ANY CLASS I OR CLASS II OZONE DEPLETING SUBSTANCES.

IN ACCORDANCE WITH SARA TITLE III, SECTION 313, THE ENVIRONMENTAL DATA SHEET (EDS) SHOULD ALWAYS BE COPIED AND SENT WITH THE MSDS.

SECTION XV

STATE REGULATORY INFORMATION

THE FOLLOWING CHEMICALS ARE SPECIFICALLY LISTED BY INDIVIDUAL STATES; OTHER PRODUCT SPECIFIC HEALTH AND SAFETY DATA IN OTHER SECTIONS OF THE MSDS MAY ALSO BE APPLICABLE FOR STATE REQUIREMENTS. FOR DETAILS ON YOUR REGULATORY REQUIREMENTS YOU SHOULD CONTACT THE APPROPRIATE AGENCY IN YOUR STATE.

STATE LISTED COMPONENT	PERCENT	STATE CODE
TRIMETHYLBENZENE, 1,2,4- (CAS NO: 95-63-6)	<32.0	CA, MA, PA
CUMENE (CAS NO: 98-82-8)	<2.0	CA, FL, IL, MA, ME, MN, NJ, PA, RI
XYLENE (CAS NO: 1330-20-7)	3V	CA, FL, IL, MA, ME, MN, NJ, PA, RI

CA = CALIFORNIA HAZ. SUBST. LIST; CA65C, CA65R, CA65C/R = CALIFORNIA SAFE DRINKING WATER AND TOXICS ENFORCEMENT ACT OF 1986 OR PROPOSITION 65 LIST; CT = CONNECTICUT TOXIC. SUBST. LIST; FL = FLORIDA SUBST. LIST; IL = ILLINOIS TOX. SUBST. LIST; LA = LOUISIANA HAZ. SUBST. LIST; MA = MASSACHUSETTS SUBST. LIST; ME = MAINE HAZ. SUBST. LIST; MN = MINNESOTA HAZ. SUBST. LIST; NJ = NEW JERSEY HAZ. SUBST. LIST; PA = PENNSYLVANIA HAZ. SUBST. LIST; RI = RHODE ISLAND HAZ. SUBST. LIST.

SECTION XVI

SPECIAL NOTES

THIS MSDS REVISION HAS CHANGES IN SECTIONS II-A, IV, XIII AND EDS.

THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.

DATE PREPARED: APRIL 21, 1995

J. C. WILLETT

BE SAFE

READ OUR PRODUCT
SAFETY INFORMATION ...AND PASS IT ON
(PRODUCT LIABILITY LAW
REQUIRES IT)

SHELL OIL COMPANY
PRODUCT SAFETY AND COMPLIANCE
P. O. BOX 4320
HOUSTON, TX 77210