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SAFETY DATA SHEET

SECTION 1. CHEMICAL IDENTIFICATION

CATALOG #: 36042
NAME: 1,3-Butadiene solution, 20 wt. % in toluene
SYNONYMS:
24 HOUR EMERGENCY TELEPHONE: (800) 535-5053(USA)
352-323-3500 (INTERNATIONAL)
TO REQUEST AN MSDS: (800) 869-9290
CUSTOMER SERVICE: (630) 766-2112

SECTION 2. HAZARDS IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

GHS CLASSIFICATION IN ACCORDANCE WITH 29 CFR 1910 (OSHA HCS)

FLAMMABLE LIQUIDS (CATEGORY 2), H225
SKIN IRRITATION (CATEGORY 2), H315
GERM CELL MUTAGENICITY (CATEGORY 1B), H340
CARCINOGENICITY (CATEGORY 1A), H350
REPRODUCTIVE TOXICITY (CATEGORY 2), H361
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (CATEGORY 3), CENTRAL NERVOUS SYSTEM, H336
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE (CATEGORY 2), CENTRAL NERVOUS SYSTEM, H373

ASPIRATION HAZARD (CATEGORY 1), H304
SHORT-TERM (ACUTE) AQUATIC HAZARD (CATEGORY 2), H401
LONG-TERM (CHRONIC) AQUATIC HAZARD (CATEGORY 3), H412

FOR THE FULL TEXT OF THE H-STATEMENTS MENTIONED IN THIS SECTION, SEE SECTION 16.

**GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS
PICTOGRAM**



SIGNAL WORD DANGER

HAZARD STATEMENT(S)

H225	HIGHLY FLAMMABLE LIQUID AND VAPOUR.
H304	MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS.
H315	CAUSES SKIN IRRITATION.
H336	MAY CAUSE DROWSINESS OR DIZZINESS.
H340	MAY CAUSE GENETIC DEFECTS.
H350	MAY CAUSE CANCER.
H361	SUSPECTED OF DAMAGING FERTILITY OR THE UNBORN CHILD.
H373	MAY CAUSE DAMAGE TO ORGANS (CENTRAL NERVOUS SYSTEM) THROUGH PROLONGED OR REPEATED EXPOSURE.
H401	TOXIC TO AQUATIC LIFE.
H412	HARMFUL TO AQUATIC LIFE WITH LONG LASTING EFFECTS.

PRECAUTIONARY STATEMENT(S)

P201	OBTAIN SPECIAL INSTRUCTIONS BEFORE USE.
P202	DO NOT HANDLE UNTIL ALL SAFETY PRECAUTIONS HAVE BEEN READ AND UNDERSTOOD.
P210	KEEP AWAY FROM HEAT/SPARKS/OPEN FLAMES/HOT SURFACES. - NO SMOKING.
P233	KEEP CONTAINER TIGHTLY CLOSED.
P240	GROUND/BOND CONTAINER AND RECEIVING EQUIPMENT.
P241	USE EXPLOSION-PROOF ELECTRICAL/ VENTILATING/ LIGHTING/ EQUIPMENT.
P242	USE ONLY NON-SPARKING TOOLS.
P243	TAKE PRECAUTIONARY MEASURES AGAINST STATIC DISCHARGE.
P260	DO NOT BREATHE DUST/ FUME/ GAS/ MIST/ VAPOURS/ SPRAY.
P264	WASH SKIN THOROUGHLY AFTER HANDLING.
P271	USE ONLY OUTDOORS OR IN A WELL-VENTILATED AREA.
P273	AVOID RELEASE TO THE ENVIRONMENT.
P280	WEAR PROTECTIVE GLOVES/ PROTECTIVE CLOTHING/ EYE PROTECTION/ FACE PROTECTION.
P301 + P310	IF SWALLOWED: IMMEDIATELY CALL A POISON CENTER/DOCTOR.
P303 + P361 + P353	IF ON SKIN (OR HAIR): TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING. RINSE SKIN WITH WATER/SHOWER.
P304 + P340 + P312	IF INHALED: REMOVE PERSON TO FRESH AIR AND KEEP COMFORTABLE FOR BREATHING. CALL A POISON CENTER/DOCTOR IF YOU FEEL UNWELL.
P308 + P313	IF EXPOSED OR CONCERNED: GET MEDICAL ADVICE/ ATTENTION.
P331	DO NOT INDUCE VOMITING.
P332 + P313	IF SKIN IRRITATION OCCURS: GET MEDICAL ADVICE/ ATTENTION.
P362	TAKE OFF CONTAMINATED CLOTHING AND WASH BEFORE REUSE.
P370 + P378	IN CASE OF FIRE: USE DRY SAND, DRY CHEMICAL OR ALCOHOL-RESISTANT FOAM TO EXTINGUISH.

P403 + P233 STORE IN A WELL-VENTILATED PLACE. KEEP CONTAINER TIGHTLY CLOSED.

P403 + P235 STORE IN A WELL-VENTILATED PLACE. KEEP COOL.

P405 STORE LOCKED UP.

P501 DISPOSE OF CONTENTS/ CONTAINER TO AN APPROVED WASTE DISPOSAL PLANT.

HAZARDS NOT OTHERWISE CLASSIFIED (HNOC) OR NOT COVERED BY GHS LACHRYMATOR.
MAY FORM EXPLOSIVE PEROXIDES.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

MF: C₄H₆

MW: 54.09

CAS-NO. 106-99-0

PURITY: ≥ 99% (GC)

HAZARDOUS COMPONENTS

COMPONENT	CLASSIFICATION	CONCENTRATION
TOLUENE		
	FLAM. LIQ. 2; SKIN IRRIT. 2; REPR. 2; STOT SE 3; STOT RE 2; ASP. TOX. 1; AQUATIC ACUTE 2; AQUATIC CHRONIC 3; H225, H315, H361, H336, H373, H304, H401, H412 CONCENTRATION LIMITS: 20 %: STOT SE 3, H336;	>= 70 - < 90 %
1,3-BUTADIENE		
	FLAM. GAS 1; PRESS. GAS LIQUEFIED GAS; MUTA. 1B; CARC. 1A; H220, H280, H340, H350	>= 20 - < 30 %

FOR THE FULL TEXT OF THE H-STATEMENTS MENTIONED IN THIS SECTION, SEE SECTION 16.

SECTION 4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES

GENERAL ADVICE CONSULT A PHYSICIAN. SHOW THIS SAFETY DATA SHEET TO THE DOCTOR IN ATTENDANCE. MOVE OUT OF DANGEROUS AREA.

IF INHALED	IF BREATHED IN, MOVE PERSON INTO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. CONSULT A PHYSICIAN.
IN CASE OF SKIN CONTACT	WASH OFF WITH SOAP AND PLENTY OF WATER. CONSULT A PHYSICIAN.
IN CASE OF EYE CONTACT	FLUSH EYES WITH WATER AS A PRECAUTION.
IF SWALLOWED	DO NOT INDUCE VOMITING. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. RINSE MOUTH WITH WATER. CONSULT A PHYSICIAN.
MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED	THE MOST IMPORTANT KNOWN SYMPTOMS AND EFFECTS ARE DESCRIBED IN THE LABELLING (SEE SECTION 2.2) AND/OR IN SECTION 11.
INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED	NO DATA AVAILABLE

SECTION 5. FIRE AND EXPLOSION DATA

EXTINGUISHING MEDIA

SUITABLE EXTINGUISHING MEDIA

SUITABLE EXTINGUISHING MEDIA
DRY POWDER DRY SAND

UNSUITABLE EXTINGUISHING MEDIA
DO NOT USE WATER JET.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

CARBON OXIDES

ADVICE FOR FIREFIGHTERS

WEAR SELF-CONTAINED BREATHING APPARATUS FOR FIREFIGHTING IF NECESSARY.

FURTHER INFORMATION

USE WATER SPRAY TO COOL UNOPENED CONTAINERS.

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT

USE PERSONAL PROTECTIVE EQUIPMENT. AVOID BREATHING VAPOURS, MIST OR GAS. ENSURE ADEQUATE VENTILATION. REMOVE ALL SOURCES OF IGNITION. EVACUATE PERSONNEL TO SAFE AREAS. BEWARE OF

AND EMERGENCY PROCEDURES	VAPOURS ACCUMULATING TO FORM EXPLOSIVE CONCENTRATIONS. VAPOURS CAN ACCUMULATE IN LOW AREAS. FOR PERSONAL PROTECTION SEE SECTION 8.
ENVIRONMENTAL PRECAUTIONS	PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO NOT LET PRODUCT ENTER DRAINS. DISCHARGE INTO THE ENVIRONMENT MUST BE AVOIDED.
METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP	CONTAIN SPILLAGE, AND THEN COLLECT WITH NON-COMBUSTIBLE ABSORBENT MATERIAL, (E.G. SAND, EARTH, DIATOMACEOUS EARTH, VERMICULITE) AND PLACE IN CONTAINER FOR DISPOSAL ACCORDING TO LOCAL / NATIONAL REGULATIONS (SEE SECTION 13).
REFERENCE TO OTHER SECTIONS	FOR DISPOSAL SEE SECTION 13.

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING	AVOID CONTACT WITH SKIN AND EYES. AVOID INHALATION OF VAPOUR OR MIST. USE EXPLOSION-PROOF EQUIPMENT.KEEP AWAY FROM SOURCES OF IGNITION - NO SMOKING.TAKE MEASURES TO PREVENT THE BUILD UP OF ELECTROSTATIC CHARGE. FOR PRECAUTIONS SEE SECTION 2.2.
CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES	KEEP CONTAINER TIGHTLY CLOSED IN A DRY AND WELL-VENTILATED PLACE. CONTAINERS WHICH ARE OPENED MUST BE CAREFULLY RESEALED AND KEPT UPRIGHT TO PREVENT LEAKAGE. STORE UNDER INERT GAS. OVER TIME, PRESSURE MAY INCREASE CAUSING CONTAINERS TO BURST MOISTURE SENSITIVE. HEAT SENSITIVE. Store at 2 - 8 °C
SPECIFIC END USE(S)	APART FROM THE USES MENTIONED IN SECTION 1.2 NO OTHER SPECIFIC USES ARE STIPULATED.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTROL PARAMETERS

COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

COMPONENT	CAS-NO.	VALUE	CONTROL PARAMETERS	BASIS

TOLUENE	108-88-3	TWA	100 PPM 375 MG/M3	USA. OSHA - TABLE Z-1 LIMITS FOR AIR CONTAMINANTS - 1910.1000
		STEL	150 PPM 560 MG/M3	USA. OSHA - TABLE Z-1 LIMITS FOR AIR CONTAMINANTS - 1910.1000
		TWA	200 PPM	USA. OCCUPATIONAL EXPOSURE LIMITS (OSHA) - TABLE Z-2
	REMARKS	Z37.12-1967		
		CEIL	300 PPM	USA. OCCUPATIONAL EXPOSURE LIMITS (OSHA) - TABLE Z-2
		Z37.12-1967		
		PEAK	500 PPM	USA. OCCUPATIONAL EXPOSURE LIMITS (OSHA) - TABLE Z-2
		Z37.12-1967		
		TWA	20 PPM	USA. ACGIH THRESHOLD LIMIT VALUES (TLV)
		VISUAL IMPAIRMENT FEMALE REPRODUCTIVE PREGNANCY LOSS 2018 ADOPTION SUBSTANCES FOR WHICH THERE IS A BIOLOGICAL EXPOSURE INDEX OR INDICES NOT CLASSIFIABLE AS A HUMAN CARCINOGEN		
		TWA	100 PPM 375 MG/M3	USA. NIOSH RECOMMENDED EXPOSURE LIMITS
		ST	150 PPM 560 MG/M3	USA. NIOSH RECOMMENDED EXPOSURE LIMITS
1,3-Butadiene solution, 20 wt. % in toluene	106-99-0	TWA	2 PPM	USA. ACGIH THRESHOLD LIMIT VALUES (TLV)
		CANCER SUSPECTED HUMAN CARCINOGEN		
		TWA	1 PPM	USA. OCCUPATIONAL EXPOSURE LIMITS (OSHA) - TABLE Z-1 LIMITS FOR AIR CONTAMINANTS
		SUBSTANCE LISTED; FOR MORE INFORMATION SEE OSHA DOCUMENT 29 CFR 1910.1051; 29 CFR 1910.19(1)		
		STEL	5 PPM	USA. OCCUPATIONAL EXPOSURE LIMITS (OSHA) - TABLE Z-1 LIMITS FOR AIR CONTAMINANTS
		SUBSTANCE LISTED; FOR MORE INFORMATION SEE OSHA DOCUMENT 29 CFR 1910.1051; 29 CFR 1910.19(1) SEE 1910.1051		
		POTENTIAL OCCUPATIONAL CARCINOGEN SEE APPENDIX A		
		PEL	1 PPM	OSHA SPECIFICALLY REGULATED CHEMICALS/CARCINOGENS

		1910.1051		<p>THIS SECTION APPLIES TO ALL OCCUPATIONAL EXPOSURES TO 1,3- BUTADIENE (BD), CHEMICAL ABSTRACTS SERVICE REGISTRY NO. 106-99-0, EXCEPT AS PROVIDED IN PARAGRAPH (A)(2) OF THIS SECTION. EXCEPT FOR THE RECORDKEEPING PROVISIONS IN PARAGRAPH (M)(1) OF THIS SECTION, THIS SECTION DOES NOT APPLY TO THE PROCESSING, USE, OR HANDLING OF PRODUCTS CONTAINING BD OR TO OTHER WORK OPERATIONS AND STREAMS IN WHICH BD IS PRESENT WHERE OBJECTIVE DATA ARE REASONABLY RELIED UPON THAT DEMONSTRATE THE WORK OPERATION OR THE PRODUCT OR THE GROUP OF PRODUCTS OR OPERATIONS TO WHICH IT BELONGS MAY NOT REASONABLY BE FORESEEN TO RELEASE BD IN AIRBORNE CONCENTRATIONS AT OR ABOVE THE ACTION LEVEL OR IN EXCESS OF THE STEL UNDER THE EXPECTED CONDITIONS OF PROCESSING, USE, OR HANDLING THAT WILL CAUSE THE GREATEST POSSIBLE RELEASE OR IN ANY PLAUSIBLE ACCIDENT. THIS SECTION ALSO DOES NOT APPLY TO WORK OPERATIONS, PRODUCTS OR STREAMS WHERE THE ONLY EXPOSURE TO BD IS FROM LIQUID MIXTURES CONTAINING 0.1% OR LESS OF BD BY VOLUME OR THE VAPORS RELEASED FROM SUCH LIQUIDS, UNLESS OBJECTIVE DATA BECOME AVAILABLE THAT SHOW THAT AIRBORNE CONCENTRATIONS GENERATED BY SUCH MIXTURES CAN EXCEED THE ACTION LEVEL OR STEL UNDER REASONABLY PREDICTABLE CONDITIONS OF PROCESSING, USE OR HANDLING THAT WILL CAUSE THE GREATEST POSSIBLE RELEASE. EXCEPT FOR LABELING REQUIREMENTS AND REQUIREMENTS FOR EMERGENCY RESPONSE, THIS SECTION DOES NOT APPLY TO THE STORAGE, TRANSPORTATION, DISTRIBUTION OR SALE OF BD OR LIQUID MIXTURES IN INTACT CONTAINERS OR IN TRANSPORTATION PIPELINES SEALED IN SUCH A MANNER AS TO FULLY CONTAIN BD VAPORS OR LIQUID. WHERE PRODUCTS OR PROCESSES CONTAINING BD ARE EXEMPTED UNDER PARAGRAPH (A)(2) OF THIS SECTION, THE EMPLOYER SHALL MAINTAIN RECORDS OF THE OBJECTIVE DATA SUPPORTING THAT EXEMPTION AND THE BASIS FOR THE EMPLOYER'S RELIANCE ON THE DATA, AS PROVIDED IN PARAGRAPH (M)(1) OF THIS SECTION</p> <p>1,3-BUTADIENE MEANS AN ORGANIC COMPOUND WITH CHEMICAL FORMULA $CH_2=CH-CH=CH_2$ THAT HAS A MOLECULAR WEIGHT OF APPROXIMATELY 54.15 G/MOLE OSHA SPECIFICALLY REGULATED CARCINOGEN</p>
		STEL	5 PPM	OSHA SPECIFICALLY REGULATED CHEMICALS/CARCINOGENS

		<p>1910.1051 THIS SECTION APPLIES TO ALL OCCUPATIONAL EXPOSURES TO 1,3- BUTADIENE (BD), CHEMICAL ABSTRACTS SERVICE REGISTRY NO. 106-99-0, EXCEPT AS PROVIDED IN PARAGRAPH (A) (2) OF THIS SECTION. EXCEPT FOR THE RECORDKEEPING PROVISIONS IN PARAGRAPH (M)(1) OF THIS SECTION, THIS SECTION DOES NOT APPLY TO THE PROCESSING, USE, OR HANDLING OF PRODUCTS CONTAINING BD OR TO OTHER WORK OPERATIONS AND STREAMS IN WHICH BD IS PRESENT WHERE OBJECTIVE DATA ARE REASONABLY RELIED UPON THAT DEMONSTRATE THE WORK OPERATION OR THE PRODUCT OR THE GROUP OF PRODUCTS OR OPERATIONS TO WHICH IT BELONGS MAY NOT REASONABLY BE FORESEEN TO RELEASE BD IN AIRBORNE CONCENTRATIONS AT OR ABOVE THE ACTION LEVEL OR IN EXCESS OF THE STEL UNDER THE EXPECTED CONDITIONS OF PROCESSING, USE, OR HANDLING THAT WILL CAUSE THE GREATEST POSSIBLE RELEASE OR IN ANY PLAUSIBLE ACCIDENT. THIS SECTION ALSO DOES NOT APPLY TO WORK OPERATIONS, PRODUCTS OR STREAMS WHERE THE ONLY EXPOSURE TO BD IS FROM LIQUID MIXTURES CONTAINING 0.1% OR LESS OF BD BY VOLUME OR THE VAPORS RELEASED FROM SUCH LIQUIDS, UNLESS OBJECTIVE DATA BECOME AVAILABLE THAT SHOW THAT AIRBORNE CONCENTRATIONS GENERATED BY SUCH MIXTURES CAN EXCEED THE ACTION LEVEL OR STEL UNDER REASONABLY PREDICTABLE CONDITIONS OF PROCESSING, USE OR HANDLING THAT WILL CAUSE THE GREATEST POSSIBLE RELEASE. EXCEPT FOR LABELING REQUIREMENTS AND REQUIREMENTS FOR EMERGENCY RESPONSE, THIS SECTION DOES NOT APPLY TO THE STORAGE, TRANSPORTATION, DISTRIBUTION OR SALE OF BD OR LIQUID MIXTURES IN INTACT CONTAINERS OR IN TRANSPORTATION PIPELINES SEALED IN SUCH A MANNER AS TO FULLY CONTAIN BD VAPORS OR LIQUID. WHERE PRODUCTS OR PROCESSES CONTAINING BD ARE EXEMPTED UNDER PARAGRAPH (A)(2) OF THIS SECTION, THE EMPLOYER SHALL MAINTAIN RECORDS OF THE OBJECTIVE DATA SUPPORTING THAT EXEMPTION AND THE BASIS FOR THE EMPLOYER'S RELIANCE ON THE DATA, AS PROVIDED IN PARAGRAPH (M)(1) OF THIS SECTION 1,3-BUTADIENE MEANS AN ORGANIC COMPOUND WITH CHEMICAL FORMULA $CH_2=CH-CH=CH_2$ THAT HAS A MOLECULAR WEIGHT OF APPROXIMATELY 54.15 G/MOLE OSHA SPECIFICALLY REGULATED CARCINOGEN</p>		
		PEL	1 PPM 2.2 MG/M3	CALIFORNIA PERMISSIBLE EXPOSURE LIMITS FOR CHEMICAL CONTAMINANTS
		SEE SECTION 5201		
		STEL	5 PPM 11 MG/M3	CALIFORNIA PERMISSIBLE EXPOSURE LIMITS FOR CHEMICAL CONTAMINANTS
		SEE SECTION 5201		

BIOLOGICAL OCCUPATIONAL EXPOSURE LIMITS

COMPONENT	CAS-NO.	PARAMETERS	VALUE	BIOLOGICAL SPECIMEN	BASIS
TOLUENE	108-88-3	TOLUENE	0.02 MG/L	IN BLOOD	ACGIH - BIOLOGICAL EXPOSURE INDICES (BEI)
	REMARKS	PRIOR TO LAST SHIFT OF WORKWEEK			
		TOLUENE	0.03 MG/L	URINE	ACGIH - BIOLOGICAL EXPOSURE INDICES (BEI)
		END OF SHIFT (AS SOON AS POSSIBLE AFTER EXPOSURE CEASES)			
		O-CRESOL	0.3MG/G CREATININ E	URINE	ACGIH - BIOLOGICAL EXPOSURE INDICES (BEI)
		END OF SHIFT (AS SOON AS POSSIBLE AFTER EXPOSURE CEASES)			
1,3-Butadiene solution, 20 wt. % in toluene	106-99-0	1,2 DIHYDROXY4-(NACETYLCYSTEINYL)-BUTANE	2.5 MG/L	URINE	ACGIH - BIOLOGICAL EXPOSURE INDICES (BEI)
		END OF SHIFT (AS SOON AS POSSIBLE AFTER EXPOSURE CEASES)			
		MIXTURE OF N-1 AND N2(HYDROXYBUTENYL)VALINE	2.5PICOMOLES PER GRAM HEMOGLOBIN	HEMOGLOBIN (HB) ADDUCTS IN BLOOD	ACGIH - BIOLOGICAL EXPOSURE INDICES (BEI)
		NOT CRITICAL			

EXPOSURE CONTROLS

APPROPRIATE ENGINEERING CONTROLS

HANDLE IN ACCORDANCE WITH GOOD INDUSTRIAL HYGIENE AND SAFETY PRACTICE. WASH HANDS BEFORE BREAKS AND AT THE END OF WORKDAY.

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION

FACE SHIELD AND SAFETY GLASSES USE EQUIPMENT FOR EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR EN 166(EU).

SKIN PROTECTION HANDLE WITH GLOVES. GLOVES MUST BE INSPECTED PRIOR TO USE. USE PROPER GLOVE REMOVAL TECHNIQUE (WITHOUT TOUCHING GLOVE'S OUTER SURFACE) TO AVOID SKIN CONTACT WITH THIS PRODUCT. DISPOSE OF CONTAMINATED GLOVES AFTER USE IN ACCORDANCE WITH APPLICABLE LAWS AND GOOD LABORATORY PRACTICES. WASH AND DRY HANDS.

FULL CONTACT
MATERIAL: FLUORINATED RUBBER
MINIMUM LAYER THICKNESS: 0.7 MM
BREAK THROUGH TIME: 480 MIN
MATERIAL TESTED: VITOJECT (KCL 890, SIZE M)

SPLASH CONTACT
MATERIAL: FLUORINATED RUBBER
MINIMUM LAYER THICKNESS: 0.7 MM
BREAK THROUGH TIME: 480 MIN
MATERIAL TESTED: VITOJECT (KCL 890, SIZE M)

IF USED IN SOLUTION, OR MIXED WITH OTHER SUBSTANCES, AND UNDER CONDITIONS WHICH DIFFER FROM EN 374, CONTACT THE SUPPLIER OF THE CE APPROVED GLOVES. THIS RECOMMENDATION IS ADVISORY ONLY AND MUST BE EVALUATED BY AN INDUSTRIAL HYGIENIST AND SAFETY OFFICER FAMILIAR WITH THE SPECIFIC SITUATION OF ANTICIPATED USE BY OUR CUSTOMERS. IT SHOULD NOT BE CONSTRUED AS OFFERING AN APPROVAL FOR ANY SPECIFIC USE SCENARIO.

BODY PROTECTION COMPLETE SUIT PROTECTING AGAINST CHEMICALS, FLAME RETARDANT ANTISTATIC PROTECTIVE CLOTHING, THE TYPE OF PROTECTIVE EQUIPMENT MUST BE SELECTED ACCORDING TO THE CONCENTRATION AND AMOUNT OF THE DANGEROUS SUBSTANCE AT THE SPECIFIC WORKPLACE.

RESPIRATORY PROTECTION WHERE RISK ASSESSMENT SHOWS AIR-PURIFYING RESPIRATORS ARE APPROPRIATE USE A FULLFACE RESPIRATOR WITH MULTI-PURPOSE COMBINATION (US) OR TYPE ABEK (EN 14387) RESPIRATOR CARTRIDGES AS A BACKUP TO ENGINEERING CONTROLS. IF THE RESPIRATOR IS THE SOLE MEANS OF PROTECTION, USE A FULL-FACE SUPPLIED AIR RESPIRATOR. USE RESPIRATORS AND COMPONENTS TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR CEN (EU).

CONTROL OF ENVIRONMENTAL EXPOSURE PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO NOT LET PRODUCT ENTER DRAINS. DISCHARGE INTO THE ENVIRONMENT MUST BE AVOIDED.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Colorless liquid
ODOUR	AROMATIC

ODOUR THRESHOLD	NO DATA AVAILABLE
PH	NO DATA AVAILABLE
MELTING POINT/FREEZING POINT	
BOILING POINT	
FLASH POINT	-76 °C
EVAPORATION RATE	NO DATA AVAILABLE
FLAMMABILITY (SOLID, GAS)	NO DATA AVAILABLE
UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS	NO DATA AVAILABLE
VAPOUR PRESSURE	NO DATA AVAILABLE
VAPOUR DENSITY	NO DATA AVAILABLE
RELATIVE DENSITY	0.81
WATER SOLUBILITY	NO DATA AVAILABLE
PARTITION COEFFICIENT: N- OCTANOL/WATER	NO DATA AVAILABLE
AUTO-IGNITION TEMPERATURE	NO DATA AVAILABLE
DECOMPOSITION TEMPERATURE	NO DATA AVAILABLE
VISCOSITY	NO DATA AVAILABLE
EXPLOSIVE PROPERTIES	NO DATA AVAILABLE
OXIDIZING PROPERTIES	NO DATA AVAILABLE
OTHER SAFETY INFORMATION	NO DATA AVAILABLE

SECTION 10. STABILITY AND REACTIVITY

REACTIVITY	NO DATA AVAILABLE
CHEMICAL STABILITY	STABLE UNDER RECOMMENDED STORAGE CONDITIONS.
POSSIBILITY OF HAZARDOUS REACTIONS	VAPOURS MAY FORM EXPLOSIVE MIXTURE WITH AIR.
CONDITIONS TO AVOID	HEAT, FLAMES AND SPARKS.
INCOMPATIBLE MATERIALS	COPPER
HAZARDOUS DECOMPOSITION PRODUCTS	HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS. - CARBON OXIDES OTHER DECOMPOSITION PRODUCTS - NO DATA AVAILABLE IN THE EVENT OF FIRE: SEE SECTION 5

SECTION 11. TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

ACUTE TOXICITY	LD50 ORAL - RAT - MALE - 5,580 MG/KG (TOLUENE) (TESTED ACCORDING TO DIRECTIVE 92/69/EEC.) LD50 ORAL - RAT - 5,480 MG/KG (1,3-BUTADIENE) LC50 INHALATION - RAT - MALE AND FEMALE - 4 H - 25.7 MG/L (TOLUENE) LC50 INHALATION - RAT - 4 H - 285 MG/L (1,3-BUTADIENE) LD50 DERMAL - RABBIT - > 5,000 MG/KG (TOLUENE) REMARKS: (ECHA) NO DATA AVAILABLE
SKIN CORROSION/IRRITATION	SKIN - RABBIT (TOLUENE) RESULT: IRRITATING - 4 H REMARKS: (ECHA)
SERIOUS EYE DAMAGE/EYE IRRITATION	EYES - RABBIT (TOLUENE) RESULT: SLIGHT IRRITATION
RESPIRATORY OR SKIN SENSITISATION	MAXIMISATION TEST - GUINEA PIG (TOLUENE) RESULT: NEGATIVE (REGULATION (EC) NO. 440/2008, ANNEX, B.6)
GERM CELL MUTAGENICITY	IN VIVO TESTS SHOWED MUTAGENIC EFFECTS (1,3- BUTADIENE) IN VITRO MAMMALIAN CELL GENE MUTATION TEST (TOLUENE) MOUSE LYMPHOMA TEST RESULT: NEGATIVE AMES TEST (TOLUENE) S. TYPHIMURIUM RESULT: NEGATIVE (TOLUENE) RAT - BONE MARROW RESULT: NEGATIVE (ECHA)
CARCINOGENICITY	THIS IS OR CONTAINS A COMPONENT THAT HAS BEEN REPORTED TO BE CARCINOGENIC BASED ON ITS IARC, OSHA, ACGIH, NTP, OR EPA CLASSIFICATION. (1,3- BUTADIENE) HUMAN CARCINOGEN. (1,3-BUTADIENE)
IARC:	1 - GROUP 1: CARCINOGENIC TO HUMANS (1,3- BUTADIENE)
NTP:	NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A KNOWN OR ANTICIPATED CARCINOGEN BY NTP.
OSHA:	NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS ON OSHA S LIST OF REGULATED CARCINOGENS.
REPRODUCTIVE TOXICITY	SUSPECTED OF DAMAGING THE UNBORN CHILD. (TOLUENE)

SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE	MAY CAUSE DROWSINESS OR DIZZINESS. - CENTRAL NERVOUS SYSTEM (TOLUENE)
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE. - CENTRAL NERVOUS SYSTEM
ASPIRATION HAZARD	ASPIRATION HAZARD, ASPIRATION MAY CAUSE PULMONARY OEDEMA AND PNEUMONITIS. (TOLUENE)
ADDITIONAL INFORMATION	RTECS: NOT AVAILABLE DROWSINESS, IRRITANT EFFECTS, DIZZINESS, CONVULSIONS, HEADACHE, NAUSEA, VOMITING, CIRCULATORY COLLAPSE, SOMNOLENCE, INEBRIATION, UNCONSCIOUSNESS, RESPIRATORY ARREST, CNS DISORDERS, RESPIRATORY PARALYSIS, DEATH (TOLUENE) TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED. (TOLUENE) CHOLINESTERASE INHIBITORS CAN CAUSE HEAVY SALIVATION AND SECRETION IN THE LUNGS, LACHRYMATION, BLURRED VISION, INVOLUNTARY DEFECATION, DIARRHEA, TREMOR, ATAXIA, SWEATING, HYPOTHERMIA, LOWERED HEART RATE, AND/OR A FALL IN BLOOD PRESSURE AS A RESULT OF THEIR ACTION AT CHOLINERGIC NERVE SITES., NARCOSIS, HEADACHE, NAUSEA, VOMITING, DIZZINESS, DROWSINESS, CONFUSION., WEAKNESS, MUSCLE CRAMPS/SPASMS., CHANGE IN PUPIL SIZE., TREMORS, SEIZURES., INCOORDINATION., CONVULSIONS, COMA (1,3-BUTADIENE) STOMACH - IRREGULARITIES - BASED ON HUMAN EVIDENCE STOMACH - IRREGULARITIES - BASED ON HUMAN EVIDENCE (TOLUENE) STOMACH - IRREGULARITIES - BASED ON HUMAN EVIDENCE (1,3-BUTADIENE)

SECTION 12. ECOLOGICAL INFORMATION

TOXICITY TOXICITY TO FISH	FLOW-THROUGH TEST LC50 - ONCORHYNCHUS KISUTCH (COHO SALMON) - 5.5 MG/L - 96 H (TOLUENE) REMARKS: (ECHA)
TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES	LC50 - OTHER FISH - 71.5 MG/L - 24 H (1,3-BUTADIENE) EC50 - CERIODAPHNIA DUBIA (WATER FLEA) - 3.78 MG/L - 48 H (TOLUENE) (US-EPA)

TOXICITY TO BACTERIA STATIC TEST EC50 - BACTERIA - 84 MG/L - 24 H (TOLUENE)
REMARKS: (ECHA)

PERSISTENCE AND DEGRADABILITY

BIODEGRADABILITY AEROBIC - EXPOSURE TIME 20 D (TOLUENE)
RESULT: 86 % - READILY BIODEGRADABLE.
REMARKS: (IUCLID)

THEORETICAL OXYGEN
DEMAND 3,130 MG/G (TOLUENE)
REMARKS: (LIT.)

BIOACCUMULATIVE POTENTIAL

BIOACCUMULATION LEUCISCUS IDUS (GOLDEN ORFE) - 3 D
- 0.05 MG/L(TOLUENE)

BIOCONCENTRATION FACTOR (BCF): 90

MOBILITY IN SOIL NO DATA AVAILABLE (TOLUENE)

**RESULTS OF PBT AND VPVB
ASSESSMENT** PBT/VPVB ASSESSMENT NOT AVAILABLE AS CHEMICAL
SAFETY ASSESSMENT NOT REQUIRED/NOT CONDUCTED

OTHER ADVERSE EFFECTS AN ENVIRONMENTAL HAZARD CANNOT BE EXCLUDED
IN THE EVENT OF UNPROFESSIONAL HANDLING OR
DISPOSAL.
TOXIC TO AQUATIC LIFE.

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS

PRODUCT OFFER SURPLUS AND NON-RECYCLABLE SOLUTIONS TO
A LICENSED DISPOSAL COMPANY. BURN IN A CHEMICAL
INCINERATOR EQUIPPED WITH AN AFTERBURNER AND
SCRUBBER BUT EXERT EXTRA CARE IN IGNITING AS THIS
MATERIAL IS HIGHLY FLAMMABLE. CONTACT A
LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO
DISPOSE OF THIS MATERIAL.

**CONTAMINATED
PACKAGING** DISPOSE OF AS UNUSED PRODUCT.

SECTION 14. TRANSPORT INFORMATION

DOT (US)
PROPER SHIPPING NAME: FLAMMABLE LIQUIDS, N.O.S. (TOLUENE, 1,3-BUTADIENE)
UN NUMBER: 1993
CLASS: 3
PACKING GROUP: II
REPORTABLE QUANTITY
(RQ): 50 LBS

POISON INHALATION HAZARD: NO

IMDG

PROPER SHIPPING NAME: FLAMMABLE LIQUIDS, N.O.S. (TOLUENE, 1,3-BUTADIENE)
UN NUMBER: 1993
CLASS: 3
PACKING GROUP: II
EMS-NO: F-E, S-E

IATA

PROPER SHIPPING NAME: FLAMMABLE LIQUIDS, N.O.S. (TOLUENE, 1,3-BUTADIENE)
UN NUMBER: 1993
CLASS: 3
PACKING GROUP: II

SECTION 15. REGULATORY INFORMATION

SARA 302 COMPONENTS NO CHEMICALS IN THIS MATERIAL ARE SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE III, SECTION 302.

SARA 313 COMPONENTS THE FOLLOWING COMPONENTS ARE SUBJECT TO REPORTING LEVELS ESTABLISHED BY SARA TITLE III, SECTION 313:

	CAS NO.	REVISION DATE
TOLUENE	108-88-3	07/01/2007
1,3-Butadiene solution, 20 wt. % in toluene	106-99-0	07/01/2007

SARA 311/312 HAZARDS FIRE HAZARD, ACUTE HEALTH HAZARD, CHRONIC HEALTH HAZARD

MASSACHUSETTS RIGHT TO KNOW COMPONENTS

NO COMPONENTS ARE SUBJECT TO THE MASSACHUSETTS RIGHT TO KNOW ACT.

SECTION 16. OTHER INFORMATION

FULL TEXT OF H-STATEMENTS REFERRED TO UNDER SECTIONS 2 AND 3.

H225 HIGHLY FLAMMABLE LIQUID AND VAPOUR.
H304 MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS.
H315 CAUSES SKIN IRRITATION.
H336 MAY CAUSE DROWSINESS OR DIZZINESS.
H340 MAY CAUSE GENETIC DEFECTS.
H350 MAY CAUSE CANCER.
H361 SUSPECTED OF DAMAGING FERTILITY OR THE UNBORN CHILD.
H373 MAY CAUSE DAMAGE TO ORGANS (CENTRAL NERVOUS SYSTEM) THROUGH PROLONGED OR REPEATED EXPOSURE.
H401 TOXIC TO AQUATIC LIFE.
H412 HARMFUL TO AQUATIC LIFE WITH LONG LASTING EFFECTS.

MSDS LEGEND

MW: MOLECULAR WEIGHT
MF: MOLECULAR FORMULA
VOC: VOLATILE ORGANIC COMPOUNDS
ACGIH: AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL
HYGINISTS
CAS: CHEMICAL ABSTRACTS SERIVE REGISTRY NUMBER
OSHA: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PEL: PERMISSIBLE EXPOSURE LIMIT (OSHA)
TLV: THRESHOLD LIMIT VALUE (ACGIH)

IMPORTANT:

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VERSION:3.1

REVISION DATE: 01/27/2017