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SAFETY DATA SHEET

SECTION 1. CHEMICAL IDENTIFICATION

CATALOG #: 16611

NAME: (2S)-(+)-Glycidyl tosylate

SYNONYMS: (S)-(+)-Oxirane-2-methanol p-toluenesulfonate

(S)-(+)-Glycidyl p-toluenesulfonate

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)

SERIOUS EYE DAMAGE (CATEGORY 1), H318 SKIN SENSITISATION (CATEGORY 1), H317 GERM CELL MUTAGENICITY (CATEGORY 2), H341 CARCINOGENICITY (CATEGORY 1B), H350 ACUTE AQUATIC TOXICITY (CATEGORY 2), H401

CHRONIC AQUATIC TOXICITY (CATEGORY 2), H411

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)

H317 MAY CAUSE AN ALLERGIC SKIN REACTION.

H318 CAUSES SERIOUS EYE DAMAGE.

H341 SUSPECTED OF CAUSING GENETIC DEFECTS.

H350 MAY CAUSE CANCER.

H411 TOXIC 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.

P261 AVOID BREATHING DUST/ FUME/ GAS/ MIST/ VAPOURS/

SPRAY.

P272 CONTAMINATED WORK CLOTHING SHOULD NOT BE

ALLOWED OUT OF THE WORKPLACE.

P273 AVOID RELEASE TO THE ENVIRONMENT.

P280 WEAR PROTECTIVE GLOVES/ EYE PROTECTION/ FACE

PROTECTION.

P302 + P352 IF ON SKIN: WASH WITH PLENTY OF SOAP AND WATER.

P305 + P351 + P338 IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL

MINUTES. REMOVE CONTACT LENSES, IF PRESENT AND

EASY TO DO. CONTINUE RINSING.

P310 IMMEDIATELY CALL A POISON CENTER OR DOCTOR/

PHYSICIAN.

P321 SPECIFIC TREATMENT (SEE SUPPLEMENTAL FIRST AID

INSTRUCTIONS ON THIS LABEL).

P333 + P313 IF SKIN IRRITATION OR RASH OCCURS: GET MEDICAL

ADVICE/ ATTENTION.

P363 WASH CONTAMINATED CLOTHING BEFORE REUSE.

P391 COLLECT SPILLAGE. P405 STORE LOCKED UP.

P501 DISPOSE OF CONTENTS/ CONTAINER TO AN APPROVED

WASTE DISPOSAL PLANT.

HAZARDS NOT NONE

OTHERWISE

CLASSIFIED (HNOC) OR NOT COVERED BY GHS

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

MF: $C_{10}H_{12}O_4S$

MW: 228.26

CAS-NO. 70987-78-9

PURITY: \geq 99% (HPLC, Chiral purity)

HAZARDOUS COMPONENTS

COMPONENT	CLASSIFICATION	CONCENTRATION
(2S)-(+)-Glycidyl tosylate		
	EYE DAM. 1; SKIN SENS. 1;	-
	MUTA. 2; CARC. 1B; AQUATIC	
	ACUTE 2; AQUATIC CHRONIC	
	2; H317, H318, H341, H350, H411	

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

SECTION 4. FIRST-AID MEASURES

AND DELAYED

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 WASH OFF WITH SOAP AND PLENTY OF WATER.

CONTACT CONSULT A PHYSICIAN.

IN CASE OF EYE RINSE THOROUGHLY WITH PLENTY OF WATER FOR AT

CONTACT LEAST 15 MINUTES AND CONSULT A PHYSICIAN.

IF SWALLOWED NEVER GIVE ANYTHING BY MOUTH TO AN

UNCONSCIOUS PERSON. RINSE MOUTH WITH WATER.

CONSULT A PHYSICIAN.

MOST IMPORTANT

THE MOST IMPORTANT KNOWN SYMPTOMS AND

EXECUTE A PERCENT PROCESS OF THE PROCESS

SYMPTOMS AND EFFECTS ARE DESCRIBED IN THE LABELLING (SEE

EFFECTS, BOTH ACUTE 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 USE WATER SPRAY, ALCOHOL-RESISTANT FOAM, DRY

EXTINGUISHING MEDIA CHEMICAL OR CARBON DIOXIDE.

SPECIAL HAZARDS CARBON OXIDES, SULPHUR OXIDES.

ARISING FROM THE

SUBSTANCE OR MIXTURE

ADVICE FOR WEAR SELF CONTAINED BREATHING APPARATUS FOR

FIREFIGHTERS FIRE FIGHTING IF NECESSARY.

FURTHER INFORMATION NO DATA AVAILABLE

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL USE PERSONAL PROTECTIVE EQUIPMENT. AVOID DUST PRECAUTIONS, FORMATION. AVOID BREATHING VAPOURS, MIST OR PROTECTIVE GAS. ENSURE ADEQUATE VENTILATION. EVACUATE EQUIPMENT AND PERSONNEL TO SAFE AREAS. AVOID BREATHING DUST. FOR PERSONAL PROTECTION SEE SECTION 8.

PROCEDURES

ENVIRONMENTALPREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TOPRECAUTIONSDO SO. DO NOT LET PRODUCT ENTER DRAINS.DISCHARGE INTO THE ENVIRONMENT MUST BE

AVOIDED.

METHODS ANDPICK UP AND ARRANGE DISPOSAL WITHOUT CREATINGMATERIALS FORDUST. SWEEP UP AND SHOVEL. KEEP IN SUITABLE,CONTAINMENT ANDCLOSED CONTAINERS FOR DISPOSAL.CLEANING UPCLOSED CONTAINERS FOR DISPOSAL.

REFERENCE TO OTHER FOR DISPOSAL SEE SECTION 13. **SECTIONS**

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE

HANDLING

AVOID CONTACT WITH SKIN AND EYES. AVOID

FORMATION OF DUST AND AEROSOLS.

PROVIDE APPROPRIATE EXHAUST VENTILATION AT

PLACES WHERE DUST IS FORMED. FOR PRECAUTIONS SEE SECTION 2.2.

CONDITIONS FOR SAFE

STORAGE, INCLUDING

ANY

INCOMPATIBILITIES

KEEP CONTAINER TIGHTLY CLOSED IN A DRY AND

WELL-VENTILATED PLACE.

RECOMMENDED STORAGE TEMPERATURE: 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

CONTAINS NO SUBSTANCES WITH OCCUPATIONAL

EXPOSURE LIMIT VALUES.

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.

BODY PROTECTION COMPLETE SUIT PROTECTING AGAINST CHEMICALS,

THE TYPE OF PROTECTIVE EQUIPMENT MUST BE SELECTED ACCORDING TO THE CONCENTRATION AND AMOUNT OF THE DANGEROUS SUBSTANCE AT THE

SPECIFIC WORKPLACE.

RESPIRATORY WHERE RISK ASSESSMENT SHOWS AIR-PURIFYING **PROTECTION** RESPIRATORS ARE APPROPRIATE USE A FULL-FACE

RESPIRATORS ARE APPROPRIATE USE A FULL-FACE PARTICLE RESPIRATOR TYPE N100 (US) OR TYPE P3 (EN

143) 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 White to off-white crystalline powder

ODOUR NO DATA AVAILABLE
ODOUR THRESHOLD NO DATA AVAILABLE
PH NO DATA AVAILABLE

MELTING 45-48 °C

POINT/FREEZING POINT INITIAL BOILING POINT AND BOILING RANGE

FLASH POINT

EVAPOURATION RATE NO DATA AVAILABLE FLAMMABILITY (SOLID, NO DATA AVAILABLE

GAS)

UPPER/LOWER NO DATA AVAILABLE

FLAMMABILITY OR EXPLOSIVE LIMITS

VAPOUR PRESSURE NO DATA AVAILABLE VAPOUR DENSITY NO DATA AVAILABLE

RELATIVE DENSITY

WATER SOLUBILITY NO DATA AVAILABLE PARTITION COEFFICIENT: NO DATA AVAILABLE

N- OCTANOL/WATER

AUTO-IGNITION NO DATA AVAILABLE

TEMPERATURE

DECOMPOSITION NO DATA AVAILABLE

TEMPERATURE

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 NO DATA AVAILABLE

CONDITIONS TO AVOID NO DATA AVAILABLE

INCOMPATIBLE MATERIALS

STRONG OXIDIZING AGENTS

HAZARDOUS OTHER DECOMPOSITION PRODUCTS - NO DATA

DECOMPOSITION AVAILABLE

PRODUCTS IN THE EVENT OF FIRE: SEE SECTION 5

SECTION 11. TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

ACUTE TOXICITY NO DATA AVAILABLE

INHALATION: NO DATA AVAILABLE

DERMAL: NO DATA AVAILABLE

NO DATA AVAILABLE

SKIN NO DATA AVAILABLE

CORROSION/IRRITATION

SERIOUS EYE NO DATA AVAILABLE

DAMAGE/EYE IRRITATION

RESPIRATORY OR SKIN NO DATA AVAILABLE

SENSITISATION

GERM CELL LABORATORY EXPERIMENTS HAVE SHOWN

MUTAGENICITY MUTAGENIC EFFECTS.

IN VITRO TESTS SHOWED MUTAGENIC EFFECTS

MOUSE

CYTOGENETIC ANALYSIS

MOUSE

SISTER CHROMATID EXCHANGE

CARCINOGENICITY

THIS PRODUCT IS OR CONTAINS A COMPONENT THAT HAS BEEN REPORTED TO BE PROBABLY CARCINOGENIC BASED ON ITS IARC, OSHA, ACGIH, NTP, OR EPA CLASSIFICATION.

POSSIBLE HUMAN CARCINOGEN

IARC: NO COMPONENT OF THIS PRODUCT PRESENT AT

LEVELS GREATER THAN OR EQUAL TO 0.1% IS

IDENTIFIED AS PROBABLE, POSSIBLE OR CONFIRMED

HUMAN CARCINOGEN BY IARC.

ACGIH: NO COMPONENT OF THIS PRODUCT PRESENT AT

LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A CARCINOGEN OR POTENTIAL

CARCINOGEN BY ACGIH.

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 IDENTIFIED AS A CARCINOGEN OR POTENTIAL

CARCINOGEN BY OSHA.

REPRODUCTIVE TOXICITY NO DATA AVAILABLE

SPECIFIC TARGET ORGAN

TOXICITY - SINGLE

EXPOSURE

NO DATA AVAILABLE

SPECIFIC TARGET ORGAN

TOXICITY - REPEATED

EXPOSURE

NO DATA AVAILABLE

ASPIRATION HAZARD NO DATA AVAILABLE

ADDITIONAL INFORMATION

RTECS: RR0510050

SECTION 12. ECOLOGICAL INFORMATION

TOXICITY NO DATA AVAILABLE

PERSISTENCE AND **DEGRADABILITY**

NO DATA AVAILABLE

BIOACCUMULATIVE

POTENTIAL

NO DATA AVAILABLE

MOBILITY IN SOIL NO DATA AVAILABLE

ASSESSMENT

RESULTS OF PBT AND VPVB 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.

AVOID RELEASE TO THE ENVIRONMENT.

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS

PRODUCT OFFER SURPLUS AND NON-RECYCLABLE SOLUTIONS TO

A LICENSED DISPOSAL COMPANY. CONTACT A

LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL. DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN

AFTERBURNER AND SCRUBBER.

CONTAMINATED **PACKAGING**

DISPOSE OF AS UNUSED PRODUCT.

SECTION 14. TRANSPORT INFORMATION

DOT (US) NOT DANGEROUS GOODS

IMDG

PROPER SHIPPING NAME: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S. ((2S)-(+)-Glycidyl tosylate)

3077 UN NUMBER: 9 CLASS: PACKING GROUP: IIIEMS-No: F-A, S-F MARINE POLLUTANT: YES

IATA

PROPER SHIPPING NAME: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S. ((2S)-(+)-Glycidyl tosylate)

UN NUMBER: 3077 CLASS: 9 PACKING GROUP: III

FURTHER INFORMATION EHS-MARK REQUIRED (IMDG CODE 2.10.3) FOR SINGLE

PACKAGINGS AND COMBINATION PACKAGINGS CONTAINING INNER PACKAGINGS WITH DANGEROUS GOODS > 5L FOR LIQUIDS OR > 5KG FOR SOLIDS.

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 THIS MATERIAL DOES NOT CONTAIN ANY CHEMICAL

COMPONENTS WITH KNOWN CAS NUMBERS THAT EXCEED THE THRESHOLD (DE MINIMIS) REPORTING LEVELS ESTABLISHED BY SARA TITLE III, SECTION 313.

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

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

PENNSYLVANIA RIGHT TO KNOW COMPONENTS

CAS-NO. REVISION DATE

(2*S*)-(+)-Glycidyl tosylate 70987-78-9

NEW JERSEY RIGHT TO KNOW COMPONENTS

CAS-NO. REVISION DATE REVISION DATE

(2*S*)-(+)-Glycidyl tosylate 70987-78-9

CALIFORNIA PROP. 65

COMPONENTS KNOWN TO STATE OF CALIFORNIA TO CAUSE CANCER,

BIRTH DEFECTS, OR ANY OTHER REPRODUCTIVE HARM.

THIS PRODUCT DOES NOT CONTAIN ANY CHEMICALS

SECTION 16. OTHER INFORMATION

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

AQUATIC ACUTE ACUTE AQUATIC TOXICITY
AQUATIC CHRONIC CHRONIC AQUATIC TOXICITY

CARC. CARCINOGENICITY

EYE DAM. SERIOUS EYE DAMAGE

H317 MAY CAUSE AN ALLERGIC SKIN REACTION.

H318 CAUSES SERIOUS EYE DAMAGE.

H341 SUSPECTED OF CAUSING GENETIC DEFECTS.

H350 MAY CAUSE CANCER. H401 TOXIC TO AQUATIC LIFE.

H411 TOXIC TO AOUATIC LIFE WITH LONG LASTING EFFECTS.

MUTA. GERM CELL MUTAGENICITY

HMIS RATING

HEALTH HAZARD: 2 CHRONIC HEALTH *

HAZARD:

FLAMMABILITY: 1 PHYSICAL HAZARD 0

NFPA RATING

HEALTH HAZARD: 2 FIRE HAZARD: 1 REACTIVITY HAZARD: 0

MSDS LEGEND

MW: MOLECULAR WEIGHT MF: MOLECULAR FORMULA

VOC: VOLATILE ORGANIC COMPOUNDS

ACGIH: AMERICAN CONFERENCE OF GOVERNMENENTAL

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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