Chem-Impex International Inc.

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SAFETY DATA SHEET

SECTION 1. CHEMICAL IDENTIFICATION

CATALOG #:	24602
NAME:	(R)-(-)-Epichlorohydrin
SYNONYMS:	(R)-(-)-2-(Chloromethyl)oxirane
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 LIQUID (CATEGORY 3), H226 ACUTE TOXICITY, INHALATION (CATEGORY 3), H331 ACUTE TOXICITY, DERMAL (CATEGORY 3), H311 ACUTE TOXICITY, ORAL (CATEGORY 3), H301 SKIN CORROSION (CATEGORY 1B), H314 SERIOUS EYE DAMAGE (CATEGORY 1), H314 SKIN SENSITIZATION (CATEGORY 1), H317 CARCINOGENICITY (CATEGORY 1B), H350

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

GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS

PICTOGRAM



SIGNAL WORD

HAZARD STATEMENT(S	5)
H226	FLAMMABLE LIQUID AND VAPOUR.
H301 + H311	TOXIC IF SWALLOWED OR IN CONTACT WITH SKIN
H314	CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.
H317	MAY CAUSE AN ALLERGIC SKIN REACTION.
H331	TOXIC IF INHALED.
H350	MAY CAUSE CANCER.
PRECAUTIONARY STAT	'EMENT(S)
P201	OBTAIN SPECIAL INSTRUCTIONS BEFORE USE.
P261	AVOID BREATHING DUST/ FUME/ GAS/ MIST/ VAPOURS/
	SPRAY.
P280	WEAR PROTECTIVE GLOVES/ PROTECTIVE CLOTHING/ EYE
	PROTECTION/ FACE PROTECTION.
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.

HAZARDS NOT OTHERWISE CLASSIFIED (HNOC) OR NOT COVERED BY GHS

EMERGENCY OVERVIEW

OSHA HAZARDS FLAMMABLE LIQUID, TARGET ORGAN EFFECT, HIGHLY TOXIC BY INHALATION, TOXIC BY INGESTION, TOXIC BY SKIN ABSORPTION, SKIN SENSITISER, CORROSIVE, CARCINOGEN

TARGET ORGANSKIDNEY, LIVER, LUNGS

NONE

GHS CLASSIFICATION FLAMMABLE LIQUIDS (CATEGORY 3) ACUTE TOXICITY, INHALATION (CATEGORY 3) ACUTE TOXICITY, DERMAL (CATEGORY 3) ACUTE TOXICITY, ORAL (CATEGORY 3)

SKIN CORROSION (CATEGORY 1B) SERIOUS EYE DAMAGE (CATEGORY 1) SKIN SENSITIZATION (CATEGORY 1) CARCINOGENICITY (CATEGORY 1B)

GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS

PICTOGRAM

SIGNAL WORD



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STATEMENT(S)	
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P261	AVOID BREATHING DUST/ FUME/ GAS/ MIST/ VAPOURS/
	SPRAY.
P280	WEAR PROTECTIVE GLOVES/ PROTECTIVE CLOTHING/ EYE
	PROTECTION/ FACE PROTECTION.
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.

POTENTIAL HEALTH EFFECTS

INHALATION	MAY BE FATAL IF INHALED. MATERIAL IS EXTREMELY DESTRUCTIVE TO THE TISSUE OF THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.
SKIN	TOXIC IF ABSORBED THROUGH SKIN. CAUSES SKIN BURNS.
EYES	CAUSES EYE BURNS.
INGESTION	TOXIC IF SWALLOWED.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

MF:	C ₃ H ₅ ClO
MW:	92.52

CAS-NO. 51594-55-9

PURITY:	\geq 99% (Chiral HPLC)	
HAZARDOUS COMP	ONENTS	
COMPONENT	CLASSIFICATION	CONCENTRATION
(R)-1-CHLORO-2,3-E	POXYPROPANE	
	FLAM LIQ. 3; SKIN CORR.;	-
	EYE DAM.; CARC;	
FOR THE FULL TEXT	OF THE H-STATEMENTS MENTIC	ONED IN THIS SECTION, SEE
SECTION 16.		

SECTION 4. 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	TAKE OFF CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH OFF WITH SOAP AND PLENTY OF WATER. TAKE VICTIM IMMEDIATELY TO HOSPITAL. CONSULT A PHYSICIAN.
IN CASE OF EYE CONTACT	RINSE THOROUGHLY WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES AND CONSULT A PHYSICIAN.CONTINUE RINSING EYES DURING TRANSPORT TO HOSPITAL.
IF SWALLOWED	DO NOT INDUCE VOMITING. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. RINSE MOUTH WITH WATER. CONSULT A PHYSICIAN.

SECTION 5. FIRE AND EXPLOSION DATA

SUITABLE EXTINGUISHING MEDIA	FOR SMALL (INCIPIENT) FIRES, USE MEDIA SUCH AS "ALCOHOL" FOAM, DRY CHEMICAL, OR CARBON DIOXIDE. FOR LARGE FIRES, APPLY WATER FROM AS FAR AS POSSIBLE. USE VERY LARGE QUANTITIES (FLOODING) OF WATER APPLIED AS A MIST OR SPRAY; SOLID STREAMS OF WATER MAY BE INEFFECTIVE. COOL ALL AFFECTED CONTAINERS WITH FLOODING QUANTITIES OF WATER.
SPECIAL PROTECTIVE EQUIPMENT FOR	WEAR SELF CONTAINED BREATHING APPARATUS FOR FIRE FIGHTING IF NECESSARY.

FIREFIGHTERS

HAZARDOUS	HAZARDOUS DECOMPOSITION PRODUCTS FORMED
COMBUSTION PRODUCTS	UNDER FIRE CONDITIONS CARBON OXIDES, HYDROGEN CHLORIDE GAS
FURTHER INFORMATION	USE WATER SPRAY TO COOL UNOPENED CONTAINERS.

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS	WEAR RESPIRATORY PROTECTION. AVOID BREATHING VAPORS, MIST OR GAS. ENSURE ADEQUATE VENTILATION. REMOVE ALL SOURCES OF IGNITION. EVACUATE PERSONNEL TO SAFE AREAS. BEWARE OF VAPOURS ACCUMULATING TO FORM EXPLOSIVE CONCENTRATIONS. VAPOURS CAN ACCUMULATE IN LOW AREAS.
ENVIRONMENTAL PRECAUTIONS	PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO NOT LET PRODUCT ENTER DRAINS.
METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP	CONTAIN SPILLAGE, AND THEN COLLECT WITH AN ELECTRICALLY PROTECTED VACUUM CLEANER OR BY WET-BRUSHING AND PLACE IN CONTAINER FOR DISPOSAL ACCORDING TO LOCAL REGULATIONS (SEE SECTION 13).

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING	AVOID CONTACT WITH SKIN AND EYES. AVOID INHALATION OF VAPOUR OR MIST. KEEP AWAY FROM SOURCES OF IGNITION - NO SMOKING. TAKE MEASURES TO PREVENT THE BUILD UP OF ELECTROSTATIC CHARGE.
CONDITIONS FOR SAFE STORAGE	STORE IN COOL PLACE. 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.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTROL PARAMETERS

COMPONENTS WITHCONTAINS NO SUBSTANCES WITH OCCUPATIONALWORKPLACE CONTROLEXPOSURE LIMIT VALUES.PARAMETERSCONTAINS NO SUBSTANCES WITH OCCUPATIONAL

EXPOSURE CONTROLS

APPROPRIATE	AVOID CONTACT WITH SKIN, EYES AND CLOTHING.
ENGINEERING	WASH HANDS BEFORE BREAKS AND IMMEDIATELY
CONTROLS	AFTER HANDLING THE PRODUCT.

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 PROTECTIONHANDLE 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: BUTYL-RUBBER MINIMUM LAYER THICKNESS: 0.3 MM BREAK THROUGH TIME: 480 MIN MATERIAL TESTED:BUTOJECT (KCL 897, SIZE M)

SPLASH PROTECTION MATERIAL: BUTYL-RUBBER MINIMUM LAYER THICKNESS: 0.3 MM BREAK THROUGH TIME: 480 MIN MATERIAL TESTED:BUTOJECT (KCL 897, 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 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,
	THE TYPE OF PROTECTIVE EQUIPMENT MUST BE
	SELECTED ACCORDING TO THE CONCENTRATION AND
	AMOUNT OF THE DANGEROUS SUBSTANCE AT THE
	SPECIFIC WORKPLACE.

RESPIRATORY
PROTECTIONWHERE RISK ASSESSMENT SHOWS AIR-PURIFYING
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 OFPREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TOENVIRONMENTALDO SO. DO NOT LET PRODUCT ENTER DRAINS.EXPOSUREContemporation

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES Clear to yellow liquid APPEARANCE ODOUR NO DATA AVAILABLE ODOUR THRESHOLD NO DATA AVAILABLE PH NO DATA AVAILABLE MELTING POINT/FREEZING POINT 114 °C INITIAL BOILING POINT AND BOILING RANGE 70 °C FLASH POINT EVAPORATION RATE NO DATA AVAILABLE NO DATA AVAILABLE FLAMMABILITY (SOLID, GAS) UPPER/LOWER 3.8 %(V) UPPER EXPLOSION LIMIT 21 %(V) FLAMMABILITY OR EXPLOSIVE LIMITS VAPOUR PRESSURE 16.7 HPA (12.5 MMHG) AT 20 C 13 HPA (10 MMHG) AT 16.6 C 1.18 G/CM3 AT 20 C WATER SOLUBILITY VAPOUR DENSITY 3.19 - (AIR = 1.0)RELATIVE DENSITY 1.18 WATER SOLUBILITY NO DATA AVAILABLE PARTITION COEFFICIENT: NO DATA AVAILABLE N- OCTANOL/WATER AUTO-IGNITION 411 C TEMPERATURE DECOMPOSITION NO DATA AVAILABLE TEMPERATURE

VISCOSITY	NO DATA AVAILABLE
EXPLOSIVE PROPERTIES	NO DATA AVAILABLE
OXIDIZING PROPERTIES	NO DATA AVAILABLE

OTHER SAFETY	NO DATA AVAILABLE
INFORMATION	

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	ACIDS, BASES, AMMONIA, AMINES, SODIUM/SODIUM OXIDES, ZINC, MAGNESIUM, ALUMINUM, AND ITS ALLOYS, HALIDES	
HAZARDOUS DECOMPOSITION PRODUCTS	HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS CARBON OXIDES, HYDROGEN CHLORIDE GAS	

SECTION 11. TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

ACUTE TOXICITY	NO DATA AVAILABLE
SKIN CORROSION/IRRITATION	NO DATA AVAILABLE
SERIOUS EYE DAMAGE/EYE IRRITATION	NO DATA AVAILABLE
RESPIRATORY OR SKIN SENSITISATION	MAY CAUSE ALLERGIC SKIN REACTION.

GERM CELL MUTAGENICITY	GENOTOXICITY IN VIVO - MOUSE - INTRAPERITONEAL CYTOGENETIC ANALYSIS GENOTOXICITY IN VIVO - MOUSE - INTRAPERITONEAL SISTER CHROMATID EXCHANGE
CARCINOGENICITY	
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: RR0427000 MATERIAL IS EXTREMELY DESTRUCTIVE TO TISSUE OF THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT, EYES, AND SKIN., COUGH

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
RESULTS OF PBT AND VPVB ASSESSMENT	PBT/VPVB ASSESSMENT NOT AVAILABLE AS CHEMICAL SAFETY ASSESSMENT NOT REQUIRED/NOT CONDUCTED
OTHER ADVERSE EFFECTS	NO DATA AVAILABLE

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS

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

SECTION 14. TRANSPORT INFORMATION

PROPER SHIPPING NAME: UN-NUMBER: CLASS: PACKING GROUP: MARINE POLLUTANT: POISON INHALATION HAZARD:	((R)-(-)-Epichlorohydrin) 2023 6.1(3) II NO NO
IMDG PROPER SHIPPING NAME: UN-NUMBER: CLASS: PACKING GROUP:	((R)-(-)-Epichlorohydrin) 2023 6.1(3) II

EMS-NO:	F-E, S-D
MARINE POLLUTANT:	YES
IATA	
PROPER SHIPPING NAME:	((R)-(-)-Epichlorohydrin)
UN-NUMBER:	2023
CLASS:	6.1(3)
PACKING GROUP:	II

SECTION 15. REGULATORY INFORMATION

OSHA HAZARDS	FLAMMABLE LIQUID, TARGE TOXIC BY INHALATION, TOX BY SKIN ABSORPTION, SKIN CARCINOGEN	IC BY INGESTION, TOXIC	
SARA 302 COMPONENTS	NO CHEMICALS IN THIS MAT THE REPORTING REQUIREM SECTION 302.		
SARA 313 COMPONENTS	SARA 313: 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	FIRE HAZARD, ACUTE HEALTH HAZARD, CHRONIC HEALTH HAZARD		
MASSACHUSETTS RIGHT TO KNOW COMPONENTS	NO COMPONENTS ARE SUBJECT TO THE MASSACHUSETTS RIGHT TO KNOW ACT.		
PENNSYLVANIA RIGHT TO	KNOW COMPONENTS		
		REVISION DATE	
(R)-(-)-Epichlorohydrin	51594-55-9		
NEW JERSEY RIGHT TO KNOW COMPONENTS			
		REVISION DATE	
(R)-(-)-Epichlorohydrin	51594-55-9		
CALIFORNIA PROP. 65 COMPONENTS	THIS PRODUCT DOES NOT CONTAIN ANY CHEMICALS KNOWN TO STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR ANY OTHER REPRODUCTIVE HARM.		

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

H226	FLAMMABLE LIQUID AND VAPOUR.
H301 + H311	TOXIC IF SWALLOWED OR IN CONTACT WITH SKIN
H314	CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.
H317	MAY CAUSE AN ALLERGIC SKIN REACTION.
H331	TOXIC IF INHALED.
H350	MAY CAUSE CANCER.
FLAM. LIQ.	FLAMMABLE LIQUIDS
EYE IRRIT.	EYE IRRITATION

HMIS CLASSIFICATION

HEALTH HAZARD:	4
CHRONIC HEALTH	*
HAZARD:	
FLAMMABILITY:	3
PHYSICAL HAZARDS:	0

NFPA RATING

HEALTH HAZARD:	4
FIRE:	3
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)
IN (DODTANT	

IMPORTANT:

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