

# ***Chem-Impex International Inc.***

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## **SAFETY DATA SHEET**

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### **SECTION 1. CHEMICAL IDENTIFICATION**

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CATALOG #:	06933
NAME:	Boron trifluoride - ethyl ether complex
SYNONYMS:	Boron trifluoride - diethyl ether complex
24 HOUR EMERGENCY TELEPHONE:	(800) 535-5053(USA) 352-323-3500 (INTERNATIONAL)
TO REQUEST AN MSDS:	(800) 869-9290
CUSTOMER SERVICE:	(630) 766-2112

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### **SECTION 2. HAZARDS IDENTIFICATION**

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#### **CLASSIFICATION OF THE SUBSTANCE OR MIXTURE**

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

FLAMMABLE LIQUIDS (CATEGORY 3), H226  
ACUTE TOXICITY, ORAL (CATEGORY 4), H302  
ACUTE TOXICITY, INHALATION (CATEGORY 2), H330  
SKIN CORROSION (CATEGORY 1B), H314  
SERIOUS EYE DAMAGE (CATEGORY 1), H318

SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE, INHALATION  
(CATEGORY 1), KIDNEY, H372  
SHORT-TERM (ACUTE) AQUATIC HAZARD (CATEGORY 3), H402  
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)**

H226	FLAMMABLE LIQUID AND VAPOR.
H302	HARMFUL IF SWALLOWED.
H314	CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.
H330	FATAL IF INHALED.
H372	CAUSES DAMAGE TO ORGANS (KIDNEY) THROUGH PROLONGED OR REPEATED EXPOSURE IF INHALED.
H412	HARMFUL TO AQUATIC LIFE WITH LONG LASTING EFFECTS.

**PRECAUTIONARY STATEMENT(S)**

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/ VAPORS/ SPRAY.
P264	WASH SKIN THOROUGHLY AFTER HANDLING.
P270	DO NOT EAT, DRINK OR SMOKE WHEN USING THIS PRODUCT.
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.
P284	WEAR RESPIRATORY PROTECTION.
P301 + P312 + P330	IF SWALLOWED: CALL A POISON CENTER/ DOCTOR IF YOU FEEL UNWELL. RINSE MOUTH.
P301 + P330 + P331	IF SWALLOWED: RINSE MOUTH. DO NOT INDUCE VOMITING.
P303 + P361 + P353	IF ON SKIN (OR HAIR): REMOVE/ TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING. RINSE SKIN WITH WATER/ SHOWER.
P304 + P340 + P310	IF INHALED: REMOVE PERSON TO FRESH AIR AND KEEP COMFORTABLE FOR BREATHING. IMMEDIATELY CALL A POISON CENTER/DOCTOR.

P305 + P351 + P338 + P310	IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES, IF PRESENT AND EASY TO DO. CONTINUE RINSING. IMMEDIATELY CALL A POISON CENTER/DOCTOR.
P314	GET MEDICAL ADVICE/ ATTENTION IF YOU FEEL UNWELL.
P363	WASH CONTAMINATED CLOTHING 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.
<b>HAZARDS NOT OTHERWISE CLASSIFIED (HNOC) OR NOT COVERED BY GHS</b>	STRONG HYDROGEN FLUORIDE-RELEASER REACTS VIOLENTLY WITH WATER.

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

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MF:	BF <sub>3</sub> ·C <sub>4</sub> H <sub>10</sub> O
MW:	141.93
CAS-NO.	109-63-7
PURITY:	≥ 98% (Assay by titration)

#### HAZARDOUS COMPONENTS

COMPONENT	CLASSIFICATION	CONCENTRATION
<b>Boron trifluoride - ethyl ether complex</b>		
	FLAM. LIQ. 3; ACUTE TOX. 4; ACUTE TOX. 2; SKIN CORR. 1B; EYE DAM. 1; STOT RE 1; AQUATIC ACUTE 3; AQUATIC CHRONIC 3; H226, H302, H330, H314, H318, H372, H402, H412	≤ 100 %

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

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### SECTION 4. FIRST-AID MEASURES

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#### DESCRIPTION OF FIRST AID MEASURES

**GENERAL ADVICE**

HYDROFLUORIC (HF) ACID BURNS REQUIRE IMMEDIATE AND SPECIALIZED FIRST AID AND MEDICAL TREATMENT. SYMPTOMS MAY BE DELAYED UP TO 24 HOURS DEPENDING ON THE CONCENTRATION OF HF. AFTER DECONTAMINATION WITH WATER, FURTHER DAMAGE CAN OCCUR DUE TO PENETRATION/ABSORPTION OF THE FLUORIDE ION. TREATMENT SHOULD BE DIRECTED TOWARD BINDING THE FLUORIDE ION AS WELL AS THE EFFECTS OF EXPOSURE. SKIN EXPOSURES CAN BE TREATED WITH A 2.5% CALCIUM GLUCONATE GEL REPEATED UNTIL BURNING CEASES. MORE SERIOUS SKIN EXPOSURES MAY REQUIRE SUBCUTANEOUS CALCIUM GLUCONATE EXCEPT FOR DIGITAL AREAS UNLESS THE PHYSICIAN IS EXPERIENCED IN THIS TECHNIQUE, DUE TO THE POTENTIAL FOR TISSUE INJURY FROM INCREASED PRESSURE. ABSORPTION CAN READILY OCCUR THROUGH THE SUBUNGUAL AREAS AND SHOULD BE CONSIDERED WHEN UNDERGOING DECONTAMINATION. PREVENTION OF ABSORPTION OF THE FLUORIDE ION IN CASES OF INGESTION CAN BE OBTAINED BY GIVING MILK, CHEWABLE CALCIUM CARBONATE TABLETS OR MILK OF MAGNESIA TO CONSCIOUS VICTIMS. CONDITIONS SUCH AS HYPOCALCEMIA, HYPOMAGNESEMIA AND CARDIAC ARRHYTHMIAS SHOULD BE MONITORED FOR, SINCE THEY CAN OCCUR AFTER EXPOSURE. FIRST AIDER NEEDS TO PROTECT HIMSELF. SHOW THIS MATERIAL SAFETY DATA SHEET TO THE DOCTOR IN ATTENDANCE.

**IF INHALED**

AFTER INHALATION: FRESH AIR. IMMEDIATELY CALL IN PHYSICIAN. IF BREATHING STOPS: IMMEDIATELY APPLY ARTIFICIAL RESPIRATION, IF NECESSARY ALSO OXYGEN.

**IN CASE OF SKIN CONTACT**

FIRST TREATMENT WITH CALCIUM GLUCONATE PASTE. IN CASE OF SKIN CONTACT: TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING. RINSE SKIN WITH WATER/ SHOWER. CALL A PHYSICIAN IMMEDIATELY.

**IN CASE OF EYE CONTACT**

AFTER EYE CONTACT: RINSE OUT WITH PLENTY OF WATER. IMMEDIATELY CALL IN OPHTHALMOLOGIST. REMOVE CONTACT LENSES.

**IF SWALLOWED**

AFTER SWALLOWING: MAKE VICTIM DRINK WATER (TWO GLASSES AT MOST), AVOID VOMITING (RISK OF PERFORATION). CALL A PHYSICIAN IMMEDIATELY. DO NOT ATTEMPT TO NEUTRALISE.

**MOST IMPORTANT SYMPTOMS AND**

THE MOST IMPORTANT KNOWN SYMPTOMS AND EFFECTS ARE DESCRIBED IN THE LABELLING (SEE SECTION 2.2) AND/OR IN SECTION 11

**EFFECTS, BOTH ACUTE  
AND DELAYED**

**INDICATION OF ANY  
IMMEDIATE MEDICAL  
ATTENTION AND  
SPECIAL TREATMENT  
NEEDED**

NO DATA AVAILABLE

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**SECTION 5. FIRE AND EXPLOSION DATA**

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**EXTINGUISHING MEDIA**

**SUITABLE  
EXTINGUISHING MEDIA**

SUITABLE EXTINGUISHING MEDIA  
CARBON DIOXIDE (CO<sub>2</sub>) DRY POWDER COVER WITH  
DRY SAND OR CEMENT.

UNSUITABLE EXTINGUISHING MEDIA  
FOAM WATER

**SPECIAL HAZARDS  
ARISING FROM THE  
SUBSTANCE OR MIXTURE**

CARBON OXIDES, HYDROGEN FLUORIDE,  
BORANE/BORON OXIDES  
COMBUSTIBLE.  
VAPORS ARE HEAVIER THAN AIR AND MAY SPREAD  
ALONG FLOORS.  
MAY NOT GET IN TOUCH WITH: WATER  
FORMS EXPLOSIVE MIXTURES WITH AIR AT ELEVATED  
TEMPERATURES.  
DEVELOPMENT OF HAZARDOUS COMBUSTION GASES  
OR VAPOURS POSSIBLE IN THE EVENT OF FIRE.

**ADVICE FOR  
FIREFIGHTERS**

STAY IN DANGER AREA ONLY WITH SELF-CONTAINED  
BREATHING APPARATUS. PREVENT SKIN CONTACT BY  
KEEPING A SAFE DISTANCE OR BY WEARING  
SUITABLE PROTECTIVE CLOTHING.

**FURTHER INFORMATION**

WATER HYDROLYZES MATERIAL LIBERATING ACIDIC  
GAS WHICH IN CONTACT WITH METAL SURFACES CAN  
GENERATE FLAMMABLE AND/OR EXPLOSIVE  
HYDROGEN GAS.REMOVE CONTAINER FROM DANGER  
ZONE AND COOL WITH WATER. SUPPRESS (KNOCK  
DOWN) GASES/VAPORS/MISTS WITH A WATER SPRAY  
JET. PREVENT FIRE EXTINGUISHING WATER FROM  
CONTAMINATING SURFACE WATER OR THE GROUND  
WATER SYSTEM.

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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

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**PERSONAL  
PRECAUTIONS,  
PROTECTIVE  
EQUIPMENT AND  
EMERGENCY  
PROCEDURES**

ADVICE FOR NON-EMERGENCY PERSONNEL: DO NOT BREATHE VAPORS, AEROSOLS. AVOID SUBSTANCE CONTACT. ENSURE ADEQUATE VENTILATION. KEEP AWAY FROM HEAT AND SOURCES OF IGNITION. EVACUATE THE DANGER AREA, OBSERVE EMERGENCY PROCEDURES, CONSULT AN EXPERT. FOR PERSONAL PROTECTION SEE SECTION 8.

**ENVIRONMENTAL  
PRECAUTIONS**

DO NOT LET PRODUCT ENTER DRAINS. RISK OF EXPLOSION.

**METHODS AND  
MATERIALS FOR  
CONTAINMENT AND  
CLEANING UP**

COVER DRAINS. COLLECT, BIND, AND PUMP OFF SPILLS. OBSERVE POSSIBLE MATERIAL RESTRICTIONS (SEE SECTIONS 7 AND 10). TAKE UP CAREFULLY WITH LIQUID-ABSORBENT MATERIAL (E.G. CHEMIZORB ). DISPOSE OF PROPERLY. CLEAN UP AFFECTED AREA.

**REFERENCE TO OTHER  
SECTIONS**

FOR DISPOSAL SEE SECTION 13.

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**SECTION 7. HANDLING AND STORAGE**

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**PRECAUTIONS FOR SAFE  
HANDLING**

WORK UNDER HOOD. DO NOT INHALE SUBSTANCE/MIXTURE. AVOID GENERATION OF VAPOURS/AEROSOLS. KEEP WORKPLACE DRY. DO NOT ALLOW PRODUCT TO COME INTO CONTACT WITH WATER.  
KEEP AWAY FROM OPEN FLAMES, HOT SURFACES AND SOURCES OF IGNITION. TAKE PRECAUTIONARY MEASURES AGAINST STATIC DISCHARGE.  
FOR PRECAUTIONS SEE SECTION 2.2.

**CONDITIONS FOR SAFE  
STORAGE, INCLUDING  
ANY INCOMPATIBILITIES**

STORE UNDER NITROGEN.  
KEEP CONTAINER TIGHTLY CLOSED IN A DRY AND WELL-VENTILATED PLACE. KEEP AWAY FROM HEAT AND SOURCES OF IGNITION. KEEP LOCKED UP OR IN AN AREA ACCESSIBLE ONLY TO QUALIFIED OR AUTHORIZED PERSONS.  
KEEP AWAY FROM WATER. NEVER ALLOW PRODUCT TO GET IN CONTACT WITH WATER DURING STORAGE.

STORE UNDER INERT GAS. REACTS VIOLENTLY WITH WATER.

Store at 2 - 8 °C

**SPECIFIC END USE(S)**

APART FROM THE USES MENTIONED IN SECTION 1.2 NO OTHER SPECIFIC USES ARE STIPULATED

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**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

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**CONTROL PARAMETERS****COMPONENTS WITH WORKPLACE CONTROL PARAMETERS**

<b>COMPONENT</b>	<b>CAS-NO.</b>	<b>VALUE</b>	<b>CONTROL PARAMETERS</b>	<b>BASIS</b>
Boron trifluoride - ethyl ether complex	109-63-7	TWA	0.1 PPM	USA. ACGIH THRESHOLD LIMIT VALUES (TLV)
	REMARKS	RESPIRATORY TRACT IRRITATION PNEUMONITIS 2019 ADOPTION		
		C	0.7 PPM	USA. ACGIH THRESHOLD LIMIT VALUES (TLV)
		RESPIRATORY TRACT IRRITATION PNEUMONITIS 2019 ADOPTION		

**EXPOSURE CONTROLS****APPROPRIATE  
ENGINEERING  
CONTROLS**

IMMEDIATELY CHANGE CONTAMINATED CLOTHING.  
APPLY PREVENTIVE SKIN PROTECTION. WASH HANDS AND  
FACE AFTER WORKING WITH SUBSTANCE.

**PERSONAL PROTECTIVE EQUIPMENT****EYE/FACE  
PROTECTION**

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

**SKIN PROTECTION**

THIS RECOMMENDATION APPLIES ONLY TO THE PRODUCT STATED IN THE SAFETY DATA SHEET, SUPPLIED BY US AND FOR THE DESIGNATED USE. WHEN DISSOLVING IN OR MIXING WITH OTHER SUBSTANCES AND UNDER CONDITIONS DEVIATING FROM THOSE STATED IN EN374 PLEASE CONTACT THE SUPPLIER OF CE-APPROVED GLOVES (E.G. KCL GMBH, D-36124 EICHENZELL).

**FULL CONTACT**

MATERIAL: NITRILE RUBBER

MINIMUM LAYER THICKNESS: 0.4 MM

BREAK THROUGH TIME: 480 MIN

MATERIAL TESTED: CAMATRIL (KCL 730, SIZE M)

THIS RECOMMENDATION APPLIES ONLY TO THE PRODUCT STATED IN THE SAFETY DATA SHEET, SUPPLIED BY US AND FOR THE DESIGNATED USE. WHEN DISSOLVING IN OR MIXING WITH OTHER SUBSTANCES AND UNDER CONDITIONS DEVIATING FROM THOSE STATED IN EN374 PLEASE CONTACT THE SUPPLIER OF CE-APPROVED GLOVES (E.G. KCL GMBH, D-36124 EICHENZELL).

**SPLASH CONTACT**

MATERIAL: VITON

MINIMUM LAYER THICKNESS: 0.7 MM

BREAK THROUGH TIME: 120 MIN

MATERIAL TESTED: VITOJECT (KCL 890, SIZE M)

**BODY PROTECTION**

FLAME RETARDANT ANTISTATIC PROTECTIVE CLOTHING.

**RESPIRATORY PROTECTION**

REQUIRED WHEN VAPOURS/AEROSOLS ARE GENERATED. OUR RECOMMENDATIONS ON FILTERING RESPIRATORY PROTECTION ARE BASED ON THE FOLLOWING STANDARDS: DIN EN 143, DIN 14387 AND OTHER ACCOMPANYING STANDARDS RELATING TO THE USED RESPIRATORY PROTECTION SYSTEM.

**CONTROL OF ENVIRONMENTAL EXPOSURE**

DO NOT LET PRODUCT ENTER DRAINS. RISK OF EXPLOSION.

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

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**INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES**

APPEARANCE	Colorless, yellow or orange clear liquid
ODOUR	NO DATA AVAILABLE
ODOUR THRESHOLD	NO DATA AVAILABLE
PH	NO DATA AVAILABLE
MELTING POINT/FREEZING POINT	-60 °C



INITIAL BOILING POINT AND BOILING RANGE	124 °C
FLASH POINT	48 °C
EVAPORATION RATE	NO DATA AVAILABLE
FLAMMABILITY (SOLID, GAS)	NO DATA AVAILABLE
UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS	UPPER EXPLOSION LIMIT: 36 %(V) LOWER EXPLOSION LIMIT: 1.9 %(V)
VAPOUR PRESSURE	2.7 HPA AT 20 °C
VAPOUR DENSITY	4.90 - (AIR = 1.0)
RELATIVE DENSITY	1.15
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**

RELATIVE VAPOR DENSITY	4.90 - (AIR = 1.0)
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**SECTION 10. STABILITY AND REACTIVITY**

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<b>REACTIVITY</b>	VAPOR/AIR-MIXTURES ARE EXPLOSIVE AT INTENSE WARMING.
<b>CHEMICAL STABILITY</b>	SENSITIVE TO MOISTURE
<b>POSSIBILITY OF HAZARDOUS REACTIONS</b>	NO DATA AVAILABLE
<b>CONDITIONS TO AVOID</b>	WATER HYDROLYZES MATERIAL LIBERATING ACIDIC GAS WHICH IN CONTACT WITH METAL SURFACES CAN GENERATE FLAMMABLE AND/OR EXPLOSIVE HYDROGEN GAS. DO NOT ALLOW WATER TO ENTER CONTAINER BECAUSE OF VIOLENT REACTION. HEATING. MOISTURE.
<b>INCOMPATIBLE MATERIALS</b>	METALS, ACIDS, BASES, ALCOHOLS, ALKALI METALS, OXIDIZING AGENTS, WATER

**HAZARDOUS  
DECOMPOSITION  
PRODUCTS**

HAZARDOUS DECOMPOSITION PRODUCTS FORMED  
UNDER FIRE CONDITIONS. - CARBON OXIDES,  
HYDROGEN FLUORIDE, BORANE/BORON OXIDES  
OTHER DECOMPOSITION PRODUCTS - NO DATA  
AVAILABLE  
IN THE EVENT OF FIRE: SEE SECTION 5

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**SECTION 11. TOXICOLOGICAL INFORMATION**

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**INFORMATION ON TOXICOLOGICAL EFFECTS**

**ACUTE TOXICITY**

LD50 ORAL - RAT - MALE AND FEMALE - 326 MG/KG  
REMARKS: THE VALUE IS GIVEN IN ANALOGY TO  
THE FOLLOWING SUBSTANCES:

LC50 INHALATION - RAT - 4 H - 1.2 MG/L  
REMARKS: (BORON TRIFLUORIDE) (FOR THE  
DIHYDRATE) (EXTERNAL MSDS)

DERMAL: NO DATA AVAILABLE

NO DATA AVAILABLE

**SKIN  
CORROSION/IRRITATION**

SKIN RABBIT  
RESULT: CAUSES BURNS.  
REMARKS: (ECHA)

**SERIOUS EYE  
DAMAGE/EYE IRRITATION**

EYES RABBIT  
RESULT: CORROSIVE

**RESPIRATORY OR SKIN  
SENSITISATION**

NO DATA AVAILABLE

**GERM CELL  
MUTAGENICITY**

AMES TEST  
SALMONELLA TYPHIMURIUM  
RESULT: NEGATIVE  
IN VITRO MAMMALIAN CELL GENE MUTATION TEST  
MOUSE LYMPHOMA CELLS  
RESULT: NEGATIVE  
CHROMOSOME ABERRATION TEST IN VITRO  
LYMPHOCYTE  
RESULT: NEGATIVE

**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.

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.
<b>REPRODUCTIVE TOXICITY</b>	NO DATA AVAILABLE
<b>SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE</b>	NO DATA AVAILABLE
<b>SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE</b>	INHALATION - THE SUBSTANCE OR MIXTURE IS CLASSIFIED AS SPECIFIC TARGET ORGAN TOXICANT, REPEATED EXPOSURE, CATEGORY 1. - KIDNEY
<b>ASPIRATION HAZARD</b>	NO DATA AVAILABLE
<b>ADDITIONAL INFORMATION</b>	<p>RTECS: NOT AVAILABLE</p> <p>FLUORIDE ION CAN REDUCE SERUM CALCIUM LEVELS POSSIBLY CAUSING FATAL HYPOCALCEMIA.</p> <p>MATERIAL IS EXTREMELY DESTRUCTIVE TO TISSUE OF THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT, EYES, AND SKIN., BURNING SENSATION, COUGH, WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA, VOMITING</p> <p>TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.</p> <p>LIVER - IRREGULARITIES - BASED ON HUMAN EVIDENCE</p>

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## SECTION 12. ECOLOGICAL INFORMATION

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<b>TOXICITY</b>	
TOXICITY TO FISH	STATIC TEST LC50 - LEUCISCUS IDUS (GOLDEN ORFE) - > 22 - < 46 MG/L - 96 H (DIN 38412 PART 15)
TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES	STATIC TEST EC50 - DAPHNIA MAGNA (WATER FLEA) - 31.7 MG/L - 48 H (REGULATION (EC) NO. 440/2008, ANNEX, C.2)

TOXICITY TO ALGAE	STATIC TEST ERC50 - DESMODESMUS SUBSPICATUS (GREEN ALGAE) - > 10 MG/L - 72 H
TOXICITY TO BACTERIA	REMARKS: (ECHA) STATIC TEST EC50 - PSEUDOMONAS PUTIDA - > 100 MG/L - 16 H (DIN 38421 TEIL 8)
<b>PERSISTENCE AND DEGRADABILITY</b>	
BIODEGRADABILITY	AEROBIC - EXPOSURE TIME 28 D RESULT: 2.5 % - NOT READILY BIODEGRADABLE. (OECD TEST GUIDELINE 301C)
<b>BIOACCUMULATIVE POTENTIAL</b>	
BIOACCUMULATION	CYPRINUS CARPIO (CARP)(BORON TRIFLUORIDE-DIETHYL ETHER COMPLEX (1:1))  BIOCONCENTRATION FACTOR (BCF): > 0.9 - < 1.4 (OECD TEST GUIDELINE 305C)
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

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## SECTION 13. DISPOSAL CONSIDERATIONS

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### WASTE TREATMENT METHODS

PRODUCT	WASTE MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH THE NATIONAL AND LOC NO MIXING WITH OTHER WASTE. HANDLE UNCLEANNED CONTAINERS LIKE THE PRODUCT FOR PROCESSES REGARDING THE RETURN OF CHEMICALS AND CONTAINERS, OR CONTACT US THERE IF YOU HAVE FURTHER QUESTIONS.
CONTAMINATED PACKAGING	DISPOSE OF AS UNUSED PRODUCT.

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## SECTION 14. TRANSPORT INFORMATION

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DOT (US)	
PROPER SHIPPING NAME:	BORON TRIFLUORIDE DIETHYL ETHERATE
UN NUMBER:	2604

CLASS: 8 (3)  
PACKING GROUP: I  
REPORTABLE QUANTITY  
(RQ):  
POISON INHALATION HAZARD: NO

**IMDG**

PROPER SHIPPING NAME: BORON TRIFLUORIDE DIETHYL ETHERATE  
UN NUMBER: 2604  
CLASS: 8 (3)  
PACKING GROUP: I  
EMS-NO: F-E, S-C

**IATA**

PROPER SHIPPING NAME: BORON TRIFLUORIDE DIETHYL ETHERATE  
UN NUMBER: 2604  
CLASS: 8 (3)  
PACKING GROUP: I

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**SECTION 15. REGULATORY INFORMATION**

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**SARA 302 COMPONENTS** THIS MATERIAL DOES NOT CONTAIN ANY COMPONENTS WITH A SECTION 302 EHS TPQ.

**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** FIRE HAZARD, ACUTE HEALTH HAZARD, CHRONIC HEALTH HAZARD

**MASSACHUSETTS RIGHT TO KNOW COMPONENTS**

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

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**SECTION 16. OTHER INFORMATION**

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

H226 FLAMMABLE LIQUID AND VAPOR.  
H302 HARMFUL IF SWALLOWED.  
H314 CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.  
H330 FATAL IF INHALED.  
H372 CAUSES DAMAGE TO ORGANS (KIDNEY) THROUGH PROLONGED OR REPEATED EXPOSURE IF INHALED.  
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 SERVICE REGISTRY NUMBER
OSHA:	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PEL:	PERMISSIBLE EXPOSURE LIMIT (OSHA)
TLV:	THRESHOLD LIMIT VALUE (ACGIH)

IMPORTANT:

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