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SAFETY DATA SHEET

SECTION 1. CHEMICAL IDENTIFICATION

CATALOG #:	02056
NAME:	O-(Benzotriazol-1-yl)- <i>N,N,N',N'</i> -tetramethyluronium tetrafluoroborate
SYNONYMS:	TBTU
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
FLAMMABLE SOLIDS (CATEGORY 1), H228

SKIN SENSITIZATION (SUB-CATEGORY 1A), H317

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)

H228 FLAMMABLE SOLID.
H317 MAY CAUSE AN ALLERGIC SKIN REACTION.

PRECAUTIONARY STATEMENT(S)

P210 KEEP AWAY FROM HEAT/SPARKS/OPEN FLAMES/HOT SURFACES. NO SMOKING.
P240 GROUND/BOND CONTAINER AND RECEIVING EQUIPMENT.
P241 USE EXPLOSION-PROOF ELECTRICAL/ VENTILATING/ LIGHTING EQUIPMENT.
P261 AVOID BREATHING DUST/ FUME/ GAS/ MIST/ VAPOURS/ SPRAY.
P272 CONTAMINATED WORK CLOTHING MUST NOT BE ALLOWED OUT OF THE WORKPLACE.
P280 WEAR PROTECTIVE GLOVES/ EYE PROTECTION/ FACE PROTECTION.
P302 + P352 IF ON SKIN: WASH WITH PLENTY OF SOAP AND WATER.
P333 + P313 IF SKIN IRRITATION OR RASH OCCURS: GET MEDICAL ADVICE/ ATTENTION.
P363 WASH CONTAMINATED CLOTHING BEFORE REUSE.
P370 + P378 IN CASE OF FIRE: USE DRY SAND, DRY CHEMICAL OR ALCOHOL-RESISTANT FOAM TO EXTINGUISH.
P501 DISPOSE OF CONTENTS/ CONTAINER TO AN APPROVED WASTE DISPOSAL PLANT.

HAZARDS NOT OTHERWISE CLASSIFIED (HNOC) OR NOT COVERED BY GHS NONE

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

MF: $C_{11}H_{16}N_5O \cdot BF_4$
MW: 321.10
CAS-NO. 125700-67-6

PURITY: \geq 98% (HPLC)

HAZARDOUS COMPONENTS

COMPONENT	CLASSIFICATION	CONCENTRATION
O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate		
	FLAM. SOL. 1; SKIN SENS. 1A; H228, H317	\leq 100 %

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	SHOW THIS MATERIAL SAFETY DATA SHEET TO THE DOCTOR IN ATTENDANCE.
IF INHALED	AFTER INHALATION: FRESH AIR.
IN CASE OF SKIN CONTACT	TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING. RINSE SKIN WITH WATER/ SHOWER. CONSULT A PHYSICIAN.
IN CASE OF EYE CONTACT	RINSE OUT WITH PLENTY OF WATER. REMOVE CONTACT LENSES.
IF SWALLOWED	IMMEDIATELY MAKE VICTIM DRINK WATER (TWO GLASSES AT MOST). 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 WATER FOAM CARBON DIOXIDE (CO ₂) DRY POWDER
	UNSUITABLE EXTINGUISHING MEDIA FOR THIS SUBSTANCE/MIXTURE NO LIMITATIONS OF EXTINGUISHING AGENTS ARE GIVEN.
SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE	CARBON OXIDES NITROGEN OXIDES (NO _x) HYDROGEN FLUORIDE BORANE/BORON OXIDES COMBUSTIBLE. EXPLOSIVE DECOMPOSITION POSSIBLE ON HEATING. 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	SUPPRESS (KNOCK DOWN) GASES/VAPORS/MISTS WITH A WATER SPRAY JET. PREVENT FIRE EXTINGUISHING WATER FROM CONTAMINATING SURFACE WATER OR THE GROUND WATER SYSTEM.

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES	ADVICE FOR NON-EMERGENCY PERSONNEL: AVOID INHALATION OF DUSTS. AVOID SUBSTANCE CONTACT. ENSURE ADEQUATE VENTILATION. 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 DRY. DISPOSE OF PROPERLY. CLEAN UP AFFECTED AREA. AVOID GENERATION OF DUSTS.
REFERENCE TO OTHER SECTIONS	FOR DISPOSAL SEE SECTION 13.

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING	KEEP AWAY FROM OPEN FLAMES, HOT SURFACES AND SOURCES OF IGNITION. TAKE PRECAUTIONARY MEASURES AGAINST STATIC DISCHARGE. IMMEDIATELY CHANGE CONTAMINATED CLOTHING. APPLY PREVENTIVE SKIN PROTECTION. WASH HANDS AND FACE AFTER WORKING WITH SUBSTANCE. FOR PRECAUTIONS SEE SECTION 2.2.
CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES	TIGHTLY CLOSED AND AWAY FROM SOURCES OF IGNITION AND HEAT. OBSERVE NATIONAL REGULATIONS. LIGHT SENSITIVE. STORE UNDER INERT GAS. MOISTURE SENSITIVE. Store at 0 - 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

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). SAFETY GLASSES

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 EN 16523-1 PLEASE CONTACT THE SUPPLIER OF CE-APPROVED GLOVES.

FULL CONTACT

MATERIAL: NITRILE RUBBER
MINIMUM LAYER THICKNESS: 0.11 MM
BREAK THROUGH TIME: 480 MIN
MATERIAL TESTED:KCL 741 DERMATRIL

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.

SPLASH CONTACT

MATERIAL: NITRILE RUBBER
MINIMUM LAYER THICKNESS: 0.11 MM
BREAK THROUGH TIME: 480 MIN
MATERIAL TESTED:KCL 741

BODY PROTECTION

FLAME RETARDANT ANTISTATIC PROTECTIVE CLOTHING.

RESPIRATORY PROTECTION

RECOMMENDED FILTER TYPE: FILTER TYPE P2
THE ENTREPRENEUR HAS TO ENSURE THAT MAINTENANCE, CLEANING AND TESTING OF RESPIRATORY PROTECTIVE DEVICES ARE CARRIED OUT ACCORDING TO THE INSTRUCTIONS OF THE PRODUCER.
THESE MEASURES HAVE TO BE PROPERLY DOCUMENTED.
REQUIRED WHEN DUSTS 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.

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	200 - 214 °C
POINT/FREEZING POINT	
INITIAL BOILING POINT	
AND BOILING RANGE	
FLASH POINT	
EVAPORATION RATE	NO DATA AVAILABLE
FLAMMABILITY (SOLID, GAS)	THE SUBSTANCE OR MIXTURE IS A FLAMMABLE SOLID WITH THE CATEGORY 1.
UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS	NO DATA AVAILABLE
VAPOUR PRESSURE	NO DATA AVAILABLE
VAPOUR DENSITY	NO DATA AVAILABLE
RELATIVE DENSITY	
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	THE FOLLOWING APPLIES IN GENERAL TO FLAMMABLE ORGANIC SUBSTANCES AND MIXTURES: IN CORRESPONDINGLY FINE DISTRIBUTION, WHEN WHIRLED UP A DUST EXPLOSION POTENTIAL MAY GENERALLY BE ASSUMED.
CHEMICAL STABILITY	THE PRODUCT IS CHEMICALLY STABLE UNDER STANDARD AMBIENT CONDITIONS.
POSSIBILITY OF HAZARDOUS REACTIONS	VIOLENT REACTIONS POSSIBLE WITH: STRONG ALKALIS STRONG OXIDIZING AGENTS

CONDITIONS TO AVOID	EXPOSURE TO MOISTURE. HEATING (EXPLOSIVE DECOMPOSITION).
INCOMPATIBLE MATERIALS	NO DATA AVAILABLE
HAZARDOUS DECOMPOSITION PRODUCTS	IN THE EVENT OF FIRE: SEE SECTION 5

SECTION 11. TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

ACUTE TOXICITY	ORAL: NO DATA AVAILABLE SYMPTOMS: IRRITATIONS OF MUCOUS MEMBRANES IN THE MOUTH, PHARYNX, OESOPHAGUS AND GASTROINTESTINAL TRACT. INHALATION: IRRITATING TO RESPIRATORY SYSTEM. SYMPTOMS: MUCOSAL IRRITATIONS, COUGH, SHORTNESS OF BREATH, POSSIBLE DAMAGES: DAMAGE OF RESPIRATORY TRACT DERMAL: NO DATA AVAILABLE NO DATA AVAILABLE
SKIN CORROSION/IRRITATION	SKIN - RECONSTRUCTED HUMAN EPIDERMIS (RHE) RESULT: NO SKIN IRRITATION
SERIOUS EYE DAMAGE/EYE IRRITATION	EYES - BOVINE CORNEA
RESPIRATORY OR SKIN SENSITISATION	LOCAL LYMPH NODE ASSAY (LLNA) MOUSE RESULT: CAUSES SENSITIZATION. THE PRODUCT IS A SKIN SENSITIZER, SUB-CATEGORY 1A. (OECD TEST GUIDELINE 429)
GERM CELL MUTAGENICITY	NO DATA AVAILABLE
CARCINOGENICITY	
IARC:	NO INGREDIENT 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 INGREDIENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS

OSHA:	IDENTIFIED AS A KNOWN OR ANTICIPATED CARCINOGEN BY NTP. 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	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	TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED. THE FOLLOWING APPLIES TO BORON COMPOUNDS IN GENERAL: RESORPTION IS FOLLOWED BY NAUSEA AND VOMITING, AGITATION, SPASMS, CNS DISORDERS, CARDIOVASCULAR DISORDERS. OTHER DANGEROUS PROPERTIES CAN NOT BE EXCLUDED. HANDLE IN ACCORDANCE WITH GOOD INDUSTRIAL HYGIENE AND SAFETY PRACTICE.

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

DEPENDING ON THE CONCENTRATION, PHOSPHORUS AND/OR NITROGEN COMPOUNDS MAY CONTRIBUTE TO THE EUTROPHICATION OF DRINKING- WATER SUPPLIES.
DISCHARGE INTO THE ENVIRONMENT MUST BE AVOIDED.

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS

PRODUCT

WASTE MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH THE NATIONAL AND LOCAL REGULATIONS. LEAVE CHEMICALS IN ORIGINAL CONTAINERS. NO MIXING WITH OTHER WASTE.

CONTAMINATED PACKAGING

DISPOSE OF AS UNUSED PRODUCT.

SECTION 14. TRANSPORT INFORMATION

DOT (US)

PROPER SHIPPING NAME: FLAMMABLE SOLIDS, ORGANIC, N.O.S. (O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate)

UN NUMBER: 1325

CLASS: 4.1

PACKING GROUP: II

REPORTABLE QUANTITY (RQ):

POISON INHALATION HAZARD: NO

IMDG

PROPER SHIPPING NAME: FLAMMABLE SOLIDS, ORGANIC, N.O.S. (O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate)

UN NUMBER: 1325

CLASS: 4.1

PACKING GROUP: II

EMS-NO: F-A, S-G

IATA

PROPER SHIPPING NAME: FLAMMABLE SOLIDS, ORGANIC, N.O.S. (O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate)

UN NUMBER: 1325

CLASS: 4.1
PACKING GROUP: II

SECTION 15. REGULATORY INFORMATION

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.

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.

H228 FLAMMABLE SOLID.
H317 MAY CAUSE AN ALLERGIC SKIN REACTION.

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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