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SAFETY DATA SHEET

SECTION 1. CHEMICAL IDENTIFICATION

CATALOG #: 36745

NAME: Tetraethylammonium borohydride

SYNONYMS: Tetraethylammonium tetrahydroborate

TEAB

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)

CHEMICALS WHICH, IN CONTACT WITH WATER, EMIT FLAMMABLE GASES (CATEGORY 2), $\rm H261$

SKIN IRRITATION (CATEGORY 2), H315

EYE IRRITATION (CATEGORY 2A), H319

SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (CATEGORY 3), RESPIRATORY SYSTEM, H335

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)

IN CONTACT WITH WATER RELEASES FLAMMABLE GASES. H261

H315 CAUSES SKIN IRRITATION.

H319 CAUSES SERIOUS EYE IRRITATION. H335 MAY CAUSE RESPIRATORY IRRITATION.

PRECAUTIONARY STATEMENT(S)

P223	DO NOT ALLOW CONTACT WITH WATER.
P231 + P232	HANDLE UNDER INERT GAS. PROTECT FROM MOISTURE.
P261	AVOID BREATHING DUST/ FUME/ GAS/ MIST/ VAPOURS/ SPRAY.
P264	WASH SKIN THOROUGHLY AFTER HANDLING.
P271	USE ONLY OUTDOORS OR IN A WELL-VENTILATED AREA.
P280	WEAR PROTECTIVE GLOVES/ EYE PROTECTION/ FACE
	PROTECTION.
P302 + P352	IF ON SKIN: WASH WITH PLENTY OF SOAP AND WATER.
P304 + P340 + P312	IF INHALED: REMOVE PERSON TO FRESH AIR AND KEEP

COMFORTABLE FOR BREATHING. CALL A POISON CENTER/DOCTOR

IF YOU FEEL UNWELL.

P305 + P351 + P338IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL

MINUTES. REMOVE CONTACT LENSES, IF PRESENT AND EASY TO

DO. CONTINUE RINSING.

P332 + P313IF SKIN IRRITATION OCCURS: GET MEDICAL ADVICE/ATTENTION. P335 + P334

BRUSH OFF LOOSE PARTICLES FROM SKIN. IMMERSE IN COOL

WATER/ WRAP IN WET BANDAGES.

P337 + P313IF EYE IRRITATION PERSISTS: GET MEDICAL ADVICE/ ATTENTION. P362 TAKE OFF CONTAMINATED CLOTHING AND WASH BEFORE REUSE. IN CASE OF FIRE: USE DRY SAND, DRY CHEMICAL OR ALCOHOL-P370 + P378

RESISTANT FOAM TO EXTINGUISH.

P402 + P404STORE IN A DRY PLACE. STORE IN A CLOSED CONTAINER.

P403 + P233STORE IN A WELL-VENTILATED PLACE. KEEP CONTAINER TIGHTLY

CLOSED.

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** MF: $C_8H_{24}NB$

MW: 145.09

CAS-NO. 17083-85-1

PURITY: $\geq 95\%$ (Assay by titration)

HAZARDOUS COMPONENTS

COMPONENT	CLASSIFICATION	CONCENTRATION	
Tetraethylammonium borohydride			
	WATER-REACT. 2; SKIN IRRIT. 2; EYE IRRIT. 2A; STOT SE 3; H261, H315, H319, H335	<= 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 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. CONSULT A

CONTACT 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 EFFECTS

SYMPTOMS AND ARE DESCRIBED IN THE LABELLING (SEE SECTION 2.2)

EFFECTS, BOTH ACUTE AND/OR IN SECTION 11

AND DELAYED

INDICATION OF ANY NO DATA AVAILABLE

IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

SECTION 5. FIRE AND EXPLOSION DATA

EXTINGUISHING MEDIA

SUITABLE SUITABLE EXTINGUISHING MEDIA

EXTINGUISHING MEDIA DRY POWDER DRY SAND

UNSUITABLE EXTINGUISHING MEDIA

DO NOT USE WATER JET.

SPECIAL HAZARDS CARBON OXIDES, NITROGEN OXIDES (NOX),

ARISING FROM THE BORANE/BORON OXIDES

SUBSTANCE OR MIXTURE

ADVICE FOR WEAR SELF-CONTAINED BREATHING APPARATUS FOR

FIREFIGHTERS FIREFIGHTING 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 GAS.

PROTECTIVE EQUIPMENT ENSURE ADEQUATE VENTILATION. EVACUATE PERSONNEL

AND EMERGENCY TO SAFE AREAS. AVOID BREATHING DUST.

FOR PERSONAL PROTECTION SEE SECTION 8.

ENVIRONMENTAL PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO

PRECAUTIONS SO. DO NOT LET PRODUCT ENTER DRAINS.

METHODS ANDSWEEP UP AND SHOVEL. CONTAIN SPILLAGE, AND THENMATERIALS FORCOLLECT WITH AN ELECTRICALLY PROTECTED VACUUM

CONTAINMENT ANDCLEANER OR BY WET-BRUSHING AND PLACE INCLEANING UPCONTAINER FOR DISPOSAL ACCORDING TO LOCAL

REGULATIONS (SEE SECTION 13). DO NOT FLUSH WITH WATER. KEEP IN SUITABLE, CLOSED CONTAINERS FOR

DISPOSAL.

REFERENCE TO OTHER FOR DISPOSAL SEE SECTION 13.

SECTIONS

PROCEDURES

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING

AVOID CONTACT WITH SKIN AND EYES. AVOID FORMATION OF DUST AND AEROSOLS.FURTHER

PROCESSING OF SOLID MATERIALS MAY RESULT IN THE FORMATION OF COMBUSTIBLE DUSTS. THE POTENTIAL FOR COMBUSTIBLE DUST FORMATION SHOULD BE TAKEN INTO CONSIDERATION BEFORE ADDITIONAL PROCESSING

OCCURS.

PROVIDE APPROPRIATE EXHAUST VENTILATION AT PLACES WHERE DUST IS FORMED.KEEP AWAY FROM

SOURCES OF IGNITION - NO SMOKING. FOR PRECAUTIONS SEE SECTION 2.2.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES KEEP CONTAINER TIGHTLY CLOSED IN A DRY AND WELL-

VENTILATED PLACE.

NEVER ALLOW PRODUCT TO GET IN CONTACT WITH

WATER DURING STORAGE.

STORE UNDER INERT GAS. MOISTURE SENSITIVE.

Store at RT

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

HANDLE IN ACCORDANCE WITH GOOD INDUSTRIAL ENGINEERING CONTROLS HYGIENE AND SAFETY PRACTICE. WASH HANDS BEFORE

BREAKS AND AT THE END OF WORKDAY.

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION

SAFETY GLASSES WITH SIDE-SHIELDS CONFORMING TO EN166 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: NITRILE RUBBER

MINIMUM LAYER THICKNESS: 0.11 MM

BREAK THROUGH TIME: 480 MIN

MATERIAL TESTED: DERMATRIL (KCL 740, SIZE M)

SPLASH CONTACT

MATERIAL: NITRILE RUBBER

MINIMUM LAYER THICKNESS: 0.11 MM

BREAK THROUGH TIME: 480 MIN

MATERIAL TESTED: DERMATRIL (KCL 740, 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

IMPERVIOUS CLOTHING, FLAME RETARDANT 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 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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE Almost colorless solid
ODOUR NO DATA AVAILABLE
ODOUR THRESHOLD NO DATA AVAILABLE
PH NO DATA AVAILABLE

MELTING > 230 °C

POINT/FREEZING POINT

BOILING POINT 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 REACTS VIOLENTLY WITH WATER.

HAZARDOUS REACTIONS

CONDITIONS TO AVOID EXPOSURE TO MOISTURE

INCOMPATIBLE STRONG OXIDIZING AGENTS

MATERIALS

HAZARDOUS DECOMPOSITION PRODUCTS HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS. - CARBON OXIDES, NITROGEN OXIDES

(NOX), BORANE/BORON 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 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 N SENSITISATION

NO DATA AVAILABLE

GERM CELL
MUTAGENICITY

NO DATA AVAILABLE

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.

REPRODUCTIVE TOXICITY NO DATA AVAILABLE

SPECIFIC TARGET ORGAN
TOYLCITY SINCLE

TOXICITY - SINGLE

EXPOSURE

INHALATION - MAY CAUSE RESPIRATORY IRRITATION.

SPECIFIC TARGET ORGAN TOXICITY - REPEATED

NO DATA AVAILABLE

EXPOSURE

ASPIRATION HAZARD

NO DATA AVAILABLE

ADDITIONAL INFORMATION

RTECS: BS5850000

TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT

BEEN THOROUGHLY INVESTIGATED.

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 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: WATER-REACTIVE SOLID, TOXIC, N.O.S.

(TETRAETHYLAMMONIUM TETRAHYDROBORATE)

UN NUMBER: 3134 CLASS: 4.3 (6.1) PACKING GROUP: II

REPORTABLE QUANTITY

(RQ):

POISON INHALATION NO

HAZARD:

IMDG

PROPER SHIPPING NAME: WATER-REACTIVE SOLID, TOXIC, N.O.S.

(TETRAETHYLAMMONIUM TETRAHYDROBORATE)

UN NUMBER: 3134
CLASS: 4.3 (6.1)
PACKING GROUP: II

EMS-NO: F-G, S-N

IATA

PROPER SHIPPING NAME: WATER-REACTIVE SOLID, TOXIC, N.O.S.

(TETRAETHYLAMMONIUM TETRAHYDROBORATE)

UN NUMBER: 3134 CLASS: 4.3 (6.1) 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 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 REACTIVITY HAZARD, ACUTE HEALTH HAZARD

MASSACHUSETTS RIGHT TO KNOW COMPONENTS

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

PENNSYLVANIA RIGHT TO KNOW COMPONENTS

CAS NO. REVISION DATE

Tetraethylammonium

Tetraethylammonium

borohydride

17083-85-1

NEW JERSEY RIGHT TO KNOW COMPONENTS

CAS NO.

17083-85-1

borohydride

SECTION 16. OTHER INFORMATION

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

H261 IN CONTACT WITH WATER RELEASES FLAMMABLE GASES.

REVISION DATE

H315 CAUSES SKIN IRRITATION.

H319 CAUSES SERIOUS EYE IRRITATION. H335 MAY CAUSE RESPIRATORY IRRITATION.

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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