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TELEX: 910-761-0593 or 434475 ANSWERBACK "SIG OK COLLECT"

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THE WORLD'S FOREMOST MANUFACTURER OF RESEARCH
BIOCHEMICALS AND DIAGNOSTIC REAGENTS

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DATE 06/04/96
CUST#: 2-097-94816
PO#: UNF-64287

MATERIAL SAFETY DATA SHEET PAGE 1

SECTION 1. CHEMICAL IDENTIFICATION

CATALOG #: B9876
NAME: BORAX SIGMA GRADE

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #: 1303-96-4
MF: B4NA2O7

SYNONYMS

ANTIPYONIN * BORASCU * BORATES, TETRA, SODIUM SALT, DECAHYDRATE
(ACGIH) * BORAX (SCI) * BORAX DECAHYDRATE * BORICIN * GERTLEY BORATE *
JAIKIN * NEOBOR * POLYBOR * SODIUM BIBORATE * SODIUM BIBORATE
DECAHYDRATE * SODIUM PYROBORATE * SODIUM PYROBORATE DECAHYDRATE *
SODIUM TETRABORATE * SODIUM TETRABORATE DECAHYDRATE * TRONABOR *

SECTION 3. HAZARDS IDENTIFICATION

LABEL PRECAUTIONARY STATEMENTS

HARMFUL
HARMFUL IF SWALLOWED.
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
TARGET ORGAN(S):
CENTRAL NERVOUS SYSTEM
KIDNEYS
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF
WATER AND SEEK MEDICAL ADVICE.
WEAR SUITABLE PROTECTIVE CLOTHING.

SECTION 4. FIRST-AID MEASURES

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS OF
WATER FOR AT LEAST 15 MINUTES.
IN CASE OF CONTACT, IMMEDIATELY WASH SKIN WITH SOAP AND COPIOUS
AMOUNTS OF WATER.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL
RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.
CALL A PHYSICIAN.
WASH CONTAMINATED CLOTHING BEFORE REUSE.

SECTION 5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

SPECIAL FIREFIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO
PREVENT CONTACT WITH SKIN AND EYES.

CONTINUED ON NEXT PAGE

BRANCH OFFICES AT:

Table listing branch offices for SIGMA-ALDRICH in various countries including USA, Canada, Europe, and Asia.



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MATERIAL SAFETY DATA SHEET PAGE 2

CATALOG #: B9876
NAME: BORAX SIGMA GRADE

UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

SECTION 6. ACCIDENTAL RELEASE MEASURES

EVACUATE AREA.
WEAR RESPIRATOR, CHEMICAL SAFETY GOGGLES, RUBBER BOOTS AND HEAVY RUBBER GLOVES.
SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.
AVOID RAISING DUST.
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

SECTION 7. HANDLING AND STORAGE

REFER TO SECTION 8.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.
SAFETY SHOWER AND EYE BATH.
MECHANICAL EXHAUST REQUIRED.
DO NOT BREATHE DUST.
AVOID CONTACT WITH EYES, SKIN AND CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
WASH THOROUGHLY AFTER HANDLING.
HARMFUL SOLID.
IRRITANT.
KEEP TIGHTLY CLOSED.
STORE IN A COOL DRY PLACE.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR
WHITE POWDER

PHYSICAL PROPERTIES
SPECIFIC GRAVITY: 1.730

SECTION 10. STABILITY AND REACTIVITY

INCOMPATIBILITIES
STRONG OXIDIZING AGENTS
SENSITIVE TO AIR

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
BORON OXIDES.

SECTION 11. TOXICOLOGICAL INFORMATION

ACUTE EFFECTS

CONTINUED ON NEXT PAGE

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Table listing branch offices for SIGMA-ALDRICH in various countries including Germany, Spain, Czech Republic, Belgium, Switzerland, Mexico, India, France, Italy, Australia, Brazil, England, Hungary, and South Korea.



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M A T E R I A L S A F E T Y D A T A S H E E T PAGE 3

CATALOG #: B9876
NAME: BORAX SIGMA GRADE

HARMFUL IF SWALLOWED.
MAY BE HARMFUL IF INHALED.
MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN.
CAUSES EYE AND SKIN IRRITATION.
MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER
RESPIRATORY TRACT.
TARGET ORGAN(S):
CENTRAL NERVOUS SYSTEM
KIDNEYS
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND
TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

ADDITIONAL INFORMATION
INGESTION OF 5-10 GRAMS HAS PRODUCED SEVERE VOMITING, DIARRHEA, SHOCK
AND DEATH.

RTECS #: VZ2275000
SODIUM BORATE, DECAHYDRATE

TOXICITY DATA

ORL-INF LDLO:1 GM/KG	PCOC** - 144,66
ORL-MAN LDLO:709 MG/KG	JAMAAP 76,378,21
ORL-RAT LD50:2660 MG/KG	FMCHA2 -,648,91
ORL-MUS LD50:2 GM/KG	14KTAK -,693,64
IPR-MUS LD50:2711 MG/KG	AIPTAK 143,144,63
IVN-MUS LD50:1320 MG/KG	14KTAK -,693,64
ORL-GPC LD50:5330 MG/KG	14KTAK -,693,64

TARGET ORGAN DATA
BEHAVIORAL (CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD)
CARDIAC (CHANGE IN RATE)
GASTROINTESTINAL (NAUSEA OR VOMITING)
ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES
(RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR
COMPLETE INFORMATION.

SECTION 12. - - - - - ECOLOGICAL INFORMATION - - - - -

DATA NOT YET AVAILABLE.

SECTION 13. - - - - - DISPOSAL CONSIDERATIONS - - - - -

FOR SMALL QUANTITIES: CAUTIOUSLY ADD TO A LARGE STIRRED EXCESS OF
WATER. ADJUST THE PH TO NEUTRAL, SEPARATE ANY INSOLUBLE SOLIDS OR
LIQUIDS AND PACKAGE THEM FOR HAZARDOUS-WASTE DISPOSAL. FLUSH THE
AQUEOUS SOLUTION DOWN THE DRAIN WITH PLENTY OF WATER. THE HYDROLYSIS
AND NEUTRALIZATION REACTIONS MAY GENERATE HEAT AND FUMES WHICH CAN BE
CONTROLLED BY THE RATE OF ADDITION.
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. - - - - - TRANSPORT INFORMATION - - - - -

CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

CONTINUED ON NEXT PAGE

BRANCH OFFICES AT:

- | | | | | | | |
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| SIGMA-ALDRICH
/ERTRIEBS GmbH
Grünwalder Weg 30
12041 Deisenhofen
Deutschland | SIGMA-ALDRICH QUIMICA, S.A.
Apt. Correos 161
28100 Alcobendas
(Madrid)
España | SIGMA-ALDRICH s.r.o.
Krizikova 27
166 00 Praha 8
Ceská Republika | SIGMA CHEMIE
K. Cardijnplein, 8
B-2880 Bornem
Belgie/Belgique | SIGMA CHEMIE
P.O. Box 260
CH-9470 Buchs
Switzerland | SIGMA-ALDRICH QUIMICA, S.A. de C.V.
Avenida Picacho Ajusco No. 130-303
Fraccionamiento Jardines en la Montaña
14210 Mexico, D.F. | SIGMA-ALDRICH CORPORATION
New Delhi Location
B-4/158, Sakdarjung Enclave
New Delhi - 110 029
India |
| SIGMA CHIMIE
"ISLE D'Abauv Chasnes
S.P. 701
18297 St. Quentin Fallavier
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Via Gallarate 154
20151 Milano
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Castle Hill NSW 2154
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CUST#: 2-097-94816
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M A T E R I A L S A F E T Y D A T A S H E E T P A G E 4

CATALOG #: B9876
 NAME: BORAX SIGMA GRADE

SECTION 15. - - - - - REGULATORY INFORMATION - - - - -

EUROPEAN INFORMATION

CAUTION: SUBSTANCE NOT YET FULLY TESTED.

HARMFUL

R 22

HARMFUL IF SWALLOWED.

R 36/37/38

IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

S 26

IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF
 WATER AND SEEK MEDICAL ADVICE.

S 36

WEAR SUITABLE PROTECTIVE CLOTHING.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

ACGIH TLV-TWA 5 MG/M3

85IN8 6,141,91

EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION

FEREAC 54,7740,89

OEL-AUSTRALIA:TWA 5 MG/M3 JAN93

OEL-BELGIUM:TWA 5 MG/M3 JAN93

OEL-DENMARK:TWA 5 MG/M3 JAN93

OEL-FRANCE:TWA 5 MG/M3 JAN93

OEL-THE NETHERLANDS:TWA 5 MG/M3 JAN93

OEL-SWEDEN:TWA 2 MG/M3;STEL 5 MG/M3;SKIN JAN93

OEL-SWITZERLAND:TWA 5 MG/M3 JAN93

OEL-UNITED KINGDOM:TWA 5 MG/M3 JAN93

OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV

OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV

NIOSH REL TO BORATES, DECAHYDRATE-AIR:10H TWA 5 MG/M3

NIOSH* DHHS #92-100,92

NOES 1983: HZD T1956; NIS 196; TNF 29342; NOS 132; TNE 442072; TFE
 88646

NOES 1983: HZD X6986; NIS 3; TNF 143; NOS 4; TNE 1615; TFE 53

EPA TSCA SECTION 8(B) CHEMICAL INVENTORY

EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, OCTOBER 1995

SECTION 16. - - - - - OTHER INFORMATION - - - - -

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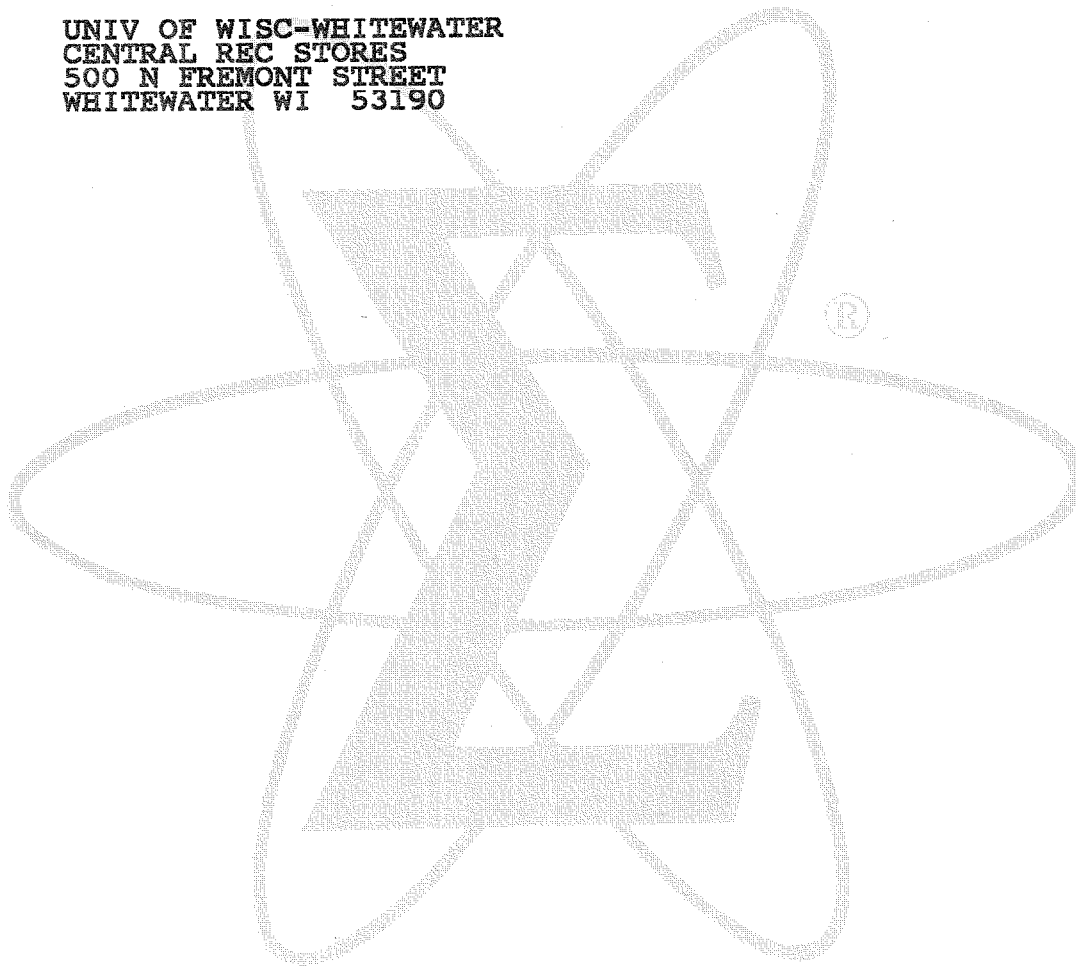
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M A T E R I A L S A F E T Y D A T A S H E E T P A G E 5

CATALOG #: B9876
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 WHITEWATER WI 53190



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