Product Number: S2002
Product Name: Sodium azide

Valid 05/2003 - 07/2003

Sigma Chemical Co.
P.O. Box 14508
St. Louis, MO 63178 USA
Tel: 314-771-5765

Material Safety Data Sheet

SECTION 1. - - - - - - - - - CHEMICAL IDENTIFICATION- - - - - - - - - -
CATALOG #: S2002
NAME: Sodium azide

SECTION 2. - - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - - -
CAS #: 26628-22-8
MF: N3NA
EC NO: 247-852-1
SYNONYMS
Azide, sodium * azoture de sodium (French) * azydek sodu (Polish) *
Kazo * natriumazid (German) * natriumazide (Dutch) * NC1-C06462 *
Nemazid * NSC 3072 * RCRA WASTE NUMBER P105 * smite * sodium azide
(ACGIH) * sodium, azoture de (French) * sodium, azoturo di (Italian) *
U-3886 *

SECTION 3. - - - - - - - - - HAZARDS IDENTIFICATION - - - - - - - - - -
LABEL PRECAUTIONARY STATEMENTS
HIGHLY TOXIC (USA)
VERY TOXIC (EU)
HEATING MAY CAUSE AN EXPLOSION.
VERY TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
CONTACT WITH ACIDS LIBERATES VERY TOXIC GAS.
VERY TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE
EFFECTS IN THE AQUATIC ENVIRONMENT.
READILY ABSORBED THROUGH SKIN.
SODIUM AZIDE MAY REACT WITH LEAD AND COPPER PLUMBING TO
FORM HIGHLY EXPLOSIVE METAL AZIDES.
TARGET ORGAN(S):
NERVES
HEART
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE
IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE
PROTECTION.
DO NOT BREATHE DUST.
HEAT-SENSITIVE.

SECTION 4. - - - - - - - - - FIRST-AID MEASURES- - - - - - - - - -
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.
CALL A PHYSICIAN IMMEDIATELY.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL
RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IN CASE OF SKIN CONTACT, FLUSH WITH COPIOUS AMOUNTS OF WATER
FOR AT LEAST 15 MINUTES. REMOVE CONTAMINATED CLOTHING AND
SHOES. CALL A PHYSICIAN.
IN CASE OF CONTACT WITH EYES, FLUSH WITH COPIOUS AMOUNTS OF WATER
FOR AT LEAST 15 MINUTES. ASSURE ADEQUATE FLUSHING BY SEPARATING
THE EYELIDS WITH FINGERS. CALL A PHYSICIAN.

SECTION 5. - - - - - - - - - FIRE FIGHTING MEASURES - - - - - - - - - -
EXTINGUISHING MEDIA
DRY CHEMICAL PONDER.
DO NOT USE WATER.
SPECIAL FIREFIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO
PREVENT CONTACT WITH SKIN AND EYES.
UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.
CONTAINER EXPLOSION MAY OCCUR UNDER FIRE CONDITIONS.
AZIDE REACTS WITH MANY HEAVY METALS SUCH AS LEAD, COPPER, MERCURY,
SILVER, GOLD TO FORM EXPLOSIVE COMPOUNDS. COPPER AND LEAD AZIDES ARE
MORE SENSITIVE THAN NITROGLYCERINE. AZIDE REACTS WITH METAL HALIDES TO GIVE A RANGE OF METAL AZIDE HALIDES, MANY OF WHICH ARE EXPLOSIVE. INCOMPATIBLE WITH CHROMYL CHLORIDE, HYDRAZINE, BROMINE, CARBON DISULFIDE, DIMETHYL SULFATE, DIBROMOMALONITRILE.

AN EXPLOSION OCCURRED WHEN A MIXTURE OF SODIUM AZIDE, Methylene Chloride, Dimethyl Sulfoxide, and Sulfuric Acid were being concentrated on a rotary evaporator.

SECTION 6. - - - - - - ACCIDENTAL RELEASE MEASURES- - - - - - WEAR SELF-CONTAINED BREATHING APPARATUS, 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.
EVACUATE AREA.

SECTION 7. - - - - - - HANDLING AND STORAGE- - - - - - REFER TO SECTION 8.

SECTION 8. - - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - - - - SAFETY SHOWER AND EYE BATH.
USE ONLY IN A CHEMICAL FUME HOOD.
Wash contaminated clothing before reuse.
Wash thoroughly after handling.
DO NOT BREATHE DUST.
DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
AvoID PROLONGED OR REPEATED EXPOSURE.
NIOSH/MSHA-APPROVED RESPIRATOR.
COMPATIBLE CHEMICAL-RESISTANT GLOVES.
CHEMICAL SAFETY GOGGLES.
KEEP TIGHTLY CLOSED.
STORE IN A COOL DRY place.

AZIDE REACTS WITH MANY HEAVY METALS SUCH AS LEAD, COPPER, MERCURY, SILVER, GOLD TO FORM EXPLOSIVE COMPOUNDS. COPPER AND LEAD AZIDES ARE MORE SENSITIVE THAN NITROGLYCERINE. AZIDE REACTS WITH METAL HALIDES TO GIVE A RANGE OF METAL AZIDE HALIDES, MANY OF WHICH ARE EXPLOSIVE. INCOMPATIBLE WITH CHROMYL CHLORIDE, HYDRAZINE, BROMINE, CARBON DISULFIDE, DIMETHYL SULFATE, DIBROMOMALONITRILE.

SECTION 9. - - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - - - APPEARANCE AND ODOR
SOLID.

PHYSICAL PROPERTIES
MELTING POINT: 275 C
SOLUBILITY:
WATER -226130
SPECIFIC GRAVITY: 1.846
PH: 9.0
SWISS POISON CLASS: 2

SECTION 10. - - - - - - STABILITY AND REACTIVITY - - - - - - STABILITY
STABLE.
CONDITIONS TO AVOID
HEAT-SENSITIVE.
INCOMPATIBILITIES
EXPLODES WHEN HEATED.
HALOGENATED SOLVENTS
AvoID CONTACT WITH METALS.
AvoID CONTACT WITH ACID.
ACID CHLORIDES
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
NITROGEN OXIDES
REACTS WITH PROTIC SOLVENTS (WATER, ALCOHOLS, AMINES, ETC.) TO RELEASE TOXIC HYDRAZOIC ACID
HAZARDOUS POLYMERIZATION
WILL NOT OCCUR.

SECTION 11. - - - - - - TOXICOLOGICAL INFORMATION - - - - - - ACUTE EFFECTS
MAY CAUSE SKIN IRRITATION.
MAY BE FATAL IF ABSORBED THROUGH SKIN.
MAY CAUSE EYE IRRITATION.
MAY BE FATAL IF INHALED.
MATERIAL MAY BE IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.
MAY BE FATAL IF SWALLOWED.
EXPOSURE CAN CAUSE:
NAUSEA, HEADACHE AND VOMITING
LABORATORY EXPERIMENTS IN ANIMALS HAVE SHOWN SODIUM AZIDE TO PRODUCE A PROFOUND HYPOTENSIVE EFFECT, DEMELINATION OF MYELINATED NERVE FIBERS IN THE CENTRAL NERVOUS SYSTEM, TESTICULAR DAMAGE, BLINDNESS, ATTACKS OF RIGIDITY, HEPATIC AND CEREBRAL EFFECTS.
CHRONIC EFFECTS
TARGET ORGAN(S):
NERVES, HEART
BRAIN
LABORATORY EXPERIMENTS HAVE SHOWN MUTAGENIC EFFECTS.

RTECS #: VY8050000
SODIUM AZIDE

TOXICITY DATA

<table>
<thead>
<tr>
<th>ORL-WMN LD50:786 MG/KG</th>
<th>MTAEEB 4,219,1989</th>
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<tbody>
<tr>
<td>ORL-MAN LD50:29 MG/KG</td>
<td>MTAEEB 4,219,1989</td>
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<tr>
<td>ORL-MAN LD50:129 MG/KG</td>
<td>JATG03 20,134,1996</td>
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<td>ORL-WMN LD50:14 MG/KG</td>
<td>JPSCAS 35,193,1990</td>
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<td>ORL-MAN LD50:143 MG/KG</td>
<td>JCTCDW 24,339,1986</td>
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<tr>
<td>IHG-RAT LC50:37 MG/M3</td>
<td>STGMBT -173,1999</td>
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<tr>
<td>SKW-RAT LD50:50 MG/KG</td>
<td>STGMBT -173,1999</td>
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<td>SCU-RAT LD50:45100 UG/KG</td>
<td>MEPAX 12,427,1963</td>
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<td>ITR-RAT LD50:47500 UG/KG</td>
<td>MEPAX 12,427,1961</td>
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<td>OSL-MUS LD50:27 MG/KG</td>
<td>JLDN*</td>
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<td>IHL-MUS LC50:32400 UG/M3</td>
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<td>IFP-MUS LD50:28 MG/KG</td>
<td>JHHTAB 30,98,1948</td>
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<td>SCU-MUS LD50:23060 UG/KG</td>
<td>MEPAX 12,427,1962</td>
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<td>IVM-MUS LD50:19 MG/KG</td>
<td>JLDN*</td>
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<td>UNR-MUS LD50:27 MG/KG</td>
<td>BJCAAI 6,160,1952</td>
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<td>OSL-BRD LD50:23700 UG/KG</td>
<td>AECTCV 12,355,1983</td>
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</table>

TARGET ORGAN DATA

<table>
<thead>
<tr>
<th>BRAIN AND COVERAGE (INCREASED INTRACRANIAL PRESSURE)</th>
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<tbody>
<tr>
<td>PERIPHERAL NERVE AND SENSATION (SPASTIC PARALYSIS WITH/ WITHOUT SENSORY CH)</td>
</tr>
<tr>
<td>SENSE ORGANS AND SPECIAL SENSES (MYDRIASIS)</td>
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<tr>
<td>SENSE ORGANS AND SPECIAL SENSES (OTHER EYE EFFECTS)</td>
</tr>
<tr>
<td>BEHAVIORAL (GENERAL ANESTHETIC)</td>
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<tr>
<td>BEHAVIORAL (SOMNOLENCE)</td>
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<td>BEHAVIORAL (CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD)</td>
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<tr>
<td>BEHAVIORAL (CHANGE IN MOTOR ACTIVITY)</td>
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<td>BEHAVIORAL (COMA)</td>
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<td>BEHAVIORAL (HEADDACHE)</td>
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<tr>
<td>BEHAVIORAL (IRRITABILITY)</td>
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<tr>
<td>CARDIAC (CARDIOMYOPATHY INCLUDING INFARCTION)</td>
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<td>CARDIAC (ARRHYTHMIAS)</td>
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<tr>
<td>CARDIAC (FUSE RATE INCREASED WITHOUT FALL IN BP)</td>
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<tr>
<td>CARDIAC (FUSE RATE DECREASED WITH FALL IN BP)</td>
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<tr>
<td>CARDIAC (CHANGE IN FORCE OF CONTRACTION)</td>
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<tr>
<td>CARDIAC (OTHER CHANGES)</td>
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<tr>
<td>VASCULAR (BP LOWERING NOT CHARACTERIZED IN AUTONOMIC SECTION)</td>
</tr>
<tr>
<td>LUNGS, THORAX OR RESPIRATION (CHANGE IN TRACHEA OR BRONCHI)</td>
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<tr>
<td>LUNGS, THORAX OR RESPIRATION (ACUTE PULMONARY EDEMA)</td>
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<tr>
<td>LUNGS, THORAX OR RESPIRATION (DYSPOEAE)</td>
</tr>
<tr>
<td>LUNGS, THORAX OR RESPIRATION (RESPIRATORY STIMULATION)</td>
</tr>
<tr>
<td>LUNGS, THORAX OR RESPIRATION (OTHER CHANGES)</td>
</tr>
<tr>
<td>GASTROINTESTINAL (HYPERMOTILITY, DIARRHEA)</td>
</tr>
<tr>
<td>KIDNEY, URETTER, BLADDER (OTHER CHANGES)</td>
</tr>
<tr>
<td>BLOOD (CHANGES IN SPLEEN)</td>
</tr>
<tr>
<td>MUSCULO-SKELETAL (OTHER CHANGES)</td>
</tr>
</tbody>
</table>

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 - - - - - - - - - -
CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL.
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. - - - - - - - - - TRANSPORT INFORMATION - - - - - - - - - -
CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

SECTION 15. - - - - - - - - - REGULATORY INFORMATION - - - - - - - - - -
EUROPEAN INFORMATION
EC INDEX NO: 011-004-00-7
VERY TOXIC
R 32
CONTACT WITH ACIDS LIBERATES VERY TOXIC GAS.
S 28
AFTER CONTACT WITH SKIN, WASH IMMEDIATELY WITH PLENTY OF SOAP SUDS.
S 61
AVOID RELEASE TO THE ENVIRONMENT. REFER TO SPECIAL INSTRUCTIONS/ SAFETY DATA SHEETS.

REVIEWS, STANDARDS, AND REGULATIONS
OEL-MAX
ACGIH TLV- NOT CLASSIFIABLE AS A HUMAN CARCINOGEN DTLVS* TLV/BEI, 1999
ACGIH TLV-CL 0.29 MG/M3 (SODIUM AZIDE) DTLVS* TLV/BEI, 1999
OEL-AUSTRALIA: TWA 0.1 FPM (0.3 MG/M3), JAN 1993
Carcinogenicity

- EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
- EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES
- ON EPA IRIS DATABASE
- EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JANUARY 2001
- NTP CARCINOGENESIS STUDIES (GAVAGE); NO EVIDENCE: RAT
- NTPtr* NTP-TR-389,1991

U.S. INFORMATION

This product is subject to SARA section 313 reporting requirements.

Section 16.7 - Other Information - Other Information - 

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma, Aldrich, Fluka shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

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