

## MATERIAL SAFETY DATA SHEET

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Version 1.6

## Section 1 - Product and Company Information

Product Name	SODIUM AZIDE SIGMAULTRA
Product Number	S8032
Brand	SIAL
Company	Sigma-Aldrich
Street Address	3050 Spruce Street
City, State, Zip, Country	SAINT LOUIS MO 63103 US
Technical Phone:	800-325-5832
Emergency Phone:	314-776-6555
Fax:	800-325-5052

## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
SODIUM AZIDE	26628-22-8	Yes
Formula	NaN <sub>3</sub>	
Synonyms	Azide, sodium * Azoture de sodium (French) * Azydek sodu (Polish) * Kazoe * Natriumazid (German) * Natriummazide (Dutch) * NCI-C06462 * Nemazyd * NSC 3072 * RCRA waste number P105 * Smite * Sodium azide (ACGIH) * Sodium, azoture de (French) * Sodium, azoturo di (Italian) * U-3886	
RTECS Number:	VY8050000	

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

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.

## HMIS RATING

HEALTH: 4\*

FLAMMABILITY: 0

REACTIVITY: 2

## NFPA RATING

HEALTH: 4

FLAMMABILITY: 0

REACTIVITY: 2

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

## Section 4 - First Aid Measures

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### ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

### INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

### DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

### EYE EXPOSURE

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.

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## Section 5 - Fire Fighting Measures

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### EXPLOSION HAZARDS

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.

### FLASH POINT

N/A

### AUTOIGNITION TEMP

N/A

### FLAMMABILITY

N/A

### EXTINGUISHING MEDIA

Suitable: Dry chemical powder.  
Unsuitable: Do not use water.

### FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.  
Specific Hazard(s): Emits toxic fumes under fire conditions.

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## Section 6 - Accidental Release Measures

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### PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

### METHODS FOR CLEANING UP



Property	Value	At Temperature or Pressure
Molecular Weight	65.01 AMU	
pH	10	
BP/BP Range	N/A	
MP/MP Range	275 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	1.85 g/cm <sup>3</sup>	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	N/A	
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	N/A	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water:complete, colorless 1 M in H <sub>2</sub> O, 20°C	

N/A = not available

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## Section 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Conditions of Instability: Heat sensitive.

Materials to Avoid: Halogenated solvents Avoid contact with metals. Avoid contact with acid., Acid chlorides

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Nitrogen oxides Reacts with protic solvents (water, alcohols, amines, etc.) to release toxic hydrazoic acid

Hazardous Decomposition Products Formed Upon Contact with Water: Reacts with protic solvents (water, alcohols, amines, etc.) to release toxic hydrazoic acid

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## Section 11 - Toxicological Information

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### ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Skin Absorption: May be fatal if absorbed through skin.

Eye Contact: May cause eye irritation.

Inhalation: May be fatal if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion: May be fatal if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

Nerves. Heart. Brain.

SIGNS AND SYMPTOMS OF EXPOSURE

Exposure can cause: Nausea, headache, and vomiting. Laboratory experiments in animals have shown sodium azide to produce a profound hypotensive effect, demyelination of myelinated nerve fibers in the central nervous system, testicular damage, blindness, attacks of rigidity, and hepatic and cerebral effects.

TOXICITY DATA

Oral

Woman

786 mg/kg

LDLO

Remarks: Cardiac:Arrythmias (including changes in conduction).

Behavioral:Coma. Behavioral:Convulsions or effect on seizure threshold.

Oral

Man

29 mg/kg

LDLO

Remarks: Lungs, Thorax, or Respiration:Acute pulmonary edema.

Brain and Coverings:Increased intracranial pressure.

Cardiac:Pulse rate.

Oral

Man

129 mg/kg

LDLO

Remarks: Cardiac:Other changes. Cardiac:Pulse rate.

Behavioral:Coma.

Oral

Woman

14 mg/kg

LDLO

Remarks: Cardiac:Change in force of contraction.

Cardiac:Arrythmias (including changes in conduction).

Behavioral:Convulsions or effect on seizure threshold.

Oral

Man

143 mg/kg

LDLO

Remarks: Behavioral:Irritability. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Mydriasis (pupillary dilation). Behavioral:Somnolence (general depressed activity).

Oral

Rat

27 mg/kg

LD50

Inhalation

Rat

37 mg/m<sup>3</sup>

LC50

Remarks: Lungs, Thorax, or Respiration:Structural or functional

change in trachea or bronchi. Behavioral:Convulsions or effect on seizure threshold. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Other.

Skin

Rat

50 mg/kg

LD50

Subcutaneous

Rat

45100 UG/KG

LD50

Remarks: Lungs, Thorax, or Respiration:Other changes. Peripheral Nerve and Sensation:Spastic paralysis with or without sensory change.

Intratracheal

Rat

47500 UG/KG

LD50

Remarks: Peripheral Nerve and Sensation:Spastic paralysis with or without sensory change. Lungs, Thorax, or Respiration:Other changes.

Oral

Mouse

27 mg/kg

LD50

Inhalation

Mouse

32.4 mg/m<sup>3</sup>

LC50

Remarks: Lungs, Thorax, or Respiration:Structural or functional change in trachea or bronchi. Behavioral:Convulsions or effect on seizure threshold. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Other.

Intraperitoneal

Mouse

28 MG/KG

LD50

Remarks: Lungs, Thorax, or Respiration:Respiratory stimulation. Behavioral:Change in motor activity (specific assay). Behavioral:Convulsions or effect on seizure threshold.

Subcutaneous

Mouse

23060 UG/KG

LD50

Remarks: Lungs, Thorax, or Respiration:Other changes. Peripheral Nerve and Sensation:Spastic paralysis with or without sensory change.

Intravenous

Mouse

19 MG/KG

LD50

Skin

Rabbit

20 mg/kg  
LD50

Oral  
Bird (wild)  
23.7 mg/kg  
LD50

#### CHRONIC EXPOSURE - CARCINOGEN

Species: Rat  
Route of Application: Oral  
Dose: 2730 MG/KG  
Exposure Time: 78W  
Frequency: C  
Result: Endocrine:Tumors. Skin and Appendages: Other: Tumors.  
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.

Species: Rat  
Route of Application: Oral  
Dose: 5460 MG/KG  
Exposure Time: 78W  
Frequency: C  
Result: Skin and Appendages: Other: Tumors. Endocrine:Tumors.  
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.

#### NTP CARCINOGEN LIST

Rating: No evidence.  
Species: Rat  
Route: Gavage

#### ACGIH CARCINOGEN LIST

Rating: A4

#### CHRONIC EXPOSURE - MUTAGEN

Result: Laboratory experiments have shown mutagenic effects.

Species: other insects  
Route: Oral  
Dose: 100 MG/L  
Mutation test: Heritable translocation test

Species: Human  
Dose: 30 MMOL/L  
Cell Type: HeLa cell  
Mutation test: DNA inhibition

Species: Human  
Dose: 50 MG/L  
Cell Type: fibroblast  
Mutation test: DNA inhibition

Species: Rat  
Dose: 1 MMOL/L  
Cell Type: liver  
Mutation test: Mutation in mammalian somatic cells.

Species: Mouse  
Dose: 500 MG/L  
Exposure Time: 2H

Cell Type: lymphocyte  
Mutation test: Mutation in mammalian somatic cells.

Species: Hamster  
Dose: 1 MMOL/L  
Cell Type: lung  
Mutation test: Mutation in mammalian somatic cells.

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## Section 12 - Ecological Information

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### ACUTE ECOTOXICITY TESTS

Test Type: EC50 Daphnia  
Species: Daphnia pulex  
Time: 48 h  
Value: 4.2 mg/l

Test Type: LC50 Fish  
Species: Pimephales promelas (Fathead minnow)  
Time: 96 h  
Value: 5.46 mg/l

Test Type: LC50 Fish  
Species: Onchorhynchus mykiss (Rainbow trout)  
Time: 96 h  
Value: 3.92 mg/l

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## Section 13 - Disposal Considerations

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### APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

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## Section 14 - Transport Information

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### DOT

Proper Shipping Name: Sodium azide  
UN#: 1687  
Class: 6.1  
Packing Group: Packing Group II  
Hazard Label: Toxic substances.  
PIH: Not PIH

### IATA

Proper Shipping Name: Sodium azide  
IATA UN Number: 1687  
Hazard Class: 6.1  
Packing Group: II

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## Section 15 - Regulatory Information

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### EU DIRECTIVES CLASSIFICATION

Symbol of Danger: T+-N  
Indication of Danger: Very toxic. Dangerous for the environment.  
R: 28-32-50/53  
Risk Statements: Very toxic if swallowed. Contact with acids liberates very toxic gas. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
S: 28-60-45-61  
Safety Statements: After contact with skin, wash immediately with plenty of soap-suds. This material and its container must



be disposed of as hazardous waste. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions/safety data sheets.

#### US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Highly Toxic (USA) Very Toxic (EU).  
Risk Statements: 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.  
Safety Statements: 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.  
US Statements: Readily absorbed through skin. Sodium azide may react with lead and copper plumbing to form highly explosive metal azides. Target organ(s): Nerves. Heart.

#### UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes  
DEMINIMIS: 1 %  
NOTES: This product is subject to SARA section 313 reporting requirements.  
TSCA INVENTORY ITEM: Yes

#### CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.  
DSL: Yes  
NDSL: No

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#### Section 16 - Other Information

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#### DISCLAIMER

For R&D use only. Not for drug, household or other uses.

#### WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., 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. Copyright 2006 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.