



# MATERIAL SAFETY DATA SHEET

PRODUCT

**460-S0209 SOLN Barium Chloride Crystals,  
Form Solid**

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : 460-S0209 SOLN Barium Chloride Crystals, Form Solid

APPLICATION : REAGENT

COMPANY IDENTIFICATION : Nalco Company  
1601 W. Diehl Road  
Naperville, Illinois  
60563-1198

EMERGENCY TELEPHONE NUMBER(S) : (800) 424-9300 (24 Hours) CHEMTREC

NFPA 704M/HMIS RATING

HEALTH : 3 / 3 FLAMMABILITY : 1 / 1 INSTABILITY : 0 / 0 OTHER :

0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical substance(s) as hazardous. Consult Section 15 for the nature of the hazard(s).

Hazardous Substance(s)	CAS NO	% (w/w)
Barium Chloride	10361-37-2	60.0 - 100.0

## 3. HAZARDS IDENTIFICATION

### \*\*EMERGENCY OVERVIEW\*\*

#### WARNING

May be fatal if swallowed. Irritating to eyes and skin.

Do not take internally. Do not get in eyes, on skin, on clothing. Do not breathe dust. Wear suitable protective clothing. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water.

Not flammable or combustible.

PRIMARY ROUTES OF EXPOSURE :

Eye, Skin

HUMAN HEALTH HAZARDS - ACUTE :

EYE CONTACT :

Can cause moderate irritation.

SKIN CONTACT :

Can cause mild to moderate irritation.



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### INGESTION :

Not a likely route of exposure. Ingestion of barium chloride can cause vascular constriction, violent peristalsis and digitalis-like effects. May be harmful or fatal if swallowed.

### INHALATION :

Repeated or prolonged exposure may irritate the respiratory tract.

### SYMPTOMS OF EXPOSURE :

#### Acute :

A review of available data does not identify any symptoms from exposure not previously mentioned.

#### Chronic :

A review of available data does not identify any symptoms from exposure not previously mentioned.

### AGGRAVATION OF EXISTING CONDITIONS :

A review of available data does not identify any worsening of existing conditions.

## 4. FIRST AID MEASURES

### EYE CONTACT :

Immediately flush eye with water for at least 15 minutes while holding eyelids open. If irritation persists, repeat flushing. Get immediate medical attention.

### SKIN CONTACT :

Remove contaminated clothing. Wash off affected area immediately with plenty of water. If symptoms persist, call a physician.

### INGESTION :

Induce vomiting if the patient is fully conscious. Get immediate medical attention.

### INHALATION :

Remove to fresh air, treat symptomatically. If symptoms develop, seek medical advice.

### NOTE TO PHYSICIAN :

Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

## 5. FIRE FIGHTING MEASURES

FLASH POINT : None

### EXTINGUISHING MEDIA :

Not expected to burn. Use extinguishing media appropriate for surrounding fire.

### FIRE AND EXPLOSION HAZARD :

Not flammable or combustible.

### SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :

In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.



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### 6. ACCIDENTAL RELEASE MEASURES

#### PERSONAL PRECAUTIONS :

Notify appropriate government, occupational health and safety and environmental authorities. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection).

#### METHODS FOR CLEANING UP :

Sweep up and shovel. Reclaim into recovery or salvage drums. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

#### ENVIRONMENTAL PRECAUTIONS :

Do not contaminate surface water.

### 7. HANDLING AND STORAGE

#### HANDLING :

Do not take internally. Ensure all containers are labelled. Avoid eye and skin contact. Avoid generating dusts.

#### STORAGE CONDITIONS :

Store separately from oxidizers. Keep in dry place.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### OCCUPATIONAL EXPOSURE LIMITS :

Exposure guidelines have not been established for this product. Available exposure limits for the substance(s) are shown below.

#### ACGIH/TLV :

Substance(s)  
Barium, soluble compounds, as Ba TWA: 0.5 mg/m<sup>3</sup>

#### OSHA/PEL :

Substance(s)  
Barium, soluble compounds, as Ba TWA: 0.5 mg/m<sup>3</sup>

#### ENGINEERING MEASURES :

General ventilation is recommended. Local exhaust ventilation may be necessary when dusts or mists are generated.

#### RESPIRATORY PROTECTION :

Respiratory protection is not normally needed. An approved respirator must be worn if the occupational exposure limit is likely to be exceeded. A dust respirator may be used.

#### HAND PROTECTION :

Nitrile gloves, PVC gloves, Neoprene gloves, Rubber gloves, Butyl gloves, Cloth gloves



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### SKIN PROTECTION :

Wear standard protective clothing.

### EYE PROTECTION :

Wear safety glasses with side-shields.

### HYGIENE RECOMMENDATIONS :

Keep an eye wash fountain available. Keep a safety shower available.

### HUMAN EXPOSURE CHARACTERIZATION :

Based on our recommended product application and personal protective equipment, the potential human exposure is: Low

## 9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Crystalline
APPEARANCE	Clear
ODOR	None
SPECIFIC GRAVITY	3.1
SOLUBILITY IN WATER	Partial
MELTING POINT	235 °F / 113 °C

Note: These physical properties are typical values for this product and are subject to change.

## 10. STABILITY AND REACTIVITY

### STABILITY :

Stable under normal conditions.

### HAZARDOUS POLYMERIZATION :

Hazardous polymerization will not occur.

### CONDITIONS TO AVOID :

Moisture

### MATERIALS TO AVOID :

Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.

### HAZARDOUS DECOMPOSITION PRODUCTS :

Under fire conditions: None known

## 11. TOXICOLOGICAL INFORMATION

The following results are for the product.



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#### ACUTE ORAL TOXICITY :

Species	LD50	Test Descriptor
Rat	118 mg/kg	Product
Rating :	Toxic	

#### CARCINOGENICITY :

None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

#### HUMAN HAZARD CHARACTERIZATION :

Based on our hazard characterization, the potential human hazard is: High

## 12. ECOLOGICAL INFORMATION

#### ECOTOXICOLOGICAL EFFECTS :

No toxicity studies have been conducted on this product.

#### ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION

Based on our hazard characterization, the potential environmental hazard is: Moderate

Based on our recommended product application and the product's characteristics, the potential environmental exposure is: Low

If released into the environment, see CERCLA/SUPERFUND in Section 15.

## 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Hazardous Waste: D005

As a non-hazardous waste, it is not subject to federal regulation. Consult state or local regulation for any additional handling, treatment or disposal requirements. For disposal, contact a properly licensed waste treatment, storage, disposal or recycling facility.

## 14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.

#### LAND TRANSPORT :

Proper Shipping Name : BARIUM COMPOUNDS, N.O.S.



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Technical Name(s) : BARIUM CHLORIDE  
UN/ID No : UN 1564  
Hazard Class - Primary : 6.1  
Packing Group : III

Flash Point : None

### AIR TRANSPORT (ICAO/IATA) :

Proper Shipping Name : BARIUM COMPOUNDS, N.O.S.  
Technical Name(s) : BARIUM CHLORIDE  
UN/ID No : UN 1564  
Hazard Class - Primary : 6.1  
Packing Group : III  
IATA Cargo Packing Instructions : 619  
IATA Cargo Aircraft Limit : 200 KG (Max net quantity per package)

### MARINE TRANSPORT (IMDG/IMO) :

Proper Shipping Name : BARIUM COMPOUNDS, N.O.S.  
Technical Name(s) : BARIUM CHLORIDE  
UN/ID No : UN 1564  
Hazard Class - Primary : 6.1  
Packing Group : III

## 15. REGULATORY INFORMATION

### NATIONAL REGULATIONS, USA :

#### OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200 :

Based on our hazard evaluation, the following substance(s) in this product is/are hazardous and the reason(s) is/are shown below.

Barium Chloride : Systemic Effect

#### CERCLA/SUPERFUND, 40 CFR 117, 302 :

Notification of spills of this product is not required.

#### SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312, AND 313 :

#### SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355) :

This product does not contain substances listed in Appendix A and B as an Extremely Hazardous Substance.

#### SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370) :

Our hazard evaluation has found this product to be hazardous. The product should be reported under the following indicated EPA hazard categories:

X Immediate (Acute) Health Hazard



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- Delayed (Chronic) Health Hazard
- Fire Hazard
- Sudden Release of Pressure Hazard
- Reactive Hazard

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

### SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372) :

This product contains the following substance(s), (with CAS # and % range) which appear(s) on the List of Toxic Chemicals

<u>Hazardous Substance(s)</u>	<u>CAS NO</u>	<u>% (w/w)</u>
Barium Chloride	10361-37-2	60.0 - 100.0

### TOXIC SUBSTANCES CONTROL ACT (TSCA) :

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 / formerly Sec. 307, 40 CFR 116.4 / formerly Sec. 311 :

None of the substances are specifically listed in the regulation.

CLEAN AIR ACT, Sec. 111 (40 CFR 60, Volatile Organic Compounds), Sec. 112 (40 CFR 61, Hazardous Air Pollutants), Sec. 602 (40 CFR 82, Class I and II Ozone Depleting Substances) :

None of the substances are specifically listed in the regulation.

### CALIFORNIA PROPOSITION 65 :

This product does not contain substances which require warning under California Proposition 65.

### MICHIGAN CRITICAL MATERIALS :

None of the substances are specifically listed in the regulation.

### STATE RIGHT TO KNOW LAWS :

The following substances are disclosed for compliance with State Right to Know Laws:

Barium Chloride	10361-37-2
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### NATIONAL REGULATIONS, CANADA :

### WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) :

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

### WHMIS CLASSIFICATION :

D1B - Materials Causing Immediate and Serious Toxic Effects - Toxic Material, D2B - Materials Causing Other Toxic Effects - Toxic Material



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CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :

The substances in this preparation are listed on the Domestic Substances List (DSL), are exempt, or have been reported in accordance with the New Substances Notification Regulations.

### 16. OTHER INFORMATION

Due to our commitment to Product Stewardship, we have evaluated the human and environmental hazards and exposures of this product. Based on our recommended use of this product, we have characterized the product's general risk. This information should provide assistance for your own risk management practices. We have evaluated our product's risk as follows:

\* The human risk is: Low

\* The environmental risk is: Low

Any use inconsistent with our recommendations may affect the risk characterization. Our sales representative will assist you to determine if your product application is consistent with our recommendations. Together we can implement an appropriate risk management process.

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

### REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH., (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA), (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH, (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.



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Ariel Insight# (An integrated guide to industrial chemicals covered under major regulatory and advisory programs), North American Module, Western European Module, Chemical Inventories Module and the Generics Module (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

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Prepared By : Product Safety Department

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