

5950 North Course Drive, Houston, TX 77072  
**TRANSPORTATION & MATERIAL SAFETY DATA SHEET**

TRADE NAME : SODA ASH

HMIS HAZARD RATING : HEALTH 0  
FLAMMABILITY 0  
REACTIVITY 0  
PERSONAL PROTECTION E

EMERGENCY TELEPHONE NUMBER  
(713) 561-1600  
(713) 561-1300  
DAY OR NIGHT

**PREAMBLE**

M-I Drilling Fluids, L.L.C. is pleased to furnish this data at your request independent of any sale of the product. While every effort has been made to accurately describe this product and associated manifestations, some of the data are obtained from the open literature, independent laboratory studies, or other sources beyond our direct supervision. We cannot make any assertion as to the reliability or completeness; therefore, the User may rely thereon only at User's risk. We have made no effort to censor nor to conceal deleterious aspects of this product. Since we cannot anticipate or control the many different conditions under which this information and our products may be used, we make no guarantee that the health and safety precautions we have suggested will be adequate for all individuals and/or situations. Likewise, we make no guarantee or warranty of any kind that the use or disposal of this product is in compliance with all federal, state or local laws. It is the obligation of each User of this product to determine and comply with the requirements of all applicable statutes. M-I Drilling Fluids, L.L.C. will furnish, upon request, any additional information to assist the User; however, no warranty, either expressed or implied, nor liability of any nature with respect to the product or to the data herein is made or incurred hereunder.

**1. PRODUCT IDENTIFICATION**

COMMON NAME : Sodium carbonate  
MANUFACTURER : Manufactured for M-I Drilling Fluids  
PACKAGE QUANTITY : 45.4 kg (100 lb)  
USE : Drilling fluid additive  
FREIGHT DESCRIPTION : Oil well drilling fluid additive  
CONTAINER SPECIFICATIONS : Multiwall paper bag meets DOT requirements (49 CFR 178)  
CHEMICAL FORMULA : Na<sub>2</sub>CO<sub>3</sub>  
CAS NUMBER : 497-19-18  
UNIT OF ISSUE : Kilogram (pound)  
APPLICATION : Calcium precipitation

**2. HAZARDOUS INGREDIENTS**

SERIAL OR COMPONENT	%	(A) OSHA PEL /	(B) ACGIH TLV /	(C) OTHER LIMITS RECOMMENDED
Particulates not otherwise classified (PNOC), total dust	100	(A) 15 mg/m <sup>3</sup> (1)		(B) 10 mg/m <sup>3</sup> (2)

**3. PHYSICAL DATA**

BOILING POINT (760 mm Hg) : N.A.	MELTING POINT : 851 C 1564 F
pH (1% Soln.) : 11.4	VAPOR PRESSURE @ 20 deg C : Nil
SPECIFIC GRAVITY (H <sub>2</sub> O=1) : 2.509	SOLUBILITY IN WATER @ 20 deg C : 33.2
VAPOR DENSITY (air=1) : N.A.	EVAPORATION RATE (BUTYL ACETATE=1): N.A.
PHYSICAL APPEARANCE : Granules	FLASH POINT (method used) : Noncombustible
BULK DENSITY : 768.9 kg/m <sup>3</sup> (48 lb/ft <sup>3</sup> )	ODOR & COLOR : Odorless, white color

**4. REACTIVITY DATA**

PRODUCT IS STABLE? : Yes  
PRODUCT DECOMPOSES? : No  
PRODUCT POLYMERIZES? : No

AIR \_ HEAT \_ ACID X BASE \_ WATER \_ OXIDIZER \_  
INCOMPATIBILITY OTHER Reacts with hydrated lime to form caustic soda.  
(Specify)

Not Determined N.A.-Not Applicable <-Less Than >-Greater Than C-Ceiling Limit  
Note: For additional information and interpretive assistance, see last page.

## 5. FIRE AND EXPLOSION HAZARD INFORMATION

FLAMMABLE LIMITS BY AIR, % BY VOL. L.E.L.: N.A. U.E.L.: N.A. AUTO IGNITION TEMPERATURE: N.A.  
PRODUCTS EVOLVED WHEN SUB- This material is not combustible. When heated to decomposition, oxides of carbon and  
JECTED TO HEAT BY COMBUSTION sodium may form, producing toxic fumes.  
EXTINGUISHING Compatible with agents used to extinguish nearby fires.  
SPECIAL PRECAUTIONS  
UNUSUAL FIRE FIGHTING None are required.  
PROCEDURES  
UNUSUAL FIRE AND None known.  
EXPLOSION HAZARDS

## 6. HEALTH HAZARD INFORMATION

PRIMARY EYE CONTACT: X SKIN CONTACT: X SKIN ABSORPTION: INHALATION: X INGESTION: X  
ROUTES OF TARGET Eyes, skin, respiratory and CARCINOGENICITY  
EXPOSURE ORGAN : gastrointestinal sys. NTP: No IARC: No OSHA: No  
ACUTE EFFECTS May cause mechanical irritation to eyes and respiratory tract. Dust inhalation may lead to  
OF bronchitis, emphysema, and asthma. Dermatitis may result from short contact periods. Ingestion may  
EXPOSURE cause nausea, vomiting and diarrhea.(3)  
CHRONIC EFFECTS None reported.  
OF  
EXPOSURE  
TOXICITY Oral-rat LD50: 4090 g/kg; skin-rabbit: 500 mg/24H MILD; eye-rabbit: 100 mg/24H MODERATE.(3)  
DATA

## 7. EMERGENCY AND FIRST AID PROCEDURES

F  
I EYES Hold eyelids apart and flush eyes with water for at least 15 minutes. Seek medical  
R attention if irritation persists.  
S SKIN Wash thoroughly with soap and water. Remove contaminated clothing if needed.  
T  
I INGESTION Drink water to dilute. Never give anything by mouth to an unconscious person. Seek medical  
attention as needed.  
D INHALATION Remove to fresh air. If not breathing, give artificial respiration. If breathing is  
difficult, give oxygen.  
OTHER Sensitive individuals should avoid further contact. Persons seeking medical attention should  
INSTRUCTIONS carry a copy of this MSDS with them.

## 8. OCCUPATIONAL CONTROL MEASURES

RESPIRATORY Wear a NIOSH/MSHA-approved particulate respirator when the airborne concentration is above the  
PEL.  
VENTILATION Supply natural or mechanical ventilation adequate to keep exposures below the recommended  
exposure limits (see MSDS Section 2).  
SKIN Wear gloves and long protective clothing. Wash thoroughly after handling. Wash clothing and  
clean shoes before reuse.  
EYES Wear chemical safety goggles or glasses with sideguards. Insure proper fit for best protection.  
OTHER PROTECTIVE Ordinary measures of personal hygiene should be observed. Avoid contact with skin and clothing.  
EQUIPMENT Avoid breathing dust.

## 9. SPECIAL PRECAUTIONS

PRECAUTIONARY CAUTION! May cause eye, skin, and respiratory tract irritation. Treat as a nuisance dust.  
LABELING  
PRECAUTIONS FOR TRANSPORTATION Keep dusts to a minimum. Keep container closed. Use with adequate ventilation. See MSDS  
HANDLING AND STORAGE for proper protective equipment.

N.D.-Not Determined N.A.-Not Applicable <-Less Than >-Greater Than  
For additional information and interpretive assistance, see last page.

## 10. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL  
RELEASED OR SPILLED

Wear proper protective equipment (MSDS Section 8). Contain the spill and minimize dust. Re-package or recycle if possible, or place in a suitable waste container. Keep out of sewers and waterways.

WASTE DISPOSAL  
METHOD

Material is not classified as a hazardous waste by RCRA standards. Dispose of according to state and local regulations dealing with nonhazardous chemical waste.

## 11. U.S. GOVERNMENT & OTHER REGULATORY AGENCY CONTROLS

SARA TITLE III ACUTE: X CHRONIC: FIRE: REACTIVITY: X SUDDEN RELEASE OF PRESSURE:

Sodium carbonate is on the Canadian IDL 1% list.

## 12. TRANSPORTATION INFORMATION

### A. DEPARTMENT OF TRANSPORTATION (DOT)

CLASSIFIED AS A HAZARDOUS MATERIAL ACCORDING TO DOT (49 CFR 172): No

PROPER SHIPPING NAME : N.A.

HAZARD CLASS : N.A.

IDENTIFICATION NO. : N.A.

LABEL(S) REQUIRED : N.A.

EXCEPTIONS & PACKAGING REQUIREMENTS (SEE SECTION) : N.A.

MAXIMUM QUANTITY PASSENGER AIRCRAFT : N.A.

IN ONE PACKAGE CARGO AIRCRAFT : N.A.

### B. AIR TRANSPORT REGULATIONS (IATA/ICAO)

PROPER SHIPPING NAME : N.A.

UN NO.: N.A.

HAZARD CLASS : N.A.

FLASH POINT : N.A. deg F N.A. deg C

MAXIMUM QUANTITY PASSENGER AIRCRAFT : N.A.

PACKAGING (SEE SECTION) : N.A.

IN ONE PACKAGE CARGO AIRCRAFT : N.A.

PACKAGING (SEE SECTION) : N.A.

### C. INTERNATIONAL MARITIME ORGANIZATION REGULATIONS (IMO)

SUBSTANCE NAME : N.A.

UN NO.: N.A.

HAZARD CLASS : N.A.

CLASS NO. : N.A.

PAGE NO. : N.A.

LABEL(S) : N.A.

FLASH POINT : N.A. deg F N.A. deg C

DESCRIPTION : Oil well drilling fluid additive (sodium carbonate)

## 13. ADDITIONAL INFORMATION

References:

- (1) Chemical Guide to the OSHA Hazard Communication Standard, Ed. by Clansky, K.B., 7th Edition; Roytech: Burlingame, CA, (1992).
- (2) 1991-1992 Threshold Limit Values and Biological Exposure Indices; American Conference of Governmental Industrial Hygienists: Cincinnati, (1991).
- (3) Sax, N. I. and Lewis, R.J., Sr. : Dangerous Properties of Industrial Materials, 7th Edition, Vols. I-III; VNR: New York, (1989).

FOR ADDITIONAL INFORMATION CONTACT:  
Manager, Environmental Affairs (713) 561-1507

Prepared by : James H. Rushing  
Date Prepared : Revised: February 1993

P.-Not Determined N.A.-Not Applicable <-Less Than >-Greater Than  
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HMIS HAZARD RATING : HEALTH 0  
FLAMMABILITY 0  
REACTIVITY 0  
PERSONAL PROTECTION E

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## PREAMBLE

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CAS NUMBER : 497-19-18  
UNIT OF ISSUE : Kilogram (pound)  
APPLICATION : Calcium precipitation

## 2. HAZARDOUS INGREDIENTS

SERIAL OR COMPONENT	%	(A) OSHA PEL /	(B) ACGIH TLV /	(C) OTHER LIMITS RECOMMENDED
Articulates not otherwise classified (PNOC), total dust	100	(A) 15 mg/m <sup>3</sup> (1)	(B) 10 mg/m <sup>3</sup> (2)	

## 3. PHYSICAL DATA

BOILING POINT (760 mm Hg) : N.A.	MELTING POINT : 851 C 1564 F
pH (1% Soln.) : 11.4	VAPOR PRESSURE @ 20 deg C : Nil
SPECIFIC GRAVITY (H <sub>2</sub> O=1) : 2.509	SOLUBILITY IN WATER @ 20 deg C : 33.2
VAPOR DENSITY (air=1) : N.A.	EVAPORATION RATE (BUTYL ACETATE=1): N.A.
PHYSICAL APPEARANCE : Granules	FLASH POINT (method used) : Noncombustible
BULK DENSITY : 768.9 kg/m <sup>3</sup> (48 lb/ft <sup>3</sup> )	ODOR & COLOR : Odorless, white color

## 4. REACTIVITY DATA

PRODUCT IS STABLE? : Yes  
PRODUCT DECOMPOSES? : No  
PRODUCT POLYMERIZES? : No

AIR \_ HEAT \_ ACID X BASE \_ WATER \_ OXIDIZER \_  
Reacts with hydrated lime to form caustic soda.

INCOMPATIBILITY OTHER (Specify)

Not Determined N.A.-Not Applicable <-Less Than >-Greater Than C-Ceiling Limit  
Note: For additional information and interpretive assistance, see last page.

## 5. FIRE AND EXPLOSION HAZARD INFORMATION

FLAMMABLE LIMITS BY AIR, % BY VOL.	L.E.L.: N.A.	U.E.L.: N.A.	AUTO IGNITION TEMPERATURE: N.A.
PRODUCTS EVOLVED WHEN SUB- JECTED TO HEAT BY COMBUSTION	This material is not combustible. When heated to decomposition, oxides of carbon and sodium may form, producing toxic fumes.		
EXTINGUISHING	Compatible with agents used to extinguish nearby fires.		
UNUSUAL FIRE FIGHTING	None are required.		
PROCEDURES			
UNUSUAL FIRE AND EXPLOSION HAZARDS	None known.		

## 6. HEALTH HAZARD INFORMATION

PRIMARY ROUTES OF EXPOSURE	EYE CONTACT: X	SKIN CONTACT: X	SKIN ABSORPTION:	INHALATION: X	INGESTION: X
TARGET	Eyes, skin, respiratory and			CARCINOGENICITY	
ORGAN :	gastrointestinal sys.			NTP: No	IARC: No OSHA: No
ACUTE EFFECTS OF EXPOSURE	May cause mechanical irritation to eyes and respiratory tract. Dust inhalation may lead to bronchitis, emphysema, and asthma. Dermatitis may result from short contact periods. Ingestion may cause nausea, vomiting and diarrhea.(3)				
CHRONIC EFFECTS OF EXPOSURE	None reported.				
TOXICITY DATA	Oral-rat LD50: 4090 g/kg; skin-rabbit: 500 mg/24H MILD; eye-rabbit: 100 mg/24H MODERATE.(3)				

## 7. EMERGENCY AND FIRST AID PROCEDURES

EYES	Hold eyelids apart and flush eyes with water for at least 15 minutes. Seek medical attention if irritation persists.
SKIN	Wash thoroughly with soap and water. Remove contaminated clothing if needed.
INGESTION	Drink water to dilute. Never give anything by mouth to an unconscious person. Seek medical attention as needed.
INHALATION	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
OTHER INSTRUCTIONS	Sensitive individuals should avoid further contact. Persons seeking medical attention should carry a copy of this MSDS with them.

## 8. OCCUPATIONAL CONTROL MEASURES

RESPIRATORY	Wear a NIOSH/MSHA-approved particulate respirator when the airborne concentration is above the PEL.
VENTILATION	Supply natural or mechanical ventilation adequate to keep exposures below the recommended exposure limits (see MSDS Section 2).
SKIN	Wear gloves and long protective clothing. Wash thoroughly after handling. Wash clothing and clean shoes before reuse.
EYES	Wear chemical safety goggles or glasses with sideguards. Insure proper fit for best protection.
OTHER PROTECTIVE EQUIPMENT	Ordinary measures of personal hygiene should be observed. Avoid contact with skin and clothing. Avoid breathing dust.

## 9. SPECIAL PRECAUTIONS

PRECAUTIONARY LABELING	CAUTION! May cause eye, skin, and respiratory tract irritation. Treat as a nuisance dust.
PRECAUTIONS FOR TRANSPORTATION HANDLING AND STORAGE	Keep dusts to a minimum. Keep container closed. Use with adequate ventilation. See MSDS for proper protective equipment.

N.D. - Not Determined    N.A. - Not Applicable    < - Less Than    > - Greater Than  
For additional information and interpretive assistance, see last page.

## 10. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL  
RELEASED OR SPILLED

Wear proper protective equipment (MSDS Section 8). Contain the spill and minimize dust. Re-package or recycle if possible, or place in a suitable waste container. Keep out of sewers and waterways.

WASTE DISPOSAL  
METHOD

Material is not classified as a hazardous waste by RCRA standards. Dispose of according to state and local regulations dealing with nonhazardous chemical waste.

## 11. U.S. GOVERNMENT & OTHER REGULATORY AGENCY CONTROLS

SARA TITLE III ACUTE: X CHRONIC: FIRE: REACTIVITY: X SUDDEN RELEASE OF PRESSURE:

Sodium carbonate is on the Canadian IDL 1% list.

## 12. TRANSPORTATION INFORMATION

### A. DEPARTMENT OF TRANSPORTATION (DOT)

CLASSIFIED AS A HAZARDOUS MATERIAL ACCORDING TO DOT (49 CFR 172): No

PROPER SHIPPING NAME : N.A.

HAZARD CLASS : N.A.

IDENTIFICATION NO. : N.A.

LABEL(S) REQUIRED : N.A.

EXCEPTIONS & PACKAGING REQUIREMENTS (SEE SECTION) : N.A.

MAXIMUM QUANTITY PASSENGER AIRCRAFT : N.A.

IN ONE PACKAGE CARGO AIRCRAFT : N.A.

### B. AIR TRANSPORT REGULATIONS (IATA/ICAO)

PROPER SHIPPING NAME : N.A.

UN NO.: N.A.

HAZARD CLASS : N.A.

FLASH POINT : N.A. deg F

N.A. deg C

MAXIMUM QUANTITY PASSENGER AIRCRAFT : N.A.

PACKAGING (SEE SECTION) : N.A.

IN ONE PACKAGE CARGO AIRCRAFT : N.A.

PACKAGING (SEE SECTION) : N.A.

### C. INTERNATIONAL MARITIME ORGANIZATION REGULATIONS (IMO)

SUBSTANCE NAME : N.A.

UN NO.: N.A.

HAZARD CLASS : N.A.

CLASS NO. : N.A.

PAGE NO. : N.A.

LABEL(S) : N.A.

FLASH POINT : N.A. deg F

N.A. deg C

DESCRIPTION : Oil well drilling fluid additive (sodium carbonate)

## 13. ADDITIONAL INFORMATION

### References:

- (1) Chemical Guide to the OSHA Hazard Communication Standard, Ed. by Clansky, K.B., 7th Edition; Roytech: Burlingame, CA, (1992).
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- (3) Sax, N. I. and Lewis, R.J., Sr. : Dangerous Properties of Industrial Materials, 7th Edition, Vols. I-III; VNR: New York, (1989).

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Manager, Environmental Affairs (713) 561-1507

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