

**ROLL FILM**

Develop (20°C/68°F)	8 minutes
Stop	30 seconds
Fix	5-10 minutes in a fixer such as Formulary Fixer 24 (catalog no. 03-0010) (do not use rapid fix)
Wash	30 seconds
Clear	2 minutes (Use Formulary Hypo Clear 03-0165)
Wash	5 minutes in running water

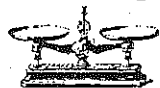
Agitate roll film for the first minute and for 15 seconds every 30 seconds thereafter.

**SHEET FILM**

Presoak in water	2 minutes
Develop (20°C/68°F)	7 minutes
Stop	30 seconds
Fix	5-10 minutes in a fixer such as Formulary Fixer 24 (catalog no. 03-0010) (do not use rapid fix)
Wash	30 seconds
Clear	2 minutes (Use Formulary Hypo Clear 03-0165)
Wash	5 minutes in running water

Develop in a tray with constant but gentle agitation.

Consult local sewer and water authorities regarding disposal of darkroom chemicals.



**PHOTOGRAPHERS' FORMULARY INC.**

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**PHOTOGRAPHERS' FORMULARY**

**JOHN WIMBERLEY DEVELOPER NUMBER 2, VERSION D (WD2D)**

WD2D is a modern pyrogallol-metol film developer formulated by John Wimberley. His article on this formula has been published in the October 1977 issue of PETERSEN'S PHOTOGRAPHIC.

Wimberley's WD2D is unusual in two respects. First, unlike most pyrogallol developers which lose about one f-stop, WD2D produces full film speed. Second, contrast control is achieved by varying the proportions of the two stock solutions used to make the working solution. Almost all other film developers control contrast by varying development time or by using split development (compensating developers)

**CHEMICAL SAFETY**

All chemicals are dangerous and must be treated with respect. Please read the warnings on each package.

There are two chemicals in Wimberley's WD2D that need special attention: Metol and Pyrogallol.

**METOL:** Some individuals become sensitized (develop allergic symptoms or rashes) when using metol. If this should occur, discontinue use and consult a physician.

**PYROGALLOL** is a phenol and thus has the potential to cause chemical skin burns. To be on the safe side, use rubber gloves and clean your work area and equipment with lots of water. (Soap and water is best.) If pyrogallol (solid or in solution) should come into contact with your skin, wash the area with water followed by soap and water. Brief skin contact produces a dark stain which is not a chemical burn. Prolonged skin contact does produce a chemical burn which closely resembles a heat burn.

**PYROGALLOL** is also a poison. Do not inhale its dust.

**IF FOR ANY REASON YOU DO NOT WISH TO ASSUME ALL RISKS IN USING THESE CHEMICALS, PLEASE RETURN THEM FOR A FULL REFUND.**

**MIXING THE STOCK SOLUTIONS**

You will need two storage bottles, glass or plastic, each with a capacity of 1/2 liter (or 1 lt.). You will also need a 10 ml, 25 ml, and a 100 ml graduated cylinder to prepare the 1% benzotriazole solution, to mix the Stock Solution B, and to mix the working solution.

## SAFETY DATA SHEET

Version 5.7  
Revision Date 11/24/2015  
Print Date 06/10/2016

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**1. PRODUCT AND COMPANY IDENTIFICATION****1.1 Product identifiers**

Product name : Benzotriazole  
Product Number : 76457  
Brand : Sigma-Aldrich  
CAS-No. : 95-14-7

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Laboratory chemicals, Synthesis of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA  
Telephone : +1 800-325-5832  
Fax : +1 800-325-5052

**1.4 Emergency telephone number**

Emergency Phone # : (314) 776-6555

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**2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 4), H302  
Acute toxicity, Inhalation (Category 4), H332  
Eye irritation (Category 2A), H319  
Acute aquatic toxicity (Category 3), H402  
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word

Warning

Hazard statement(s)

H302 + H332  
H319  
H412

Harmful if swallowed or if inhaled  
Causes serious eye irritation.  
Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P261  
P264  
P270  
P271  
P273

Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
Wash skin thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
Avoid release to the environment.

P280	Wear protective gloves/ eye protection/ face protection.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER or doctor/ physician if you feel unwell.
P330	Rinse mouth.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P501	Dispose of contents/ container to an approved waste disposal plant.

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Formula	: C <sub>6</sub> H <sub>5</sub> N <sub>3</sub>
Molecular weight	: 119.12 g/mol
CAS-No.	: 95-14-7
EC-No.	: 202-394-1

#### Hazardous components

Component	Classification	Concentration
<b>Benzotriazole</b>		
	Acute Tox. 4; Eye Irrit. 2A; Aquatic Acute 2; Aquatic Chronic 2; H302, H319, H411	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

## 5. FIREFIGHTING MEASURES

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NO<sub>x</sub>)

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

No data available

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## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

For personal protection see section 8.

### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### 6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

For disposal see section 13.

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## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

#### Personal protective equipment

##### Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact  
Material: Nitrile rubber  
Minimum layer thickness: 0.11 mm  
Break through time: 480 min  
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### **Body Protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### **Respiratory protection**

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### **Control of environmental exposure**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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## **9. PHYSICAL AND CHEMICAL PROPERTIES**

### **9.1 Information on basic physical and chemical properties**

- |   |  |
|---|--|
| a) Appearance                                   | Form: powder<br>Colour: beige                  |
| b) Odour  | No data available                              |
| c) Odour Threshold                              | No data available                              |
| d) pH   | No data available                              |
| e) Melting point/freezing point                 | Melting point/range: 97 - 99 °C (207 - 210 °F) |
| f) Initial boiling point and boiling range      | No data available                              |
| g) Flash point                                  | 170 °C (338 °F) - closed cup                   |
| h) Evaporation rate                             | No data available                              |
| i) Flammability (solid, gas)                    | No data available                              |
| j) Upper/lower flammability or explosive limits | No data available                              |
| k) Vapour pressure                              | 0.05 hPa (0.04 mmHg) at 20 °C (68 °F)          |
| l) Vapour density                               | No data available                              |
| m) Relative density                             | No data available                              |
| n) Water solubility                             | No data available                              |
| o) Partition coefficient: n-octanol/water       | log Pow: 1.44                                  |
| p) Auto-ignition temperature                    | No data available                              |
| q) Decomposition temperature                    | No data available                              |
| r) Viscosity                                    | No data available                              |

- s) Explosive properties      No data available
- t) Oxidizing properties      No data available

## 9.2 Other safety information

No data available

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

Exposure to light may affect product quality.

### 10.5 Incompatible materials

Strong oxidizing agents, Heavy metals

### 10.6 Hazardous decomposition products

Other decomposition products - No data available

In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male and female - 500 mg/kg  
(OECD Test Guideline 423)

Inhalation: No data available

LD50 Dermal - Rat - □ 1,000 mg/kg

No data available

#### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 4 h  
(OECD Test Guideline 404)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Irritating to eyes. - 24 h  
(OECD Test Guideline 405)

#### Respiratory or skin sensitisation

Maximisation Test (GPMT) - Guinea pig  
Result: Does not cause skin sensitisation.  
(OECD Test Guideline 406)

#### Germ cell mutagenicity

Ames test

Salmonella typhimurium

Result: negative

OECD Test Guideline 474

Mouse - male and female

Result: negative

#### Carcinogenicity

Carcinogenicity - Rat - Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Brain and Coverings: Tumors.

### Carcinogenicity - Mouse - Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Lungs, Thorax, or Respiration: Tumors. Lungs, Thorax, or Respiration: Bronchiogenic carcinoma.

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

- IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
- NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### Reproductive toxicity

No data available

No data available

### Specific target organ toxicity - single exposure

No data available

### Specific target organ toxicity - repeated exposure

No data available

### Aspiration hazard

No data available

### Additional Information

RTECS: DM1225000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

- Toxicity to fish                      semi-static test LC50 - Danio rerio (zebra fish) - 180 mg/l - 96 h  
(OECD Test Guideline 203)
- Toxicity to daphnia and              Immobilization EC50 - Daphnia galeata (water flea) - 8.58 mg/l - 48 h  
other aquatic                              (OECD Test Guideline 202)  
invertebrates
- Toxicity to algae                        Growth inhibition EC50 - Selenastrum capricornutum (green algae) - 75 mg/l -  
72 h  
(OECD Test Guideline 201)

### 12.2 Persistence and degradability

- Biodegradability                        aerobic - Exposure time 28 d  
Result: 0 % - Not readily biodegradable.  
(OECD Test Guideline 301D)

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

## 12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Harmful to aquatic life with long lasting effects.

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## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

#### Contaminated packaging

Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

### DOT (US)

Not dangerous goods

### IMDG

Not dangerous goods

### IATA

Not dangerous goods

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## 15. REGULATORY INFORMATION

### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### SARA 311/312 Hazards

Acute Health Hazard

### Massachusetts Right To Know Components

	CAS-No.	Revision Date
Benzotriazole	95-14-7	1993-04-24

### Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Benzotriazole	95-14-7	1993-04-24

### New Jersey Right To Know Components

	CAS-No.	Revision Date
Benzotriazole	95-14-7	1993-04-24

### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## 16. OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Eye Irrit.	Eye irritation
H302	Harmful if swallowed.
H319	Causes serious eye irritation.



H332 Harmful if inhaled.

**HMIS Rating**

Health hazard: 2  
Chronic Health Hazard: 1  
Flammability: 1  
Physical Hazard 0

**NFPA Rating**

Health hazard: 2  
Fire Hazard: 1  
Reactivity Hazard: 0

**Further information**

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**Preparation Information**

Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956

Version: 5.7

Revision Date: 11/24/2015

Print Date: 06/10/2016

# Sodium Carbonate Monohydrate

Safety Data Sheet in accordance with Regulation (EC) 1272/2008 and Regulation (EU) 453/2010



## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product Identifier

Product Name	Sodium carbonate monohydrate
Chemical Name	Sodium carbonate monohydrate
CAS Number	497-19-8
EC Number	207-838-8
Index Number	011-005-00-2
REACH Registration number	01-2119485498-19-0018

### 1.2 Relevant identified uses of the substance/mixture and uses advised against

Used as a water softener in laundry operations, as a household cleaner ingredient and as a general alkali.

#### 1.2.1 Uses advised against

Do not mix with acids

### 1.3 Details of the supplier of the safety data sheet

Company Details: East Lancashire Chemical Co Limited, Edge Lane, Droylsden, Manchester, M43 6AU  
Telephone: +44 (0) 161 3715585  
Fax: +44 (0) 161 3011990  
E-mail address: info@eastlancschemical.com

### 1.4 Emergency Telephone Number

Emergency Number 07836 697940

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) 1272/2008  
Eye irritant 2

2.1.2 Classification according to EU Directive 67/548/EEC  
Irritating to eyes

### 2.2 Label elements

2.2.1 Labelling according to Regulation (EC) 1272/2008  
Hazard Pictogram

Signal Word: Warning



Hazard Statements

H319: Causes serious eye irritation

#### Precautionary Statements:

P102: Keep out of reach of children

P264: Wash hands thoroughly after handling

P280 Wear protective gloves/protective clothing/eye protection/face protection

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P337 + P313: If eye irritation persists: Get medical advice/attention

# Sodium Carbonate Monohydrate



Safety Data Sheet in accordance with Regulation (EC) 1272/2008 and Regulation (EU) 453/2010

2.2.2 Labelling according to Directive 67/548/EEC  
Symbol: X - irritant



Risk Phrases  
R36: Irritating to eyes

Safety Phrases:  
S2: Keep out of the reach of children  
S22: Do not breathe dust  
S24: Avoid contact with skin  
S25: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

## 2.3 Other hazards

The substance does not meet the criteria for PBT or vPvB according to Annex XIII of the REACH Regulation EC 1907/2006 (an inorganic substance)  
No other hazards identified.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1/2 Substance/Mixture

Main constituent	Formula	Purity %w/w (typical)	CAS Number	EC Number
Sodium carbonate monohydrate	$\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$	80-85% $\text{Na}_2\text{CO}_3$	497-19-8	207-838-8
Total water:	15-20% w/w			
Impurities:	No impurities identified.			

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

4.1.1 General advice	Take off all contaminated clothing. No known delayed effects.
Inhalation	Move to fresh air, keep warm and at rest. If symptoms persist seek medical advice.
Skin contact	Remove contaminated clothing. Wash the skin with plenty of water until no 'soapy' feeling remains. Obtain medical attention if symptoms, e.g. redness or irritation, develop.
Eye contact	Remove contact lenses if present. The eye should be thoroughly irrigated with clean water for not less than 15 minutes. Obtain medical attention if symptoms develop.
Ingestion	Wash out mouth with water and give plenty of water to drink. Do not induce vomiting. If patient feels unwell obtain medical attention.
Further Medical Treatment	Symptomatic treatment and supportive therapy as indicated.

### 4.2 Most important symptoms and effects, both acute and delayed

Skin contact: Irritation may occur.  
Eye contact: Redness or irritation may occur.  
Ingestion: May cause coughing..  
Inhalation: There may be shortness of breath with a burning sensation in the throat. Exposure may cause coughing.

# Sodium Carbonate Monohydrate



Safety Data Sheet in accordance with Regulation (EC) 1272/2008 and Regulation (EU) 453/2010

- 4.3 Indication of any immediate medical attention and special treatment needed**  
Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

- 5.1 Extinguishing media**  
Non-combustible although packaging may burn.
- 5.1.1 Suitable extinguishing media  
Use extinguisher suitable for surrounding fire conditions.
- 5.1.2 Unsuitable extinguishing media  
No further information available.
- 5.2 Special hazards arising from the substance or mixture**  
None identified.
- 5.3 Advice for fire fighters**  
No special precautions required.

## 6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures**
- 6.1.1 For non emergency personnel  
Keep dust levels to a minimum.
- 6.1.2 For emergency responders  
In the event of accidental release of bulk solid wear suitable gloves and eye/face protection.  
Use vacuum suction or shovel into containers for re-use or disposal according to local legislation. The affected area can be cleaned with plenty of water.
- 6.2 Environmental precautions**  
Prevent uncontrolled discharges into the environment.
- 6.3 Methods and material for containment and cleaning up**  
Refer to 6.1 above
- 6.4 Reference to other sections**  
For personal protection see Section 8.

## 7. HANDLING AND STORAGE

- 7.1 Precautions for safe handling**  
Always follow good personal hygiene when working with this product. Wash promptly with soap and water if skin becomes contaminated. Do not breathe dust. Avoid contact with skin and eyes. Keep dust levels to a minimum. Ensure adequate ventilation.
- 7.2 Conditions for safe storage, including any incompatibles**  
Store in a cool well-ventilated place in the original closed containers. Avoid contact with acids and finely divided aluminium, zinc, tin and their alloys. The product will melt at 32/33° C.  
In open containers, the product may lose water of crystallisation.  
Keep out of the reach of children.
- 7.3 Specific end use(s)**  
Refer to label on container.

# Sodium Carbonate Monohydrate



Safety Data Sheet in accordance with Regulation (EC) 1272/2008 and Regulation (EU) 453/2010

## 8. EXPOSURE CONTROLS /PERSONAL PROTECTION

### 8.1 Control parameters

Exposure limits (WEL) 10mg/m<sup>3</sup> total dust; 5mg/m<sup>3</sup> respirable dust.

### 8.2 Exposure controls

#### 8.2.1 Appropriate engineering controls

Provide adequate general ventilation. Provide appropriate exhaust ventilation at places where dust is formed. Apply technical measures to comply with the occupational exposure limits.

#### 8.2.2 Personal protective equipment

Respiratory protection In the case of high dust levels wear suitable respiratory protective equipment e.g. dust mask or respirator, that conform international standard, EN143. Recommended filter type P2..

Eye protection Wear eye/face protection rated to protect eyes against dust (EN166) e.g. safety eye shields with dust protection, goggles or face visor.

Skin protection Dust impervious protective suit rubber or plastic boots where appropriate. Gloves are recommended for people with sensitive or damaged skin. Avoid prolonged contact with skin. Rinse hands after use.

Industrial Hygiene Normal standards of industrial hygiene should be observed.

Disposal Empty container thoroughly before disposal, Rinse empty container with water and recycle where possible.

#### 8.2.3 Environmental exposure controls

Contain any large spillage, avoid large discharges to the environment. Dispose of any large rinse water in accordance with local and national regulations.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	fine white crystals
Odour	odourless
Odour threshold	currently not available
pH	>11 (saturated solution)
Melting point/Freezing Point	not applicable
Initial boiling point and boiling point range	not applicable
Flash point	not applicable
Evaporation rate	currently not available
Flammability (solid, gas)	does not ignite
Upper flammability or explosive limits	currently not available
Vapour pressure	currently not available
Vapour density	currently not available
Relative density (pouring density)	1.1g/ml approx.
Solubility(ies):	212.5 g/l @20 deg C(wrt anhydrous salt). Insoluble residue (up to 1%)
Partition coefficient: n-octanol/water	currently not available
Autoignition temperature	Does not burn
Decomposition temperature	loses w of c at 100 deg C
Viscosity	not applicable
Explosive properties	not explosive
Oxidising properties	not an oxidising product

# Sodium Carbonate Monohydrate



Safety Data Sheet in accordance with Regulation (EC) 1272/2008 and Regulation (EU) 453/2010

**9.2 Other information**  
No other information available.

## 10. STABILITY AND REACTIVITY

<b>10.1 Reactivity</b>	Reaction with strong acids causes evolution of carbon dioxide.
<b>10.2 Chemical stability</b>	Loses water of crystallisation on prolonged standing in air and when heated to 32° C.
<b>10.3 Possibility of hazardous reactions</b>	Liberates carbon dioxide when mixed with acid. Solutions may react with new surfaces of aluminium and zinc and their alloys to produce hydrogen.
<b>10.4 Conditions to avoid</b>	Strong heat causing the product to melt and then dry out.
<b>10.5 Incompatible materials</b>	Acids, aluminium and zinc.
<b>10.6 Hazardous decomposition products</b>	None.

## 11. TOXICOLOGICAL INFORMATION

**11.1 Information on toxicological effects**  
No specific information available.

Inhalation	High concentrations of dust will irritate the respiratory system.
Skin contact	May cause skin irritation resulting from removal of natural greases.
Eye contact	Irritating to the eyes. May cause corneal damage in severe circumstances.
Ingestion	May result in a burning sensation in the mouth and throat, inability to swallow, and irritation of the gastro-intestinal tract with nausea and vomiting.

## 12. ECOLOGICAL INFORMATION

**12.1 Toxicity**  
No specific information available.

**12.2 Persistence and degradability**  
Not applicable.

**12.3 Bioaccumulative potential**  
No bioaccumulation expected.

**12.4 Mobility in soil**  
Readily absorbed into soil.

**12.5 Results of PBT and vPvB assessment**  
Not a PBT or a PvB substance.

**12.6 Other adverse effects**  
Based on bulk product.  
High concentrations in receiving waters can cause long term adverse effects on the aquatic environment by raising pH. Low toxicity to fish.  
No environmental hazard is likely provided the product is handled and disposed of with due care in accordance with normal household practice on following the instructions on the label.

# Sodium Carbonate Monohydrate

Safety Data Sheet in accordance with Regulation (EC) 1272/2008 and Regulation (EU) 453/2010



## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

Disposal should be in accordance with local, county or national legislation. Small quantities may be washed away using plenty of water. Dispose of contents by using as per directions for use. Rinse empty container and recycle where possible.

## 14. TRANSPORT INFORMATION

In its normal packaging this product is not classified as hazardous for transport.

## 15 REGULATORY INFORMATION

### 15.1 Safety, health and and environmental regulations/legislation specific for the substance or mixture

Health, safety and environmental details to be shown on label. Ref. Regulation (EC) 1272/2008 and EU Directive 67/548/EEC.  
Refer to Section 2.

### 15.2 Chemical safety assessment

A Chemical safety assessment has been undertaken on sodium carbonate by our supplier.

## 16. OTHER INFORMATION

List of relevant R-phrases and symbols not included in Sections 2 and 3

No further statements included.

Abbreviations and acronyms

**PBT** Persistent, Bioaccumulative, Toxic

**vPvB** very Persistent, very Bioaccumulative

**WEL** Workplace exposure limit

The product information in this Data Sheet is, to the best of Dri-Pak's knowledge, correct as at the date of publication. No warranty is implied with respect to the quality or the specification of the product. The user must satisfy himself/herself that the product is suitable for his/her purpose.

## SAFETY DATA SHEET

Version 3.8  
Revision Date 03/02/2015  
Print Date 05/28/2016

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**1. PRODUCT AND COMPANY IDENTIFICATION****1.1 Product identifiers**

Product name : Pyrogallol

Product Number : P0381  
Brand : Sigma  
Index-No. : 604-009-00-6

CAS-No. : 87-66-1

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Laboratory chemicals, Manufacture of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052

**1.4 Emergency telephone number**

Emergency Phone # : (314) 776-6555

---

**2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 3), H301  
Acute toxicity, Inhalation (Category 4), H332  
Acute toxicity, Dermal (Category 4), H312  
Skin irritation (Category 2), H315  
Eye irritation (Category 2A), H319  
Germ cell mutagenicity (Category 2), H341  
Acute aquatic toxicity (Category 3), H402  
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word : Danger

Hazard statement(s)

H301 : Toxic if swallowed.  
H312 + H332 : Harmful in contact with skin or if inhaled  
H315 : Causes skin irritation.  
H319 : Causes serious eye irritation.  
H341 : Suspected of causing genetic defects.  
H412 : Harmful to aquatic life with long lasting effects.



Precautionary statement(s)	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P322	Specific measures (see supplemental first aid instructions on this label).
P330	Rinse mouth.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Synonyms	: 1,2,3-Trihydroxybenzene
Formula	: C <sub>6</sub> H <sub>6</sub> O <sub>3</sub>
Molecular weight	: 126.11 g/mol
CAS-No.	: 87-66-1
EC-No.	: 201-762-9
Index-No.	: 604-009-00-6

#### Hazardous components

Component	Classification	Concentration
<b>1,2,3-Trihydroxybenzene</b>	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; Muta. 2; Aquatic Acute 3; Aquatic Chronic 3; H302 + H312 + H332, H315, H319, H341, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

**4.3 Indication of any immediate medical attention and special treatment needed**

No data available

---

**5. FIREFIGHTING MEASURES****5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**5.2 Special hazards arising from the substance or mixture**

Carbon oxides

**5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Further information**

No data available

---

**6. ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures**

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

**6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**6.3 Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

For disposal see section 13.

---

**7. HANDLING AND STORAGE****7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities**

Keep container tightly closed in a dry and well-ventilated place.

Light sensitive. Handle and store under inert gas. Air and light sensitive.

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Control parameters****Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

## 8.2 Exposure controls

### Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

### Personal protective equipment

#### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

#### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |  |   |
|--|---|
| a) Appearance                              | Form: crystalline<br>Colour: beige                      |
| b) Odour                                   | No data available                                       |
| c) Odour Threshold                         | No data available                                       |
| d) pH                                      | 5.8 at 10 g/l   |
| e) Melting point/freezing point            | Melting point/range: 132 - 134 °C (270 - 273 °F) - lit. |
| f) Initial boiling point and boiling range | 309 °C (588 °F) - lit.                                  |
| g) Flash point                             | No data available                                       |

h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure	3 - 5 hPa (2 - 4 mmHg) at 140 °C (284 °F) 13 hPa (10 mmHg) at 167.7 °C (333.9 °F)
l) Vapour density	No data available
m) Relative density	1.450 g/cm <sup>3</sup> at 20 °C (68 °F)
n) Water solubility	soluble
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

## 9.2 Other safety information

Bulk density	0.60 g/l
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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

Oxidizing agents

### 10.6 Hazardous decomposition products

Other decomposition products - No data available

In the event of fire: see section 5

---

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Mouse - 300 mg/kg

Inhalation: No data available

No data available

#### Skin corrosion/irritation

Skin - Rabbit

Result: Severe skin irritation - 24 h

(Draize Test)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Moderate eye irritation - 24 h  
(Draize Test)

**Respiratory or skin sensitisation**

No data available

**Germ cell mutagenicity**

In vitro tests showed mutagenic effects

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

No data available

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: UX2800000

Cough, Shortness of breath, Headache, Nausea, Vomiting, Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

---

**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

Toxicity to fish LC50 - Danio rerio (zebra fish) - 41.8 mg/l - 96.0 h

**12.2 Persistence and degradability**

No data available

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Other adverse effects**

Harmful to aquatic life.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

No data available

---

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### Contaminated packaging

Dispose of as unused product.

---

## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 2811      Class: 6.1      Packing group: III  
Proper shipping name: Toxic solids, organic, n.o.s. (1,2,3-Trihydroxybenzene)  
Reportable Quantity (RQ):

Poison Inhalation Hazard: No

### IMDG

UN number: 2811      Class: 6.1      Packing group: III      EMS-No: F-A, S-A  
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (1,2,3-Trihydroxybenzene)

### IATA

UN number: 2811      Class: 6.1      Packing group: III  
Proper shipping name: Toxic solid, organic, n.o.s. (1,2,3-Trihydroxybenzene)

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## 15. REGULATORY INFORMATION

### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

### Pennsylvania Right To Know Components

	CAS-No.	Revision Date
1,2,3-Trihydroxybenzene	87-66-1	

### New Jersey Right To Know Components

	CAS-No.	Revision Date
1,2,3-Trihydroxybenzene	87-66-1	

### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

---

## 16. OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity

Eye Irrit.	Eye irritation
H301	Toxic if swallowed.
H302 + H312 + H332	Harmful if swallowed, in contact with skin or if inhaled
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.

**HMIS Rating**

Health hazard:	3
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

**NFPA Rating**

Health hazard:	3
Fire Hazard:	0
Reactivity Hazard:	0

**Further information**

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**Preparation Information**

Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956

Version: 3.8

Revision Date: 03/02/2015

Print Date: 05/28/2016



## Material Safety Data Sheet

Creation Date 20-Jan-2010

Revision Date 20-Jan-2010

Revision Number 1

### 1. PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name</b>	<b>Sodium sulfite anhydrous</b>
<b>Cat No.</b>	<b>BP355-500; S430-3; S430-10; S430-500; S447-3; S447-500</b>
<b>Synonyms</b>	Disodium sulfite; Sulfurous acid, disodium salt (Crystalline/Powder/Certified ACS/Low Phosphate)
<b>Recommended Use</b>	Laboratory chemicals
<b>Company</b>	<b>Emergency Telephone Number</b>
Fisher Scientific	CHEMTREC®, Inside the USA: 800-424-9300
One Reagent Lane	CHEMTREC®, Outside the USA: 703-527-3887
Fair Lawn, NJ 07410	
Tel: (201) 796-7100	

### 2. HAZARDS IDENTIFICATION

**WARNING!**

**Emergency Overview**

Contact with acids liberates toxic gas. May cause eye, skin, and respiratory tract irritation . May cause central nervous system effects.

<b>Appearance</b> Off-white	<b>Physical State</b> Solid	<b>odor</b> odorless
-----------------------------	-----------------------------	----------------------

**Target Organs** Central nervous system (CNS)

**Potential Health Effects**

**Acute Effects**  
**Principle Routes of Exposure**

<b>Eyes</b> <b>Skin</b> <b>Inhalation</b> <b>Ingestion</b>	May cause irritation. May cause irritation. May be harmful in contact with skin. May cause irritation of respiratory tract. May be harmful if inhaled. May be harmful if swallowed. May cause central nervous system effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
---	--

**Chronic Effects** Mutagenic effects have occurred in experimental animals..

See Section 11 for additional Toxicological information.







**Aggravated Medical Conditions** No information available.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Haz/Non-haz**

Component	CAS-No	Weight %
Sodium sulfite	7757-83-7	97

**4. FIRST AID MEASURES**

**Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

**Inhalation** Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.

**Ingestion** Do not induce vomiting. Obtain medical attention.

**Notes to Physician** Treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

**Flash Point** No information available.  
**Method** No information available.

**Autoignition Temperature** No information available.

**Explosion Limits**

**Upper** No data available  
**Lower** No data available

**Suitable Extinguishing Media** Substance is nonflammable; use agent most appropriate to extinguish surrounding fire..

**Unsuitable Extinguishing Media** No information available.

**Hazardous Combustion Products** No information available.

**Sensitivity to mechanical impact** No information available.  
**Sensitivity to static discharge** No information available.

**Specific Hazards Arising from the Chemical**  
 Thermal decomposition can lead to release of irritating gases and vapors.

**Protective Equipment and Precautions for Firefighters**  
 As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

**NFPA**                      **Health** 1                      **Flammability** 0                      **Instability** 1                      **Physical hazards** N/A





**6. ACCIDENTAL RELEASE MEASURES**

<b>Personal Precautions</b>	Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing.
<b>Environmental Precautions</b>	Should not be released into the environment.
<b>Methods for Containment and Clean Up</b>	Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal.

**7. HANDLING AND STORAGE**

<b>Handling</b>	Wear personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Do not breathe dust. Avoid contact with skin, eyes and clothing. Keep away from acids.
<b>Storage</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near acids.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

<b>Engineering Measures</b>	Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.
<b>Exposure Guidelines</b>	This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

*NIOSH IDLH: Immediately Dangerous to Life or Health*

**Personal Protective Equipment**

**Eye/face Protection**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166

**Skin and body protection**

Wear appropriate protective gloves and clothing to prevent skin exposure

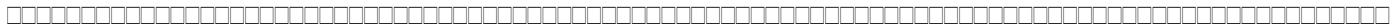
**Respiratory Protection**

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Solid
<b>Appearance</b>	Off-white
<b>odor</b>	odorless
<b>Odor Threshold</b>	No information available.
<b>pH</b>	8.5-10 5% aq.sol.
<b>Vapor Pressure</b>	No information available.
<b>Vapor Density</b>	No information available.
<b>Viscosity</b>	No information available.
<b>Boiling Point/Range</b>	No information available.
<b>Melting Point/Range</b>	□500°C / 932°F
<b>Decomposition temperature °C</b>	500
<b>Flash Point</b>	No information available.
<b>Evaporation Rate</b>	No information available.
<b>Specific Gravity</b>	2.630
<b>Solubility</b>	Partly soluble in water
<b>log Pow</b>	No data available





**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Molecular Weight** 126.04  
**Molecular Formula** Na2SO3

**10. STABILITY AND REACTIVITY**

**Stability** Air sensitive. Moisture sensitive.  
**Conditions to Avoid** Incompatible products. Excess heat. Exposure to air. Exposure to moisture.  
**Incompatible Materials** Strong oxidizing agents, Acids  
**Hazardous Decomposition Products** Sulfur oxides, Sodium oxides  
**Hazardous Polymerization** Hazardous polymerization does not occur  
**Hazardous Reactions .** Contact with acids liberates toxic gas.

**11. TOXICOLOGICAL INFORMATION**

Acute Toxicity

**Component Information**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium sulfite	820 mg/kg ( Rat )	Not listed	22 mg/L ( Rat ) 1 h 5.5 mg/L ( Rat ) 4 h

**Irritation** No information available.  
**Toxicologically Synergistic Products** No information available.  
Chronic Toxicity  
**Carcinogenicity** There are no known carcinogenic chemicals in this product  
**Sensitization** No information available.  
**Mutagenic Effects** Mutagenic effects have occurred in experimental animals.  
**Reproductive Effects** No information available.  
**Developmental Effects** No information available.  
**Teratogenicity** No information available.  
**Other Adverse Effects** See actual entry in RTECS for complete information.





**Endocrine Disruptor Information**      No information available

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Sodium sulfite	Not listed	Not listed	EC50 = 770 mg/L 17 h	LC50 24 h 330 mg/L

**Persistence and Degradability**      No information available

**Bioaccumulation/ Accumulation**      No information available

**Mobility**

Component	log Pow
Sodium sulfite	-4

**13. DISPOSAL CONSIDERATIONS**

**Waste Disposal Methods**      Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification

**14. TRANSPORT INFORMATION**

**DOT**      Not regulated

**TDG**      Not regulated

**IATA**      Not regulated

**IMDG/IMO**      Not regulated

**15. REGULATORY INFORMATION**

**International Inventories**

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Sodium sulfite	X	X	-	231-821-4	-		X	X	X	X	KE-31612 X





**Legend:**

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations**

**TSCA 12(b)** Not applicable

**SARA 313**

Not applicable

**SARA 311/312 Hazardous Categorization**

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

**Clean Water Act**

Not applicable

**Clean Air Act**

Not applicable

**OSHA**

Not applicable

**CERCLA**

Not Applicable

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**State Right-to-Know**

Not applicable

**U.S. Department of Transportation**

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

**Other International Regulations**





Mexico - Grade No information available

Canada

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 Hazard Class  
Non-controlled

16. OTHER INFORMATION

Prepared By Regulatory Affairs  
Thermo Fisher Scientific  
Tel: (412) 490-8929

Creation Date 20-Jan-2010

Print Date 20-Jan-2010

Revision Summary "\*\*\*\*", and red text indicates revision

**Disclaimer**  
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS





# TCI AMERICA

## SAFETY DATA SHEET

Revision number: 2  
Revision date: 10/06/2014

### 1. IDENTIFICATION

**Product name:** 4-(Methylamino)phenol Sulfate  
**Product code:** M0145

**Product use:** For laboratory research purposes.  
**Restrictions on use:** Not for drug or household use.

**Company:**  
TCI America  
9211 N. Harborside Street  
Portland, OR 97203 U.S.A.  
**Telephone:**  
+1-800-423-8616 / +1-503-283-1681  
**Fax:**  
+1-888-520-1075 / +1-503-283-1987  
**e-mail:**  
sales-US@TCIchemicals.com  
www.TCIchemicals.com

**Emergency telephone number:**  
**Chemical Emergencies:**  
TCI America (8:00am - 5:00pm) PST  
+1-503-286-7624  
**Transportation Emergencies:**  
Chemtrec 24-Hour  
+1-800-424-9300 (U.S.A.)  
+1-703-527-3887 (International)  
**Responsible department:**  
TCI America  
Environmental Health Safety and Security  
+1- 503-286-7624

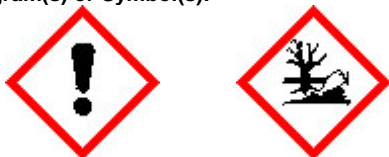
### 2. HAZARD(S) IDENTIFICATION

**OSHA Haz Com: CFR 1910.1200:** Acute Toxicity - Oral  Category 4  
Sensitization - Skin  Category 1  
Aquatic Hazard (Acute)  Category 1  
Aquatic Hazard (Long-Term)  Category 1

**Signal word:** Warning!

**Hazard Statement(s):** Harmful if swallowed  
May cause an allergic skin reaction  
Very toxic to aquatic life  
Very toxic to aquatic life with long lasting effects

**Pictogram(s) or Symbol(s):**



**Precautionary Statement(s):**

**[Prevention]**

Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling. Avoid breathing dusts or mists. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves.

**[Response]**

If swallowed: Immediately call a poison center or doctor. Rinse mouth. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

**[Storage]**

None

**[Disposal]**

Dispose of contents and container in accordance with US EPA guidelines for the classification and determination of hazardous waste listed in 40 CFR 261.3. (See Section 13)

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance/Mixture:** Substance  
**Components:** 4-(Methylamino)phenol Sulfate

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Percent:	□98.0%(HPLC)(N)
CAS Number:	55-55-0
Molecular Weight:	344.38
Chemical Formula:	C <sub>14</sub> H <sub>18</sub> N <sub>2</sub> O <sub>2</sub> ·H <sub>2</sub> SO <sub>4</sub>

**4. FIRST-AID MEASURES**

<b>Inhalation:</b>	May cause coughing, difficult breathing and nausea. Call emergency medical service. Effects of exposure (inhalation) to substance may be delayed. Inhalation of vapors or contact with substance will result in contamination and potential harmful effects. Move victim to fresh air. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult. Keep victim warm and quiet. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
<b>Skin contact:</b>	Call a poison center or doctor if you feel unwell. Effects of exposure (skin contact) to substance may be delayed. Remove and wash contaminated clothing before re-use. Remove and isolate contaminated clothing and shoes. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
<b>Eye contact:</b>	If this chemical contacts the eyes, immediately wash (irrigate) the eyes with large amounts of water, occasionally lifting the lower and upper eyelids. If eye irritation persists get medical advice/attention. Move victim to fresh air. Check for and remove any contact lenses. Keep victim warm and quiet. Treat symptomatically and supportively. Effects of exposure to substance may be delayed. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
<b>Ingestion:</b>	Harmful if swallowed. Effects of exposure (ingestion) to substance may be delayed. If swallowed, seek medical advice immediately and show the container or label. Do not use mouth-to-mouth method if victim ingested the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Loosen tight clothing such as a collar, tie, belt or waistband. If a person vomits place them in the recovery position so that vomit will not reenter the mouth and throat. Rinse mouth. Keep victim warm and quiet. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

**Symptoms/effects:**

<b>Acute:</b>	No data available
<b>Delayed:</b>	May cause skin sensitization.

**Immediate medical attention:**

WARNING: It might be hazardous to the person providing aid to give mouth-to-mouth respiration, because the inhaled material is harmful. CAUTION: Victim may be a source of contamination. If breathing has stopped, perform artificial respiration. Use first aid treatment according to the nature of the injury. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

**5. FIRE-FIGHTING MEASURES**

**Suitable extinguishing media:** Dry chemical, CO<sub>2</sub>, water spray, or alcohol-resistant foam. Consult with local fire authorities before attempting large scale fire fighting operations.

**Specific hazards arising from the chemical**

**Hazardous combustion products:** These products include: Carbon oxides Nitrogen oxides Silicates

**Other specific hazards:** Closed containers may explode from heat of a fire.

**Special precautions for fire-fighters:**

Use water spray or fog; do not use straight streams. Dike fire-control water for later disposal; do not scatter the material. Containers may explode when heated. Move containers from fire area if you can do it without risk.

**Special protective equipment for fire-fighters:**

Wear positive pressure self-contained breathing apparatus (SCBA). Structural fire fighters' protective clothing provides limited protection in fire situations ONLY; it may not be effective in spill situations. Wear chemical protective clothing which is specifically recommended by the manufacturer. It may provide little or no thermal protection.

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions:**

Avoid contact with skin, eyes, and clothing. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing (Section 8). Warn unnecessary personnel to move away. Stop leak if you can do it without risk. Ensure adequate ventilation. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

**Personal protective equipment:**

Safety glasses. Wear protective clothing (chemical resistant suit and chemical resistant boots). Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear protective gloves (nitrile).



**6. ACCIDENTAL RELEASE MEASURES**

**Emergency procedures:** Prevent dust cloud. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and exercise caution. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Warn personnel to move away. Prevent entry into sewers, basements or confined areas; dike if needed.

**Methods and materials for containment and cleaning up:**

ELIMINATE all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if without risk. Absorb with an inert material and put the spilled material in an appropriate waste disposal container. Use clean non-sparking tools to collect absorbed material. Dike far ahead of spill; use dry sand to contain the flow of material. Ventilate the area.

**Environmental precautions:**

Keep away from living quarters. Environmental hazard. Do not let product enter drains. Prevent further leakage or spillage if safe to do so. Water runoff can cause environmental damage. Prevent entry into sewers, basements or confined areas; dike if needed.

**7. HANDLING AND STORAGE**

**Precautions for safe handling:** Avoid inhalation of vapor or mist. Do not ingest. Avoid contact with skin and eyes. Good general ventilation should be sufficient to control airborne levels. Keep container dry. Handle and open container with care. Wear suitable protective clothing, gloves and eye/face protection. When using do not eat, drink, or smoke. Keep away from sources of ignition.

**Conditions for safe storage:** Keep only in the original container in a cool well-ventilated place. Keep away from incompatibles. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Avoid prolonged storage periods.

**Storage incompatibilities:** Store away from oxidizing agents

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Exposure limits:** No data available

**Appropriate engineering controls:**

Good general ventilation should be sufficient to control airborne levels. Ventilation is normally required when handling or using this product. Eyewash fountains should be provided in areas where there is any possibility that workers could be exposed to the substance. Follow safe industrial engineering/laboratory practices when handling any chemical.

**Personal protective equipment**

**Respiratory protection:** Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent.

**Hand protection:** Wear protective gloves.

**Eye protection:** Safety glasses.

**Skin and body protection:** Lab coat.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Physical state (20°C):** Solid

**Form:** Crystal - Powder

**Color:** White - Deep green

**Odor:** No data available

**Odor threshold:** No data available

<b>Melting point/freezing point:</b>	260°C (dec.) (500°F)	<b>pH:</b>	No data available
<b>Boiling point/range:</b>	No data available	<b>Vapor pressure:</b>	No data available
<b>Decomposition temperature:</b>	No data available	<b>Vapor density:</b>	No data available
<b>Relative density:</b>	No data available	<b>Dynamic Viscosity:</b>	No data available
<b>Kinematic Viscosity:</b>	No data available		
<b>Partition coefficient: n-octanol/water (log P<sub>ow</sub>)</b>	No data available	<b>Evaporation rate: (Butyl Acetate = 1)</b>	No data available
<b>Flash point:</b>	No data available	<b>Autoignition temperature:</b>	531°C (988°F)
<b>Flammability (solid, gas):</b>	No data available	<b>Flammability or explosive limits:</b>	
		<b>Lower:</b>	No data available
		<b>Upper:</b>	No data available

**Solubility(ies):**

**Water:** Soluble (4.7g/100mL, 15°C)

**Slightly soluble:** Alcohols

**Insoluble:** Ether

**10. STABILITY AND REACTIVITY**

<b>Reactivity:</b>	Not Available.
<b>Chemical Stability:</b>	Moisture sensitive. Light sensitive.
<b>Possibility of Hazardous Reactions:</b>	No hazardous reactivity has been reported.
<b>Conditions to avoid:</b>	Exposure to light. Exposure to moisture. Moisture sensitive.
<b>Incompatible materials:</b>	Oxidizing agents
<b>Hazardous Decomposition Products:</b>	No data available

**11. TOXICOLOGICAL INFORMATION**

**RTECS Number:** SL8650000

**Acute Toxicity:**

ipr-rat LDLo:50 mg/kg

orl-mus LD50:565 mg/kg

orl-rat LDLo:200 mg/kg

skn-gpg LD50:□1 g/kg

**Skin corrosion/irritation:**

skn-hmn 1 %/48H

**Serious eye damage/irritation:**

No data available

**Respiratory or skin sensitization:**

No data available

**Germ cell mutagenicity:**

mno-sat 167 ug/plate (-S9)

**Carcinogenicity:**

No data available

**IARC:** No data available

**NTP:** No data available

**OSHA:** No data available

**Reproductive toxicity:**

No data available

**Routes of Exposure:**

Inhalation, Eye contact, Ingestion, Skin contact.

**Symptoms related to exposure:**

Overexposure may result in serious illness or death. Skin contact may result in sensitization. Readily absorbed through skin.

**Potential Health Effects:**

No specific information available; skin and eye contact may result in irritation. May be harmful if inhaled or ingested.

**Target organ(s):**

No data available

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

**Fish:**

No data available

**Crustacea:**

No data available

**Algae:**

No data available

**Persistence and degradability:**

No data available

**Bioaccumulative potential (BCF):**

No data available

**Mobility in soil:**

No data available

**Partition coefficient:**

No data available

**n-octanol/water (log P<sub>ow</sub>)****Soil adsorption (K<sub>oc</sub>):**

No data available

**Henry's Law:**

No data available

**constant (PaM<sup>3</sup>/mol)**

**13. DISPOSAL CONSIDERATIONS**

<b>Disposal of product:</b>	Recycle to process if possible. It is the generator's responsibility to comply with Federal, State and Local rules and regulations. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. This section is intended to provide assistance but does not replace these laws, nor does compliance in accordance with this section ensure regulatory compliance according to the law. US EPA guidelines for Identification and Listing of Hazardous Waste are listed in 40 CFR Parts 261. The product should not be allowed to enter the environment, drains, water ways, or the soil.
<b>Disposal of container:</b>	Dispose of as unused product. Do not re-use empty containers.
<b>Other considerations:</b>	Observe all federal, state and local regulations when disposing of the substance.

**14. TRANSPORT INFORMATION**

<b>DOT (US)</b>	Non-hazardous for transportation.
<b>IATA</b>	Non-hazardous for transportation.
<b>IMDG</b>	Non-hazardous for transportation.

**15. REGULATORY INFORMATION****Toxic Substance Control Act (TSCA 8b.):**

This product is ON the EPA Toxic Substances Control Act (TSCA) inventory.

**US Federal Regulations****CERCLA Hazardous substance and Reportable Quantity:**

<b>SARA 313:</b>	Not Listed
<b>SARA 302:</b>	Not Listed

**State Regulations****State Right-to-Know**

<b>Massachusetts</b>	Not Listed
<b>New Jersey</b>	Not Listed
<b>Pennsylvania</b>	Not Listed
<b>California Proposition 65:</b>	Not Listed

**Other Information****NFPA Rating:**

<b>Health:</b>	2
<b>Flammability:</b>	0
<b>Instability:</b>	0

**HMIS Classification:**

<b>Health:</b>	2
<b>Flammability:</b>	0
<b>Physical:</b>	0

**International Inventories**

<b>WHMIS hazard class:</b>	D2A: Materials causing other toxic effects. (Very Toxic) D2B: Materials causing other toxic effects. (Toxic)
<b>EC-No:</b>	200-237-1

**16. OTHER INFORMATION**

**Revision date:** 10/06/2014

**Revision number:** 2

TCI chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its affiliates or subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our SDS are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated SDS for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, face mask, fume hood). For proper handling and disposal, always comply with federal, state and local regulations.