

World Headquarters
Hach Company
P.O.Box 389
Loveland, CO USA 80539
(970) 669-3050

MSDS No: M00197

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name: ECR Masking Reagent Solution
Catalog Number: 2380123

HACH LANGE GmbH
Willstätterstrasse 11
40549 Düsseldorf, Germany
+49-(0)211-52880

Emergency Telephone Numbers:
(Poison Information Center Main)
(+49 (0) 6131 19240) 24 HR

SDS Number: M00197

Chemical Name: Not applicable

Chemical Formula: Not applicable

Chemical Family: Not applicable

Use of the substance/preparation: Determination of aluminum

CAS No.: Not applicable

Hazard: Toxic. May cause irritation.

Date of MSDS Preparation:

Day: 12

Month: 01

Year: 2006

Additional Emergency Response Numbers: Austria: +49 (0)6131 19240, Belgium: +32-(0)70-245245, France: +33 (0)1-40370404, Italy: +39-0266101029, Netherlands: +31 -(0)30-2748888, Switzerland: +41-(0)1-25151

2. COMPOSITION / INFORMATION ON INGREDIENTS

Ammonium fluoride

EEC Number: 2351859

CAS No.: 12125-01-8

Percent Range: 15,0 - 25,0

Percent Range Units: weight / volume

Ingredient EEC Symbol: Xn - HARMFUL

Ingredient R phrase(s) (R phrase details given in Heading 16): R 20/21/22

TLV: 2,5 mg/m³ as F

PEL: 2,5 mg/m³ as F

EU Occupational Exposure Limits: For ammonia, 20 ppm (14 mg/m³); STEL: 50 ppm (36 mg/m³) Recommended For inorganic fluorides: 2,5 ppm Recommended

Ammonium Citrate, Dibasic

EEC Number: 2211463

CAS No.: 3012655

Percent Range: 15,0 - 25,0

Percent Range Units: weight / volume

Ingredient EEC Symbol: Not applicable

Ingredient R phrase(s) (R phrase details given in Heading 16): Not applicable

TLV: Not established

PEL: Not established

EU Occupational Exposure Limits: For ammonia, 20 ppm (14 mg/m³); STEL: 50 ppm (36 mg/m³) Recommended

Demineralized Water

EEC Number: 2317912

CAS No.: 7732185

Percent Range: 55,0 - 65,0

Percent Range Units: volume / volume
Ingredient EEC Symbol: Not applicable
Ingredient R phrase(s) (R phrase details given in Heading 16): Not applicable
TLV: Not established
PEL: Not established
EU Occupational Exposure Limits: Not established

3. HAZARDS IDENTIFICATION

Emergency Overview:

Appearance: Clear, colorless

Odor: None

EU Symbols: Xn - HARMFUL

R PHRASES: R 20/21/22: Harmful by inhalation, in contact with skin and if swallowed.

Protective Equipment:

Potential Health Effects:

Eye Contact (EC): May cause irritation

Skin Contact (EC): May cause irritation

Skin Absorption (EC): Toxic Will be absorbed through the skin.

Target Organs (SA E): Bone marrow Red blood cells Kidneys Central nervous system

Ingestion (EC): Toxic Causes: weakness nausea vomiting abdominal pain diarrhea convulsions shock

Target Organs (Ing E): Bone marrow Red blood cells Kidneys Central nervous system

Inhalation: No effects anticipated

Target Organs (Inh E): Not applicable

Medical Conditions Aggravated: Pre-existing: Eye conditions Skin conditions Kidney conditions

Chronic Effects: Chronic overexposure may cause adverse effects to the blood kidney damage brain damage

Cancer / Reproductive Toxicity Information:

This product does NOT contain any IARC listed chemicals.

Additional Cancer / Reproductive Toxicity Information: None reported

Toxicologically Synergistic Products: None reported

4. FIRST AID MEASURES

Eye Contact: Immediately flush eyes with water for 15 minutes. Call physician.

Skin Contact (First Aid): Wash skin with soap and plenty of water for 15 minutes. Call physician immediately.

Ingestion (First Aid): Do not induce vomiting. Give 1-2 glasses of water. Call physician immediately. Never give anything by mouth to an unconscious person.

Inhalation: Remove to fresh air.

5. FIRE FIGHTING MEASURES

Flammable Properties: During a fire, corrosive and toxic gases may be generated by thermal decomposition.

Hazardous Combustion Products: Toxic fumes of: ammonia nitrogen oxides.

Fire / Explosion Hazards: May react violently with: strong acids chlorine / chlorine compounds

Static Discharge: None reported.

Mechanical Impact: None reported

Extinguishing Media: Use media appropriate to surrounding fire conditions

Extinguishing Media NOT To Be Used: Not applicable

Fire Fighting Instruction: As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Spill Response Notice:

Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

Containment Technique: Absorb spilled liquid with non-reactive sorbent material. Stop spilled material from being released to the environment.

Clean-up Technique: Cover spilled material with an alkali, such as soda ash or sodium bicarbonate. Scoop up slurry into a large beaker. Dilute with a large excess of water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution.

Evacuation Procedure: Evacuate as needed to perform spill clean-up. If conditions warrant, increase the size of the evacuation.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes skin Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

Storage: Keep away from: acids oxidizers

Special Packaging Instructions: Not applicable

Use of the substance/preparation: Determination of aluminum

8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

Engineering Controls: Have an eyewash station nearby. Maintain general industrial hygiene practices when using this product.

Personal Protective Equipment:

Eye Protection: chemical splash goggles

Skin / Hand Protection: disposable latex gloves lab coat

Inhalation Protection: adequate ventilation

Precautionary Measures: Avoid contact with: eyes skin Wash thoroughly after handling. Keep away from: acids/acid fumes oxidizers

TLV: Not established

PEL: Not established

EU Occupational Exposure Limits: Not established

9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: Clear, colorless

Physical State: Liquid

Odor: None

pH: 5,4

Vapor Pressure: Not available

Vapor Density (air = 1): Not available

Boiling Point: 99°C; 210°F

Melting Point: -24°C; -11°F

Flash Point: Not applicable

Method: Not applicable

Autoignition Temperature: Not applicable

Flammability Limits:

Lower Explosion Limits: Not applicable

Upper Explosion Limits: Not applicable

Specific Gravity (water = 1): 1,147

Evaporation Rate (water = 1): 0,68

Volatile Organic Compounds Content: Not applicable

Partition Coefficient (n-octanol / water): Not applicable

Solubility:

Water: Miscible

Acid: Not determined

Other: Not determined

Metal Corrosivity:

Steel: 0,012 in/yr

Aluminum: 0,006 in/yr

10. STABILITY / REACTIVITY

Chemical Stability: Stable when stored under proper conditions.

Conditions to Avoid: Extreme temperatures Heating to decomposition.

Reactivity / Incompatibility: Incompatible with: acids oxidizers glass or metal containers

Hazardous Decomposition: Heating to decomposition releases toxic and/or corrosive fumes of: ammonia nitrogen oxides hydrogen fluoride

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Product Toxicological Data:

LD50: None reported

LC50: None reported

Dermal Toxicity Data: None reported

Skin and Eye Irritation Data: None reported

Mutation Data: None reported

Reproductive Effects Data: None reported

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Ingredient Toxicological Data: --

No toxicological data available for the ingredients of this product.

This product does NOT contain any IARC listed chemicals.

12. ECOLOGICAL INFORMATION

Product Ecological Information: --

No ecological data available for this product.

Ingredient Ecological Information: --

No ecological data available for the ingredients of this product.

13. DISPOSAL CONSIDERATIONS

NOTICE (Disposal): These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

14. TRANSPORT INFORMATION

I.C.A.O.:

I.C.A.O. Proper Shipping Name: Not Currently Regulated

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ICAO Hazard Class: NA

ICAO Subsidiary Risk: NA

ICAO UN/ID Number: NA

ICAO Packing Group: NA

I.M.O.:

I.M.O. Proper Shipping Name: Not Currently Regulated

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I.M.O. Hazard Class: NA

I.M.O. Subsidiary Risk: NA

I.M.O. UN Number: NA

I.M.O. Packing Group: NA

A.D.R.:

A.D.R. Proper Shipping Name: Not Currently Regulated

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A.D.R Hazard Class: NA

A.D.R. Subsidiary Risk: NA

A.D.R. UN-Number:: NA

A.D.R. Packing Group: NA

Additional Information: This product may be shipped as part of a chemical kit composed of various compatible dangerous goods for analytical or testing purposes. This kit would have the following classification: Proper Shipping Name: Chemical Kit Hazard Class: 9 UN Number 3316

15. REGULATORY INFORMATION

National Inventories:

EEC Inventory Status: All ingredients used to make this product are listed on EINECS / ELINCS.

EEC Number: Not applicable

EEC LABEL COPY:

EU Symbols: X_n - HARMFUL

R PHRASES: R 20/21/22: Harmful by inhalation, in contact with skin and if swallowed.

S PHRASES: S 1/2: Keep locked up and out of reach of children. S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 44: If you feel unwell, seek medical advice (show the label where possible).

16. OTHER INFORMATION

References: 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Technical Judgment. In-house information. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984. NIOSH Registry of Toxic Effects of Chemical Substances, 1985-86. Cincinnati: U.S. Department of Health and Human Services, April, 1987. List of Dangerous Substances Classified in Annex I of the EEC Directive (67/548) - Classification, Packaging and Labeling of Dangerous Substances, Amended July 1992. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991. The Merck Index, 11th Ed. Rahway, New Jersey: Merck and Co., Inc., 1989.

R PHRASES: R 20/21/22: Harmful by inhalation, in contact with skin and if swallowed.

Use of the substance/preparation: Determination of aluminum

Revision Summary: Updates in Section(s) 14,

Legend:

NA - Not Applicable w/w - weight/weight

ND - Not Determined w/v - weight/volume

NV - Not Available v/v - volume/volume

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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World Headquarters
Hach Company
P.O.Box 389
Loveland, CO USA 80539
(970) 669-3050

MSDS No: M00166

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name: ECR Reagent
Catalog Number: 2603849

HACH LANGE GmbH
Willstätterstrasse 11
40549 Düsseldorf, Germany
+49-(0)211-52880

Emergency Telephone Numbers:
(Poison Information Center Main)
(+49 (0) 6131 19240) 24 HR

SDS Number: M00166
Chemical Name: Not applicable
Chemical Formula: Not applicable
Chemical Family: Not applicable
Use of the substance/preparation: Indicator for aluminum
CAS No.: Not applicable
Hazard: Causes irritation.
Date of MSDS Preparation:
Day: 12
Month: 01
Year: 2006

Additional Emergency Response Numbers: Austria: +49 (0)6131 19240, Belgium: +32-(0)70-245245, France: +33 (0)1-40370404, Italy: +39-0266101029, Netherlands: +31 -(0)30-2748888, Switzerland: +41-(0)1-2515151

2. COMPOSITION / INFORMATION ON INGREDIENTS

2-Furoic acid

EEC Number: 2018030
CAS No.: 88142
Percent Range: 1,0 - 5,0
Percent Range Units: weight / weight
Ingredient EEC Symbol: Not applicable
Ingredient R phrase(s) (R phrase details given in Heading 16): Not applicable
TLV: Not established
PEL: Not established
EU Occupational Exposure Limits: 3 mg/m³, Inhalable dust

Mercaptosuccinic Acid

EEC Number: 2007364
CAS No.: 70495
Percent Range: 1,0 - 10,0
Percent Range Units: weight / weight
Ingredient EEC Symbol: Not applicable
Ingredient R phrase(s) (R phrase details given in Heading 16): Not applicable
TLV: Not established
PEL: Not established
EU Occupational Exposure Limits: 3 mg/m³, Inhalable dust

Eriochrome Cyanine R

EEC Number: 2199724
CAS No.: 2588241
Percent Range: < 0,01

Percent Range Units: weight / weight
Ingredient EEC Symbol: Not applicable
Ingredient R phrase(s) (R phrase details given in Heading 16): Not applicable
TLV: Not established
PEL: Not established
EU Occupational Exposure Limits: 3 mg/m³ Inhalable dust

Ammonium Sulfate

EEC Number: 2319841
CAS No.: 7783202
Percent Range: 85,0 - 95,0
Percent Range Units: weight / weight
Ingredient EEC Symbol: Not applicable
Ingredient R phrase(s) (R phrase details given in Heading 16): Not applicable
TLV: Not established
PEL: Not established
EU Occupational Exposure Limits: 3 mg/m³, Inhalable dust. For ammonia, 20 ppm (14 mg/m³); STEL: 50 ppm (36 mg/m³) Recommended

3. HAZARDS IDENTIFICATION

Emergency Overview:

Appearance: Orange powder
Odor: None
EU Symbols: Not applicable
R PHRASES: Not applicable

Protective Equipment:

Potential Health Effects:

Eye Contact (EC): May cause irritation
Skin Contact (EC): May cause irritation May cause allergic reaction
Skin Absorption (EC): None Reported
Target Organs (SA E): None Reported
Ingestion (EC): May cause: abdominal pain nausea vomiting diarrhea Very large doses may cause: increased urinary output systemic ammonia poisoning
Target Organs (Ing E): None Reported
Inhalation: May cause: respiratory tract irritation sore throat coughing headache
Target Organs (Inh E): None Reported
Medical Conditions Aggravated: Pre-existing: Eye conditions Skin conditions Respiratory conditions
Chronic Effects: None reported
Cancer / Reproductive Toxicity Information:
IARC Listed: No

Additional Cancer / Reproductive Toxicity Information: None reported
Toxicologically Synergistic Products: None reported

4. FIRST AID MEASURES

Eye Contact: Immediately flush eyes with water for 15 minutes. Call physician.
Skin Contact (First Aid): Wash skin with soap and plenty of water for 15 minutes. Call physician immediately.
Ingestion (First Aid): Give large quantities of water. Call physician immediately.
Inhalation: Remove to fresh air.

5. FIRE FIGHTING MEASURES

Flammable Properties: During a fire, corrosive and toxic gases may be generated by thermal decomposition.
Hazardous Combustion Products: Toxic fumes of: ammonia nitrogen oxides. sulfur oxides.
Fire / Explosion Hazards: May react violently with: alkali metals strong oxidizers
Static Discharge: None reported.
Mechanical Impact: None reported

Extinguishing Media: Use media appropriate to surrounding fire conditions

Extinguishing Media NOT To Be Used: Not applicable

Fire Fighting Instruction: As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Spill Response Notice:

Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

Containment Technique: Stop spilled material from being released to the environment.

Clean-up Technique: Scoop up spilled material into a large beaker and dissolve with water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution.

Evacuation Procedure: Evacuate as needed to perform spill clean-up. If conditions warrant, increase the size of the evacuation.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes skin Do not breathe dust. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

Storage: Keep away from: oxidizers

Special Packaging Instructions: Not applicable

Use of the substance/preparation: Indicator for aluminum

8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

Engineering Controls: Have an eyewash station nearby. Maintain general industrial hygiene practices when using this product.

Personal Protective Equipment:

Eye Protection: safety glasses with top and side shields

Skin / Hand Protection: lab coat disposable latex gloves

Inhalation Protection: adequate ventilation

Precautionary Measures: Avoid contact with: eyes skin Do not breathe: dust Wash thoroughly after handling. Keep away from: oxidizers

TLV: Not established

PEL: Not established

EU Occupational Exposure Limits: 3 mg/m³, Inhalable dust

9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: Orange powder

Physical State: Solid

Odor: None

pH: 5% solution = 2,78

Vapor Pressure: Not applicable

Vapor Density (air = 1): Not applicable

Boiling Point: Not applicable

Melting Point: 133°C; 271°F

Flash Point: Not applicable

Method: Not applicable

Autoignition Temperature: Not applicable

Flammability Limits:

Lower Explosion Limits: Not applicable

Upper Explosion Limits: Not applicable

Specific Gravity (water = 1): 1,734

Evaporation Rate (water = 1): Not applicable

Volatile Organic Compounds Content: Not available

Partition Coefficient (n-octanol / water): Not applicable

Solubility:

Water: Soluble
Acid: Soluble
Other: Not determined
Metal Corrosivity:
Steel: 0,064 in/year
Aluminum: 0,022 in/year

10. STABILITY / REACTIVITY

Chemical Stability: Stable when stored under proper conditions.
Conditions to Avoid: Heating to decomposition.
Reactivity / Incompatibility: Incompatible with: oxidizers chlorates metal nitrites
Hazardous Decomposition: Heating to decomposition releases toxic and/or corrosive fumes of: nitrogen oxides ammonia sulfur oxides
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Product Toxicological Data:

LD50: None reported
LC50: None reported
Dermal Toxicity Data: None reported
Skin and Eye Irritation Data: None reported
Mutation Data: None reported
Reproductive Effects Data: None reported

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Ingredient Toxicological Data: Ammonium Sulfate - Oral rat LD50 = 2840 mg/kg; Mercaptosuccinic acid - Oral rat LD50 = 800 mg/kg; 2-Furoic acid - Oral mouse LD50 = 1000 mg/kg

IARC Listed: No

12. ECOLOGICAL INFORMATION

Product Ecological Information: --
No ecological data available for this product.
Ingredient Ecological Information: --
No ecological data available for the ingredients of this product.

13. DISPOSAL CONSIDERATIONS

NOTICE (Disposal): These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

14. TRANSPORT INFORMATION

I.C.A.O.:

I.C.A.O. Proper Shipping Name: Not Currently Regulated

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ICAO Hazard Class: NA
ICAO Subsidiary Risk: NA
ICAO UN/ID Number: NA
ICAO Packing Group: NA

I.M.O.:

I.M.O. Proper Shipping Name: Not Currently Regulated

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I.M.O. Hazard Class: NA
I.M.O. Subsidiary Risk: NA

I.M.O. UN Number: NA
I.M.O. Packing Group: NA
A.D.R.:
A.D.R. Proper Shipping Name: Not Currently Regulated

A.D.R Hazard Class: NA
A.D.R. Subsidiary Risk: NA
A.D.R. UN-Number:: NA
A.D.R. Packing Group: NA

Additional Information: This product may be shipped as part of a chemical kit composed of various compatible dangerous goods for analytical or testing purposes. This kit would have the following classification: Proper Shipping Name: Chemical Kit Hazard Class: 9 UN Number 3316

15. REGULATORY INFORMATION

National Inventories:

EEC Inventory Status: All ingredients used to make this product are listed on EINECS / ELINCS.

EEC Number: Not applicable

EEC LABEL COPY:

EU Symbols: Not applicable

R PHRASES: Not applicable

S PHRASES: Not applicable

16. OTHER INFORMATION

References: In-house information. Technical Judgment. Vendor Information. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984. The Merck Index, 11th Ed. Rahway, New Jersey: Merck and Co., Inc., 1989. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor).

R PHRASES: Not applicable

Use of the substance/preparation: Indicator for aluminum

Revision Summary: Updates in Section(s) 14,

Legend:

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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World Headquarters
Hach Company
P.O.Box 389
Loveland, CO USA 80539
(970) 669-3050

MSDS No: M00146

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name: Hexamethylenetetramine Buffer
Catalog Number: 2603999

HACH LANGE GmbH
Willstätterstrasse 11
40549 Düsseldorf, Germany
+49-(0)211-52880

Emergency Telephone Numbers:
(Poison Information Center Main)
(+49 (0) 6131 19240) 24 HR

SDS Number: M00146

Chemical Name: 1,3,5,7-Tetraazatricyclo[3.3.1.1^{3,7}]decane

Chemical Formula: C₆H₁₂N₄

Chemical Family: Aromatic Amines

Use of the substance/preparation: Laboratory Reagent

CAS No.: 100-97-0

Hazard: May cause irritation. Flammable solid. May cause allergic reaction.

Date of MSDS Preparation:

Day: 03

Month: August

Year: 2006

Additional Emergency Response Numbers: Austria: +49 (0)6131 19240, Belgium: +32-(0)70-245245,
France: +33-(0)1-40370404, Italy: +39-02-66101029, Netherlands: +31-(0)30-2748888, Switzerland: +41-
(0)1-2515151

2. COMPOSITION / INFORMATION ON INGREDIENTS

Hexamethylenetetramine

EEC Number: 2029058

CAS No.: 100-97-0

Percent Range: 100,0

Percent Range Units: weight / weight

Ingredient EEC Symbol: Xn - HARMFUL

Ingredient R phrase(s) (R phrase details given in Heading 16): R 11 R 42/43

TLV: Not established

PEL: Not established

EU Occupational Exposure Limits: 3 mg/m³ Inhalable dust

3. HAZARDS IDENTIFICATION

Emergency Overview:

Appearance: White powder

Odor: None

EU Symbols: F - HIGHLY FLAMMABLE Xn - HARMFUL

R PHRASES: R 11: Highly flammable. R 42/43: May cause sensitization by inhalation and skin contact.

Protective Equipment:

Potential Health Effects:

Eye Contact (EC): May cause irritation

Skin Contact (EC): May cause irritation May cause allergic reaction

Skin Absorption (EC): None Reported

Target Organs (SA E): None Reported

Ingestion (EC): May cause: abdominal pain gastrointestinal tract irritation kidney damage

Target Organs (Ing E): Kidneys

Inhalation: May cause: respiratory tract irritation allergic respiratory reaction

Target Organs (Inh E): None Reported

Medical Conditions Aggravated: Pre-existing: Eye conditions Skin conditions Respiratory conditions Allergies or sensitivity to hexamethylenetetramine.

Chronic Effects: None reported

Cancer / Reproductive Toxicity Information:

IARC Listed: No

Additional Cancer / Reproductive Toxicity Information: Contains: an experimental mutagen.

Toxicologically Synergistic Products: None reported

4. FIRST AID MEASURES

Eye Contact: Immediately flush eyes with water for 15 minutes. Call physician.

Skin Contact (First Aid): Wash skin with soap and plenty of water. Remove contaminated clothing. Call physician if irritation develops.

Ingestion (First Aid): Give large quantities of water. Call physician immediately.

Inhalation: Remove to fresh air. Give artificial respiration if necessary. Call physician.

5. FIRE FIGHTING MEASURES

Flammable Properties: Exposure to heat may promote violent decomposition. Can burn in fire, releasing toxic vapors.

Hazardous Combustion Products: May emit toxic and corrosive fumes.

Fire / Explosion Hazards: Do not expose to sparks or other ignition sources. Do not expose to flames. May react violently with: strong acids strong oxidizers

Static Discharge: None reported.

Mechanical Impact: None reported

Extinguishing Media: Water spray to cool containers Dry chemical. Water. Carbon dioxide Alcohol foam.

Extinguishing Media NOT To Be Used: Not applicable Not applicable Not applicable Not applicable Not applicable

Fire Fighting Instruction: Containers can build up pressure if exposed to heat. As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear. Evacuate area and fight fire from a safe distance.

6. ACCIDENTAL RELEASE MEASURES

Spill Response Notice:

Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

Containment Technique: Remove all combustible material from spill area. Remove all ignition and spark-creating sources from the spill area. May be ignited by: heat, sparks, or flames. Cover spilled solid material with sand or other inert material. Stop spilled material from being released to the environment.

Clean-up Technique: Eliminate all sources of ignition. Use only non-sparking tools. Avoid contact with spilled material. Sweep up material. Incinerate material at an E.P.A. approved hazardous waste facility.

Decontaminate the area of the spill with a soap solution.

Evacuation Procedure: Evacuate local area (15 foot radius or as directed by your facility's emergency response plan) when: a pound or more of loose powder is spilled. If conditions warrant, increase the size of the evacuation.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes skin clothing Do not breathe dust. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

Storage: Keep away from: acids oxidizers

Special Packaging Instructions: Not applicable

Use of the substance/preparation: Laboratory Reagent

8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

Engineering Controls: Have an eyewash station nearby. Use general ventilation to minimize exposure to mist, vapor or dust. Maintain general industrial hygiene practices when using this product.

Personal Protective Equipment:

Eye Protection: safety glasses with top and side shields

Skin / Hand Protection: disposable latex gloves lab coat

Inhalation Protection: adequate ventilation

Precautionary Measures: Avoid contact with: eyes skin clothing Do not breathe: dust Wash thoroughly after handling. Keep away from: acids/acid fumes oxidizers

TLV: Not established

PEL: Not established

EU Occupational Exposure Limits: 3 mg/m³ Inhalable dust

9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: White powder

Physical State: Solid

Odor: None

pH: 0,2 M solution = 8,4

Vapor Pressure: Not applicable

Vapor Density (air = 1): Not applicable

Boiling Point: Sublimes @ 280°C (536°F)

Melting Point: Sublimes @ 280°C (536°F)

Flash Point: 236°C (482°F)

Method: Open cup

Autoignition Temperature: 410°C (770°F)

Flammability Limits:

Lower Explosion Limits: Not determined

Upper Explosion Limits: Not determined

Specific Gravity (water = 1): 1,33

Evaporation Rate (water = 1): Not applicable

Volatile Organic Compounds Content: Not available

Partition Coefficient (n-octanol / water): Not available

Solubility:

Water: 1 g/ 1,5 ml H₂O

Acid: Decomposes

Other: 1 g/ 12,5 ml alcohol; 1 g/ 320 ml ether; 1 g/ 10 ml chloroform

Metal Corrosivity:

Steel: Not determined

Aluminum: Not determined

10. STABILITY / REACTIVITY

Chemical Stability: Stable when stored under proper conditions.

Conditions to Avoid: Heating to decomposition.

Reactivity / Incompatibility: May explode in contact with: acids acetic acid nitric acid ammonia salts

Hazardous Decomposition: Heating to decomposition releases toxic and/or corrosive fumes of: nitrogen oxides formaldehyde

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Product Toxicological Data:

LD50: Oral mouse LDLo = 512 mg/kg

LC50: None reported

Dermal Toxicity Data: None reported

Skin and Eye Irritation Data: None reported

Mutation Data: Cytogenic analysis in human Hela cells @ 1 mmol/l; Oncogenic Transformation - hamster kidney - 10 mg/L

Reproductive Effects Data: None reported

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Ingredient Toxicological Data: --

Not applicable

IARC Listed: No

12. ECOLOGICAL INFORMATION

Product Ecological Information: Water Pollution Factors: BOD₅: 0,015; 0,026 std. dil. sew.

Ingredient Ecological Information: --

Not applicable

13. DISPOSAL CONSIDERATIONS

NOTICE (Disposal): These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

14. TRANSPORT INFORMATION

I.C.A.O.:

I.C.A.O. Proper Shipping Name: Hexamethylenetetramine

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ICAO Hazard Class: 4,1

ICAO Subsidiary Risk: NA

ICAO UN/ID Number: UN1328

ICAO Packing Group: III

I.M.O.:

I.M.O. Proper Shipping Name: Hexamethylenetetramine

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I.M.O. Hazard Class: 4,1

I.M.O. Subsidiary Risk: NA

I.M.O. UN Number: UN1328
I.M.O. Packing Group: III
A.D.R.:
A.D.R. Proper Shipping Name: Hexamethylenetetramine
--
A.D.R Hazard Class: 4,1
A.D.R. Subsidiary Risk: NA
A.D.R. UN-Number:: 1328
A.D.R. Packing Group: III

Additional Information: This product may be shipped as part of a chemical kit composed of various compatible dangerous goods for analytical or testing purposes. This kit would have the following classification: Proper Shipping Name: Chemical Kit Hazard Class: 9 UN Number 3316

15. REGULATORY INFORMATION

National Inventories:

EEC Inventory Status: EINECS Listed: Yes

EEC Number: 2029058

EEC LABEL COPY:

EU Symbols: F - HIGHLY FLAMMABLE Xn - HARMFUL

R PHRASES: R 11: Highly flammable. R 42/43: May cause sensitization by inhalation and skin contact.

S PHRASES: S 16: Keep away from sources of ignition - No smoking. S 22: Do not breathe dust. S 24:

Avoid contact with skin. S 37: Wear suitable gloves.

16. OTHER INFORMATION

References: Vendor Information. Technical Judgment. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor).

R PHRASES: R 11: Highly flammable. R 42/43: May cause sensitization by inhalation and skin contact.

Use of the substance/preparation: Laboratory Reagent

Revision Summary: Updates in Section(s) 6,

Legend:

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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