

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

MSDS No: M00114

SAFETY DATA SHEET

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

Product Name: MBTH Reagent
Catalog Number: 2257169

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: M00114

Chemical Name: Not applicable

Chemical Formula: Not applicable

Chemical Family: Not applicable

Use of the substance/preparation: Laboratory Reagent

CAS No.: Not applicable

Hazard: Causes moderate eye 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 -026101029, Netherlands: +31 -(0)30 -2748888, Switzerland: +41 -(0)1 -2515151

2. COMPOSITION / INFORMATION ON INGREDIENTS

3-Methyl -2-benzothiazolinone Hydrazone Hydrochloride

EEC Number: 2243935

CAS No.: 433981

Percent Range: 10,0 - 20,0

Percent Range Units: weight / weight

Ingredient EEC Symbol: X_n - HARMFUL

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

TLV: Not established

PEL: Not established

EU Occupational Exposure Limits: 3 mg/m³ Inhalable dust

Sodium Chloride

EEC Number: 2315983

CAS No.: 7647145

Percent Range: 80,0 - 90,0

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

3. HAZARDS IDENTIFICATION

Emergency Overview:

Appearance: White to light gray crystals
Odor: None
EU Symbols: Xn - HARMFUL
R PHRASES: R 22: Harmful if swallowed.

Protective Equipment:

Potential Health Effects:

Eye Contact (EC): Causes moderate irritation

Skin Contact (EC): Causes mild irritation

Skin Absorption (EC): None Reported

Target Organs (SA E): None Reported

Ingestion (EC): May cause: vomiting dehydration diarrhea blood pressure problems muscular twitching rigidity collapse death

Target Organs (Ing E): None Reported

Inhalation: No data reported.

Target Organs (Inh E): None Reported

Medical Conditions Aggravated: Pre-existing: Eye conditions

Chronic Effects: None reported

Cancer / Reproductive Toxicity Information:

This product does NOT contain any IARC listed chemicals.

Additional Cancer / Reproductive Toxicity Information: In a laboratory test, mice given a 2% NaCl solution in place of drinking water during pregnancy produced hypertensive adult offspring. In a laboratory test, single subcutaneous injection of NaCl into pregnant mice @ 2500 mg/Kg caused fetal deaths and malformations.

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 plenty of water. Call physician if irritation develops.

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

Inhalation: Remove to fresh air.

5. FIRE FIGHTING MEASURES

Flammable Properties: Can burn in fire, releasing toxic vapors.

Hazardous Combustion Products: Toxic fumes of: carbon monoxide, carbon dioxide, sulfur oxides, nitrogen oxides, chlorides

Fire / Explosion Hazards: None reported

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: Sweep up material. 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 clothing Do not breathe dust. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

Storage: Keep container tightly closed when not in use.

Special Packaging Instructions: Not applicable

Use of the substance/preparation: Laboratory Reagent

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 clothing Do not breathe: dust Wash thoroughly after handling.

Protect from: heat

TLV: Not established

PEL: Not established

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

9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: White to light gray crystals

Physical State: Solid

Odor: None

pH: 5% solution = 2,9

Vapor Pressure: Not applicable

Vapor Density (air = 1): Not applicable

Boiling Point: Not applicable

Melting Point: 250° C (482° F)

Flash Point: Not applicable

Method: Not applicable

Autoignition Temperature: Not determined

Flammability Limits:

Lower Explosion Limits: Not applicable

Upper Explosion Limits: Not applicable

Specific Gravity (water = 1): 1,84

Evaporation Rate (water = 1): Not applicable

Volatile Organic Compounds Content: Not determined

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

Solubility:

Water: Soluble

Acid: Not determined

Other: Slightly soluble in glycol and alcohol

Metal Corrosivity:

Steel: Not determined

Aluminum: Not determined

10. STABILITY / REACTIVITY

Chemical Stability: Stable when stored under proper conditions.

Conditions to Avoid: Excess moisture Extreme temperatures

Reactivity / Incompatibility: Incompatible with: lithium bromine trifluoride oxidizers

Hazardous Decomposition: Heating to decomposition releases: carbon dioxide carbon monoxide sulfur oxides nitrogen oxides chlorides

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: Sodium Chloride: Eye rabbit 100 mg/24 H - MODERATE, Eye rabbit 10 mg - MODERATE, Eye rabbit 100 mg - MILD, Skin rabbit 50 mg/24 H- MILD, Skin rabbit 500 mg/24 H MILD

Mutation Data: None reported

Reproductive Effects Data: See section 3

--

Ingredient Toxicological Data: Sodium Chloride: Oral rat LD50 = 3000 mg/kg

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

--

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

--

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: Xn - HARMFUL
R PHRASES: R 22: Harmful if swallowed.
S PHRASES: S 37: Wear suitable gloves.

16. OTHER INFORMATION

References: TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Technical Judgment. Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332 -2983. In-house information.

R PHRASES: R 22: Harmful if swallowed.

Use of the substance/preparation: Laboratory Reagent

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.

HACH COMPANY ©2006

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

MSDS No: M00661

SAFETY DATA SHEET

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

Product Name: Developing Solution for Low Range Formaldehyde
Catalog Number: 2257249

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: M00661

Chemical Name: Not applicable

Chemical Formula: Not applicable

Chemical Family: Not applicable

Use of the substance/preparation: Determination of volatile acids

CAS No.: Not applicable

Hazard: Causes eye burns. Carcinogen.

Date of M SDS 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 -026101029, Netherlands: +31 -(0)30 -2748888, Switzerland: +41 -(0)1 -2515151

2. COMPOSITION / INFORMATION ON INGREDIENTS

Ferric Chloride

EEC Number: 2317294

CAS No.: 10025 -77-1

Percent Range: < 5,0

Percent Range Units: weight / volume

Ingredient EEC Symbol: Not applicable

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

TLV: 1 mg/m³ (Fe)

PEL: 1 mg/m³ (Fe)

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

Demineralized Water

EEC Number: 2317912

CAS No.: 773218

Percent Range: >95,0

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

Sulfuric Acid

EEC Number: 2316395

CAS No.: 76649

Percent Range: < 5,0

Percent Range Units: volume / volume
Ingredient EEC Symbol: Not applicable
Ingredient R phrase(s) (R phrase details given in Heading 16): Not applicable
TLV: 1 mg/m³ (TWA); 3 mg/m³ (STEL)
PEL: 1 mg/m³
EU Occupational Exposure Limits: 0,1 mg/m³

3. HAZARDS IDENTIFICATION

Emergency Overview:

Appearance: Clear, yellow liquid
Odor: Not determined
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
Skin Absorption (EC): None Reported
Target Organs (SA E): None Reported
Ingestion (EC): Causes: burns of the mouth and esophagus May cause: nausea vomiting rapid pulse and respirations
Iron poisoning has resulted in liver damage, coma and death. Iron poisoning is indicated by pink urine discoloration.
Target Organs (Ing E): Liver
Inhalation: May cause: respiratory tract irritation
Target Organs (Inh E): None Reported
Medical Conditions Aggravated: Pre-existing: Eye conditions Respiratory conditions
Chronic Effects: Chronic overexposure may cause chronic irritation or inflammation of the lungs erosion of the teeth
Cancer / Reproductive Toxicity Information:
IARC Group 1: Recognized Carcinogen
Sulfuric Acid - The IARC evaluation was based on exposure to the mist or vapor of concentrated sulfuric acid generated during chemical processes.
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 plenty of water.
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, irritating and highly toxic gases may be generated by thermal decomposition.
Hazardous Combustion Products: Not applicable
Fire / Explosion Hazards: This product will not burn or explode.
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 Techni que: 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 clothing Do not breathe mist or vapors. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

Storage: Keep container tightly closed when not in use. Store away from: alkalies alkali metals

Special Packaging Instructions: Not applicable

Use of the substance/preparation: Determination of volatile acids

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: disposable latex gloves lab coat

Inhalation Protection: adequate ventilation

Precautionary Measures: Avoid contact with: eyes skin clothing Do not breathe: mist/vapor Wash h thoroughly after handling. Keep away from: alkali metals alkalies metals

TLV: Not established

PEL: Not established

EU Occupational Exposure Limits: Not established

9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: Clear, yellow liquid

Physical State: Liquid

Odor: Not determined

pH: 0,5

Vapor Pressure: Not determined

Vapor Density (air = 1): Not determined

Boiling Point: 100°C

Melting Point: Not determined

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): 1,039

Evaporation Rate (water = 1): Not determined

Volatile Organic Compounds Content: Not applicable

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

Solubility:

Water: Soluble

Acid: Soluble

Other: Not determined

Metal Corrosivity:

Steel: 1,61 in/yr

Aluminum: 10,15 in/yr

10. STABILITY / REACTIVITY

Chemical Stability: Stable when stored under proper conditions.

Conditions to Avoid: Extreme temperatures Evaporation

Reactivity / Incompatibility: Incompatible with: strong bases alkali metals

Hazardous Decomposition: Heating to decomposition releases toxic and/or corrosive fumes of: hydrogen chloride 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: Ferric Chloride: DNA inhibition - human lymphocytes - 4800 µmol/L

Reproductive Effects Data: None reported

--

Ingredient Toxicological Data: Sulfuric Acid: Oral rat LD₅₀ = 2140 mg/kg; Ferric Chloride: Oral rat LD₅₀ = 1872 mg/kg

IARC Group 1: Recognized Carcinogen

Sulfuric Acid - The IARC evaluation was based on exposure to the mist or vapor of concentrated sulfuric acid generated during chemical processes.

12. ECOLOGICAL INFORMATION

Product Ecological Information: --

No ecological data available for this product.

Ingredient Ecological Information: Sulfuric Acid: The 48-hour TLm in flounder is 100-300 ppm

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: Corrosive Liquid, Acidic, Inorganic, N.O.S.

(Sulphuric Acid/Ferric Chloride Solution)

ICAO Hazard Class: 8

ICAO Subsidiary Risk: NA

ICAO UN/ID Number: UN3264

ICAO Packing Group: III

I.M.O.:

I.M.O. Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S.

(Sulphuric Acid/Ferric Chloride Solution)

I.M.O. Hazard Class: 8

I.M.O. Subsidiary Risk: NA

I.M.O. UN Number: UN3264

I.M.O. Packing Group: III

A.D.R.:

A.D.R. Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S.

(Sulphuric Acid/Ferric Chloride Solution)

A.D.R Hazard Class: 8

A.D.R. Subsidiary Risk: NA

A.D.R. UN -Number:: 3264
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: 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: 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. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991. IARC Monographs on the Evaluation of the Carcinogenic Risks to Humans. World Health Organization (Volumes 1 -42) Supplement 7. France: 1987. In-house information. List of Dangerous Substances Classified in Annex I of the EEC Directive (67/548)- Classification, Packaging and Labeling of Dangerous Substances, Amended July 1992.

R PHRASES: Not applicable

Use of the substance/preparation: Determination of volatile acids

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.

HACH COMPANY ©2006