

The following list contains the Material Safety Data Sheets you requested. Please scroll down to view the requested MSDS(s).

<u>Product</u>	<u>MSDS</u>	<u>Distributor</u>	<u>Format</u>	<u>Language</u>	<u>Quantity</u>
2790800	2756699	Hach Company	ROWGHS	English	1
2790800	2754142	Hach Company	ROWGHS	English	1
2790800	2754048	Hach Company	ROWGHS	English	1
2790800	2753929	Hach Company	ROWGHS	English	1

Total Enclosures: 4

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

MSDS No: M01690

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: THM PLUS Reagent 4 Indicator

Catalog Number: 2756699

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

Emergency Telephone Numbers:
(Medical and Transportation)
(303) 623-5716 24 Hour Service
(515)232-2533 8am - 4pm CST

MSDS Number: M01690

Chemical Name: Not applicable

CAS Number: Not applicable

Additional CAS No. (for hydrated forms): Not applicable

Chemical Formula: Not applicable

Chemical Family: Not applicable

Intended Use: Determination of halogenated hydrocarbons

2. HAZARDS IDENTIFICATION

This mixture is not classified as hazardous per GHS (UN publication ST/SG/AC.10/36/Add.3)

GHS Classification:

Hazard categories: Not applicable

GHS Label Elements:

Not applicable

Hazard statements: Not applicable

Precautionary statements: Not applicable

HMIS:

Health: 2

Flammability: 1

Reactivity: 0

Protective Equipment: X - See protective equipment, Section 8.

NFPA:

Health: 2

Flammability: 1

Reactivity: 0

Symbol: Not applicable

WHMIS Hazard Classification: Class D, Division 2, Subdivision B - Toxic material (other toxic effects)

WHMIS Symbols: Other Toxic Effects

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Components according to GHS: No

G-Amido Acid

CAS Number: 842-15-9

Chemical Formula: C₁₀H₈NO₆S₂K

GHS Classification:

Percent Range: 90.0 - 100.0

Percent Range Units: weight / weight

PEL: Not established
TLV: Not established

WHMIS Symbols: Other Toxic Effects

Maltodextrin

CAS Number: 9050-36-6
Chemical Formula: C₆H₁₂O₆
GHS Classification: Not applicable
Percent Range: 1.0 - 10.0
Percent Range Units: weight / weight
PEL: Not established
TLV: Not established

WHMIS Symbols: Not applicable

4. FIRST AID MEASURES

General Information: In the event of exposure, show this Material Safety Data Sheet and label (where possible) to a doctor.

Advice to doctor: Treat symptomatically.

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

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

Inhalation: Remove to fresh air.

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

5. FIRE FIGHTING MEASURES

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

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

Extinguishing Media: Use media appropriate to surrounding fire conditions

Extinguishing Media NOT To Be Used: Not applicable

Fire / Explosion Hazards: None reported

Hazardous Combustion Products: sulfur oxides. nitrogen oxides. carbon monoxide, carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES

Spill Response Notice:

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance.

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

Clean-up Technique: If permitted by regulation, Sweep up material. Dilute with a large excess of water. Adjust to a pH between 6 and 9. Use sulfuric or citric acid to lower pH. Use soda ash or sodium bicarbonate to increase pH. Flush reacted material to the drain with a large excess of water. Otherwise, Pick up spill for disposal and place in a closed container. Dispose of in accordance with local, state and federal regulations or laws.

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

DOT Emergency Response Guide Number: Not applicable

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: Refrigerate when not in use.

Flammability Class: Not applicable

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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 Protection: disposable latex gloves

Inhalation Protection: adequate ventilation

Precautionary Measures: Avoid contact with: eyes skin clothing Do not breathe: dust Wash thoroughly after handling.

TLV: Not established

PEL: Not established

For Occupational Exposure Limits (OEL) for ingredients, see section 3 - Composition/Information on Ingredients.:

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Off-white powder

Physical State: Solid

Molecular Weight: Not applicable

Odor: Not determined

Odor Threshold: Not available

pH: Not determined

Metal Corrosivity:

Corrosivity Classification: Not classified as corrosive to metals according to GHS criteria.

Steel: Not determined

Aluminum: Not determined

Specific Gravity/ Relative Density (water = 1; air =1): Not determined

Viscosity: Not applicable

Solubility:

Water: Soluble

Acid: Not determined

Other: Not determined

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

Coefficient of Water / Oil: Not applicable

Melting Point: Not determined

Decomposition Temperature: Not determined

Boiling Point: Not applicable

Vapor Pressure: Not applicable

Vapor Density (air = 1): Not applicable

Evaporation Rate (water = 1): Not applicable

Volatile Organic Compounds Content: Not determined

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

Flash Point: Not determined

Method: Not applicable

Flammability Limits:

Lower Explosion Limits: Not applicable

Upper Explosion Limits: Not applicable

Autoignition Temperature: Not determined

Explosive Properties:

Not classified according to GHS criteria.

Oxidizing Properties:

Not classified according to GHS criteria.

Reactivity Properties:

Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.

Gas under Pressure:

Not classified according to GHS criteria.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable when stored under proper conditions.

Mechanical Impact: None reported

Static Discharge: None reported.

Reactivity / Incompatibility: None reported

Hazardous Decomposition: Heating to decomposition releases toxic and/or corrosive fumes of: nitrogen oxides sulfur oxides carbon dioxide carbon monoxide

Conditions to Avoid: Heating to decomposition.

11. TOXICOLOGICAL INFORMATION

Toxicokinetics, Metabolism and Distribution: No health effects are anticipated in normal use.

Toxicologically Synergistic Products: None reported

Acute Toxicity: Based on classification principles, the classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure (STOT-SE): Based on classification principles, the classification criteria are not met.

Specific Target Organ Toxicity - Repeat Exposure (STOT-RE): Based on classification principles, the classification criteria are not met.

Skin Corrosion/Irritation: Based on classification principles, the classification criteria are not met.

Eye Damage: Based on classification principles, the classification criteria are not met.

Sensitization: Based on classification principles, the classification criteria are not met.

CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction): No germ cell mutagenicity, carcinogenicity or reproductive toxicity data found.

IARC Listed: No

NTP Listed: No

O.S.H.A. Listed: No

Symptoms/Effects:

Ingestion: May cause: nausea

Inhalation: Causes: respiratory tract irritation

Skin Absorption: None Reported

Chronic Effects: None reported

Medical Conditions Aggravated: None reported

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

EPA Waste ID Number: Not applicable

Special Instructions (Disposal): Dilute to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Flush system with plenty of water.

Empty Containers: Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

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

D.O.T.:

D.O.T. Proper Shipping Name: Not Currently Regulated

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Hazard Class: NA

Subsidiary Risk: NA

ID Number: NA

Packing Group: NA

T.D.G.:

Proper Shipping Name: Not Currently Regulated

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Hazard Class: NA

Subsidiary Risk: NA
UN Number/PIN: NA
Packing Group: NA

I.C.A.O.:

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

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Hazard Class: NA
Subsidiary Risk: NA
ID Number: NA
Packing Group: NA

I.M.O.:

Proper Shipping Name: Not Currently Regulated

--

Hazard Class: NA
Subsidiary Risk: NA
ID Number: NA
Packing Group: NA

Additional Information: There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

U.S. Federal Regulations:

O.S.H.A.: This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

E.P.A.:

S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370): Immediate (Acute) Health Hazard

S.A.R.A. Title III Section 313 (40 CFR 372): This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

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302 (EHS) TPQ (40 CFR 355): Not applicable
304 CERCLA RQ (40 CFR 302.4): Not applicable
304 EHS RQ (40 CFR 355): Not applicable
Clean Water Act (40 CFR 116.4): Not applicable
RCRA: Contains no RCRA regulated substances.

State Regulations:

California Prop. 65: No Prop. 65 listed chemicals are present in this product.

Identification of Prop. 65 Ingredient(s): None

California Perchlorate Rule CCR Title 22 Chap 33: Not applicable

Trade Secret Registry: Not applicable

National Inventories:

U.S. Inventory Status: All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).

CAS Number: Not applicable

Canadian Inventory Status: All ingredients of this product are DSL Listed.

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

Australian Inventory (AICS) Status: Annual Report Required. Some ingredients are not listed.

New Zealand Inventory (NZIoC) Status: Not Listed - Exempt.

Korean Inventory (KECI) Status: Some ingredients are not listed or exempt.

Japan (ENCs) Inventory Status: Some ingredients are not listed or exempt.

China (PRC) Inventory (MEP) Status: Some ingredients are not listed or exempt.

16. OTHER INFORMATION

References: Vendor Information. Technical Judgment. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992.

Complete Text of H phrases referred to in Section 3: Not applicable

Revision Summary: . Substantial revision to comply with EU Reg 1272/2008, Reg 1907/2006 and UN GHS (ST/SG/AC.10/36/Add.3).

Date of MSDS Preparation:

Day: 11

Month: February

Year: 2015

MSDS Prepared: MSDS prepared by Product Compliance Department extension 3350

CCOHS Evaluation Note: It is offered under exemption from WHMIS labeling as specified in the Controlled Products Regulation (CPR) Section 17. It is offered under the interim policy that was established by Health Canada permitting use of GHS-formatted safety data sheets in Canada prior to revision of CPR to GHS. This product has been classified and labeled in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3). This SDS has been prepared in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3).

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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MSDS No: M01683

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: THM PLUS Reagent 3 Acid Solution
Catalog Number: 2754142

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

Emergency Telephone Numbers:
(Medical and Transportation)
(303) 623-5716 24 Hour Service
(515)232-2533 8am - 4pm CST

MSDS Number: M01683
Chemical Name: Not applicable
CAS Number: Not applicable
Additional CAS No. (for hydrated forms): Not applicable
Chemical Formula: Not applicable
Chemical Family: Inorganic Acid
Intended Use: Laboratory Reagent

2. HAZARDS IDENTIFICATION

GHS Classification:

Hazard categories: Corrosive to Metals: Met. Corr. 1 Acute Toxicity: Acute Tox. 4-Orl . Skin Corrosion/Irritation: Skin Corr. 1A .

GHS Label Elements:

DANGER



Hazard statements: May be corrosive to metals. Harmful if swallowed. . Causes severe skin burns and eye damage.

Precautionary statements: . Wear protective gloves / protective clothing / eye protection / face protection. Do not breathe dust/fume/gas/mist/vapours/spray. Do not eat, drink or smoke when using this product. Wear eye protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF INHALED: Remove victim/person to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage. Dispose of contents/container according to state, local, federal or national regulations.

HMIS:

Health: 4

Flammability: 0

Reactivity: 0

Protective Equipment: X - See protective equipment, Section 8.

NFPA:

Health: 3

Flammability: 0

Reactivity: 0

Symbol: Not applicable

WHMIS Hazard Classification: Class E - Corrosive material Class D, Division 1, Subdivision A - Very toxic materials (immediate effects)

WHMIS Symbols: Corrosive Acute Poison

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Components according to GHS:

Phosphoric Acid

CAS Number: 7664-38-2

Chemical Formula: H₃PO₄

GHS Classification: Met. Corr. 1, H290; Acute Tox. 4 -Orl, H302; Acute Tox. 5 -Derm, H313; Skin Corr. 1B, H314; Eye Dam. 1, H318

Percent Range: 60.0 - 70.0

Percent Range Units: weight / weight

PEL: 1 mg/m³

TLV: 1 mg/m³

WHMIS Symbols: Corrosive

Sulfuric Acid

CAS Number: 7664-93-9

Chemical Formula: H₂SO₄

GHS Classification: Met. Corr. 1 H290; Skin Corr. 1A, H314; Aquatic Acute 3, H402

Percent Range: 10.0 - 20.0

Percent Range Units: weight / weight

PEL: 1 mg/m³

TLV: 1 mg/m³

WHMIS Symbols: Acute Poison Corrosive

Hazardous Components according to GHS: No

Demineralized Water

CAS Number: 7732-18-5

Chemical Formula: H₂O

GHS Classification: Not a dangerous substance according to GHS.

Percent Range: 10.0 - 20.0

Percent Range Units: weight / weight

PEL: Not established

TLV: Not established

WHMIS Symbols: Not applicable

4. FIRST AID MEASURES

General Information: In the event of exposure, show this Material Safety Data Sheet and label (where possible) to a doctor.

Advice to doctor: Treat symptomatically.

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

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

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

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

5. FIRE FIGHTING MEASURES

Flammable Properties: Not Flammable, but reacts with most metals to form flammable hydrogen gas. During a fire, corrosive and toxic gases may be generated by thermal decomposition.

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

Extinguishing Media: Use media appropriate to surrounding fire conditions

Extinguishing Media NOT To Be Used: Not applicable

Fire / Explosion Hazards: Contact with metals gives off hydrogen gas which is flammable
Hazardous Combustion Products: This material will not burn.

6. ACCIDENTAL RELEASE MEASURES

Spill Response Notice:

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

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

Clean-up Technique: If permitted by regulation, Cover spilled material with a dry acid, such as citric or boric. Scoop up slurry into a large beaker. 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. Otherwise, Pick up spill for disposal and place in a closed container. Dispose of in accordance with local, state and federal regulations or laws.

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

DOT Emergency Response Guide Number: 154

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 away from: metals Protect from: heat

Flammability Class: Not applicable

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Maintain adequate ventilation to keep vapor level below TWA for chemicals in this product. Maintain general industrial hygiene practices when using this product.

Personal Protective Equipment:

Eye Protection: safety glasses with top and side shields

Skin Protection: disposable latex gloves In the EU, the selected gloves must satisfy the specifications of EU Directive 89/686/EEC and standard EN 374 derived from it. lab coat

Inhalation Protection: adequate ventilation

Precautionary Measures: Avoid contact with: eyes skin clothing Do not breathe: mist/vapor Wash thoroughly after handling. Use with adequate ventilation. Protect from: heat Keep away from: metals

TLV: Not established

PEL: Not established

For Occupational Exposure Limits (OEL) for ingredients, see section 3 - Composition/Information on Ingredients.:

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear, colorless liquid

Physical State: Liquid

Molecular Weight: Not applicable

Odor: Acidic

Odor Threshold: Not available

pH: <1

Metal Corrosivity:

Corrosivity Classification:

Steel: Not determined

Aluminum: Not determined

Specific Gravity/ Relative Density (water = 1; air =1): 1.72

Viscosity: Not determined

Solubility:

Water: Soluble

Acid: Soluble

Other: Not determined
Partition Coefficient (n-octanol / water): Not applicable
Coefficient of Water / Oil: Not applicable
Melting Point: Not determined
Decomposition Temperature: Not determined
Boiling Point: Not determined
Vapor Pressure: Not determined
Vapor Density (air = 1): Not determined
Evaporation Rate (water = 1): Not determined
Volatile Organic Compounds Content: Not applicable
Flammable Properties: Not Flammable, but reacts with most metals to form flammable hydrogen gas. During a fire, corrosive and toxic gases may be generated by thermal decomposition.
Flash Point: Not applicable
Method: Not applicable
Flammability Limits:
Lower Explosion Limits: Not applicable
Upper Explosion Limits: Not applicable
Autoignition Temperature: Not applicable
Explosive Properties:
Not classified according to GHS criteria.
Oxidizing Properties:
Not classified according to GHS criteria.
Reactivity Properties:
Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.
Gas under Pressure:
Not classified according to GHS criteria.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable when stored under proper conditions.
Mechanical Impact: None reported
Static Discharge: None reported.
Reactivity / Incompatibility: May react violently in contact with: strong bases sulfites Incompatible with: plastics
Hazardous Decomposition: Contact with metals may release flammable hydrogen gas. Heating to decomposition releases toxic and/or corrosive fumes of: phosphorus oxides sulfur oxides
Conditions to Avoid: Excess moisture Extreme temperatures Heating to decomposition.

11. TOXICOLOGICAL INFORMATION

Toxicokinetics, Metabolism and Distribution: No information available for mixture.
Toxicologically Synergistic Products: None reported
Acute Toxicity: Route Data Given Below Acute Toxicity Estimate (ATE) - Calculated from Ingredient Toxicity Data
LD50 Oral ATE = 1885 mg/kg
LD50 Dermal ATE = 4266 mg/kg
Specific Target Organ Toxicity - Single Exposure (STOT-SE): Based on classification principles, the classification criteria are not met.
Specific Target Organ Toxicity - Repeat Exposure (STOT-RE): Based on classification principles, the classification criteria are not met.
Skin Corrosion/Irritation: Corrosive to skin.
Eye Damage: Corrosive to eyes.
Sensitization: Based on classification principles, the classification criteria are not met.
CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction): No germ cell mutagenicity, carcinogenicity or reproductive toxicity data found.
An ingredient of this mixture is: 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.
NTP Listed Group 1: Recognized Carcinogen
Sulfuric Acid Mist or Vapor
This product does NOT contain any OSHA listed carcinogens.
Symptoms/Effects:

Ingestion: Causes: burns May cause: abdominal pain nausea vomiting collapse death circulatory disturbances rapid pulse and respirations

Inhalation: Causes: burns May cause: coughing difficult breathing chest pain mouth soreness

Skin Absorption: None Reported

Chronic Effects: Chronic overexposure may cause dermatitis chronic irritation or inflammation of the lungs erosion of the teeth cancer

Medical Conditions Aggravated: Persons with impaired liver, kidney or respiratory function may be more susceptible to the effects of Phosphoric Acid. Pre-existing: Eye conditions Skin conditions

12. ECOLOGICAL INFORMATION

Product Ecological Information: --

No ecological data available for this product. Mobility in soil: No data available

Ingredient Ecological Information: Sulfuric Acid: TLm flounder = 100-300 ppm/48H; Phosphoric Acid: TLm mosquito fish = 138 mg/l/24-96H in turbid water @ 22-24 °C

13. DISPOSAL CONSIDERATIONS

EPA Waste ID Number: D002

Special Instructions (Disposal): Dilute to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system.

Empty Containers: Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

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

D.O.T.:

D.O.T. Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S.
(Phosphoric acid/Sulfuric acid solution)

Hazard Class: 8

Subsidiary Risk: NA

ID Number: UN3264

Packing Group: II

T.D.G.:

Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S.
(Phosphoric acid/Sulfuric acid solution)

Hazard Class: 8

Subsidiary Risk: NA

UN Number/PIN: 3264

Packing Group: II

I.C.A.O.:

I.C.A.O. Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S.
(Phosphoric acid/Sulfuric acid solution)

Hazard Class: 8

Subsidiary Risk: NA

ID Number: UN3264

Packing Group: II

I.M.O.:

Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S.
(Phosphoric acid/Sulfuric acid solution)

Hazard Class: 8

Subsidiary Risk: NA

ID Number: UN3264

Packing Group: II

Additional Information: There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS

part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

U.S. Federal Regulations:

O.S.H.A.: This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

E.P.A.:

S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370): Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard

S.A.R.A. Title III Section 313 (40 CFR 372): This product contains a chemical(s) subject to the reporting requirements of Section 313 of Title III of SARA.

Phosphoric Acid

302 (EHS) TPQ (40 CFR 355): Sulfuric Acid 1000 lbs.

304 CERCLA RQ (40 CFR 302.4): Phosphoric acid 5000 lbs.

304 EHS RQ (40 CFR 355): Sulfuric Acid - RQ 1000 lbs.

Clean Water Act (40 CFR 116.4): Phosphoric acid - RQ 5000 lbs. Sulfuric acid - RQ 1000 lbs.

RCRA: Contains RCRA regulated substances. See Section 13, EPA Waste ID Number.

State Regulations:

California Prop. 65: No Prop. 65 listed chemicals are present in this product.

Identification of Prop. 65 Ingredient(s): None

California Perchlorate Rule CCR Title 22 Chap 33: Not applicable

Trade Secret Registry: Not applicable

National Inventories:

U.S. Inventory Status: All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).

CAS Number: Not applicable

Canadian Inventory Status: All ingredients of this product are DSL Listed.

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

Australian Inventory (AICS) Status: All ingredients are listed.

New Zealand Inventory (NZIoC) Status: All components either listed or exempt.

Korean Inventory (KECI) Status: All components of this product are either listed, listed as the anhydrous compound or exempt.

Japan (ENCS) Inventory Status: All components either listed or exempt.

China (PRC) Inventory (MEP) Status: All components either listed or exempt.

16. OTHER INFORMATION

References: 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. NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards. Cincinnati: Department of Health and Human Services, 1981. 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. Patty, Frank A. Industrial Hygiene and Toxicology, 3rd Revised Edition. Volume 2. New York: A Wiley-Interscience Publication, 1981. Technical Judgment. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. CCINFO MSDS/FTSS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. Vendor Information.

Complete Text of H phrases referred to in Section 3: H290 May be corrosive to metals. H314 Causes severe skin burns and eye damage.

Revision Summary: . Substantial revision to comply with EU Reg 1272/2008, Reg 1907/2006 and UN GHS (ST/SG/AC.10/36/Add.3).

Date of MSDS Preparation:

Day: 11

Month: February

Year: 2015

MSDS Prepared: MSDS prepared by Product Compliance Department extension 3350

CCOHS Evaluation Note: It is offered under exemption from WHMIS labeling as specified in the Controlled Products Regulation (CPR) Section 17. It is offered under the interim policy that was established by Health Canada permitting use of GHS-formatted safety data sheets in Canada prior to revision of CPR to GHS. This product has been classified and labeled in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3). This SDS has been prepared in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3).

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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Loveland, CO USA 80539
(970) 669-3050

MSDS No: M01680

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: THM PLUS Reagent 2
Catalog Number: 2754048

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

Emergency Telephone Numbers:
(Medical and Transportation)
(303) 623-5716 24 Hour Service
(515)232-2533 8am - 4pm CST

MSDS Number: M01680
Chemical Name: 3-pyridinecarboxamide, N,N-diethyl
CAS Number: 59-26-7
Additional CAS No. (for hydrated forms): Not applicable
Chemical Formula: C₁₀H₁₄N₂O
Chemical Family: Organic Amide
Intended Use: Determination of halogenated hydrocarbons

2. HAZARDS IDENTIFICATION

GHS Classification:

Hazard categories: Acute Toxicity: Acute Tox. 3-Orl Skin Corrosion/Irritation: Skin Irrit. 2 Serious Eye Damage/Eye Irritation: Eye Irrit. 2 Specific Target Organ Toxicity - Single Exposure: STOT SE 3

GHS Label Elements:

DANGER



Hazard statements: Toxic if swallowed. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

Precautionary statements: Wear protective gloves / protective clothing / eye protection / face protection. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear eye protection. **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. **IF ON SKIN:** Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. **IF SWALLOWED:** Immediately call a POISON CENTER or doctor/physician. **IF INHALED:** Remove victim/person to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. Take off contaminated clothing and wash before reuse. Dispose of contents/container according to state, local, federal or national regulations.

HMIS:

Health: 3

Flammability: 1

Reactivity: 0

Protective Equipment: X - See protective equipment, Section 8.

NFPA:

Health: 3

Flammability: 1

Reactivity: 0

Symbol: None

WHMIS Hazard Classification: Class D, Division 1, Subdivision B - Toxic material (immediate effects) Class D, Division 2, Subdivision A - Very toxic materials (other toxic effects)

WHMIS Symbols: Acute Poison

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Components according to GHS:

N,N Diethylnicotinamide

CAS Number: 59-26-7

Chemical Formula: C₁₀H₁₄N₂O

GHS Classification: Acute Tox. 3 -Orl, H301; Acute Tox 3 -Derm, H311; Acute Tox 3 -Inh, H331; Skin Irrit. 2, H315; Eye Irrit 2, H319; STOT Single 3, H335;

Percent Range: > 99.0

Percent Range Units: weight / weight

PEL: Not established

TLV: Not established

WHMIS Symbols: Acute Poison

4. FIRST AID MEASURES

General Information: In the event of exposure, show this Material Safety Data Sheet and label (where possible) to a doctor.

Advice to doctor: Treat symptomatically.

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

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

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

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

5. FIRE FIGHTING MEASURES

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

Fire Fighting Instruction: As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear. Evacuate area and fight fire from a safe distance.

Extinguishing Media: Alcohol foam. Carbon dioxide Dry chemical. Water.

Extinguishing Media NOT To Be Used: Not applicable

Fire / Explosion Hazards: None reported

Hazardous Combustion Products: Toxic fumes of: carbon monoxide, carbon dioxide. nitrogen oxides. May emit acrid smoke and fumes.

6. ACCIDENTAL RELEASE MEASURES

Spill Response Notice:

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

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

Clean-up Technique: If permitted by regulation, Cover spilled material with an inert ingredient and calcium carbonate. Sweep up material. Dispose of material in government approved hazardous waste facility. Decontaminate the area of the spill with a soap solution. Otherwise, Pick up spill for disposal and place in a closed container. Dispose of in accordance with local, state and federal regulations or laws.

Evacuation Procedure: Evacuate general area (50 foot radius or as directed by your facility's emergency response plan) when: a gallon or more of liquid is spilled. Evacuate as needed to perform spill clean-up.

DOT Emergency Response Guide Number: Not applicable

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes skin clothing Do not breathe mist or vapors. Use with adequate ventilation. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

Storage: Store in a cool, dry, well-ventilated place.

Flammability Class: Not applicable

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Use a fume hood to avoid exposure to dust, mist or vapor. Maintain general industrial hygiene practices when using this product.

Personal Protective Equipment:

Eye Protection: safety glasses with top and side shields

Skin Protection: nitrile gloves In the EU, the selected gloves must satisfy the specifications of EU Directive 89/686/EEC and standard EN 374 derived from it.

Inhalation Protection: laboratory fume hood

Precautionary Measures: Avoid contact with: eyes skin clothing Do not breathe: mist/vapor Use with adequate ventilation. Wash thoroughly after handling.

TLV: Not established

PEL: Not established

For Occupational Exposure Limits (OEL) for ingredients, see section 3 - Composition/Information on Ingredients.:

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Viscous yellow oil to white solid (temperature dependent)

Physical State: Viscous liquid to solid

Molecular Weight: 178.26

Odor: Slight

Odor Threshold: Not available

pH: Not applicable

Metal Corrosivity:

Corrosivity Classification:

Steel: Not determined

Aluminum: Not determined

Specific Gravity/ Relative Density (water = 1; air =1): 1.061

Viscosity: Not determined

Solubility:

Water: Soluble

Acid: Soluble

Other: Alcohol, acetone, most organic solvents

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

Coefficient of Water / Oil: Not available

Melting Point: 24-26 °C (75-79 °F)

Decomposition Temperature: Not determined

Boiling Point: 298 °C (568 °F)

Vapor Pressure: Not applicable

Vapor Density (air = 1): Not applicable

Evaporation Rate (water = 1): Not applicable

Volatile Organic Compounds Content: Not determined

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

Flash Point: Not determined

Method: Not applicable

Flammability Limits:

Lower Explosion Limits: Not determined

Upper Explosion Limits: Not determined

Autoignition Temperature: Not determined

Explosive Properties:

Not classified according to GHS criteria.

Oxidizing Properties:

Not classified according to GHS criteria.

Reactivity Properties:

Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.

Gas under Pressure:

Not classified according to GHS criteria.

Not applicable

10. STABILITY AND REACTIVITY

Chemical Stability: Stable when stored under proper conditions.

Mechanical Impact: None reported

Static Discharge: None reported.

Reactivity / Incompatibility: Incompatible with: acids strong bases oxidizers reducers

Hazardous Decomposition: Heating to decomposition releases acrid smoke and fumes.

Conditions to Avoid: Heat

11. TOXICOLOGICAL INFORMATION

Toxicokinetics, Metabolism and Distribution: No information available

Toxicologically Synergistic Products: None reported

Acute Toxicity: Route Data Given Below

Oral mouse LD50 = 188 mg/kg.

Specific Target Organ Toxicity - Single Exposure (STOT-SE): Target Organs Central nervous system

Specific Target Organ Toxicity - Repeat Exposure (STOT-RE): Based on classification principles, the classification criteria are not met.

Skin Corrosion/Irritation: Irritating to skin.

Eye Damage: Irritating to eyes.

Sensitization: Based on classification principles, the classification criteria are not met.

CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction): Data insufficient for classification

IARC Listed: No

NTP Listed: No

O.S.H.A. Listed: No

Symptoms/Effects:

Ingestion: Toxic May cause: central nervous system effects tremors rigidity excitation

Inhalation: Causes: respiratory tract irritation May cause: central nervous system effects excitation

Skin Absorption: Toxic Effects similar to those of ingestion

Chronic Effects: None reported

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

12. ECOLOGICAL INFORMATION

Product Ecological Information: --

No ecological data available for this product. Ecological structure-activity relationship (SAR) Estimation (ECOSAR U.S. EPA 2009)

Estimated Amides Fish 96h LC50 = 606.934 mg/l; Estimated Amides Daphnids 48h LC50 = 1320.289 mg/l; Estimated

Amides Green Algae 96h EC50 = 13.876 mg/l;

Ingredient Ecological Information: --

Not applicable

13. DISPOSAL CONSIDERATIONS

EPA Waste ID Number: Not applicable

Special Instructions (Disposal): Dispose of material in an E.P.A. approved hazardous waste facility.

Empty Containers: Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

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

D.O.T.:

D.O.T. Proper Shipping Name: Toxic, Liquid, Organic, N.O.S.

(N,N-Diethylnicotinamide)

Hazard Class: 6.1

Subsidiary Risk: NA

ID Number: UN2810

Packing Group: III

T.D.G.:

Proper Shipping Name: Toxic Liquid, Organic, N.O.S.

(N,N-Diethylnicotinamide)

Hazard Class: 6.1

Subsidiary Risk: NA

UN Number/PIN: 2810

Packing Group: III

I.C.A.O.:

I.C.A.O. Proper Shipping Name: Toxic Liquid, Organic, N.O.S.

(N,N-Diethylnicotinamide)

Hazard Class: 6.1

Subsidiary Risk: NA

ID Number: UN2810

Packing Group: III

I.M.O.:

Proper Shipping Name: Toxic Liquid, Organic, N.O.S.

(N,N-Diethylnicotinamide)

Hazard Class: 6.1

Subsidiary Risk: NA

ID Number: UN2810

Packing Group: III

Additional Information: There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

U.S. Federal Regulations:

O.S.H.A.: This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

E.P.A.:

S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370): Immediate (Acute) Health Hazard

S.A.R.A. Title III Section 313 (40 CFR 372): This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

--

302 (EHS) TPQ (40 CFR 355): Not applicable

304 CERCLA RQ (40 CFR 302.4): Not applicable

304 EHS RQ (40 CFR 355): Not applicable

Clean Water Act (40 CFR 116.4): Not applicable

RCRA: Contains no RCRA regulated substances.

State Regulations:

California Prop. 65: No Prop. 65 listed chemicals are present in this product.

Identification of Prop. 65 Ingredient(s): None

California Perchlorate Rule CCR Title 22 Chap 33: Not applicable

Trade Secret Registry: Not applicable

National Inventories:

U.S. Inventory Status: TSCA Status: Exempt (Low Volume Exemption)

CAS Number: 59-26-7

N,N-Diethylnicotinamide. This chemical may only be used as a reagent for the determination of halogenated hydrocarbons.

Canadian Inventory Status: DSL/NDSL Listed: No

EEC Inventory Status: EINECS Listed: Yes

Australian Inventory (AICS) Status: Not Listed

New Zealand Inventory (NZIoC) Status: Listed

Korean Inventory (KECI) Status: Listed

Japan (ENCS) Inventory Status: Listed

16. OTHER INFORMATION

References: CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. Vendor Information. Technical Judgment.

Complete Text of H phrases referred to in Section 3: H331 Toxic if inhaled. H311 Toxic in contact with skin. H301 Toxic if swallowed. H319 Causes serious eye irritation. H335 May cause respiratory irritation. H315 Causes skin irritation.

Revision Summary: . Substantial revision to comply with EU Reg 1272/2008, Reg 1907/2006 and UN GHS (ST/SG/AC.10/36/Add.3).

Date of MSDS Preparation:

Day: 10

Month: February

Year: 2015

MSDS Prepared: MSDS prepared by Product Compliance Department extension 3350

CCOHS Evaluation Note: This product has been classified and labeled in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3). It is offered under the interim policy that was established by Health Canada permitting use of GHS-formatted safety data sheets in Canada prior to revision of CPR to GHS. It is offered under exemption from WHMIS labeling as specified in the Controlled Products Regulation (CPR) Section 17.

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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MSDS No: M01684

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: THM PLUS Reagent 1
Catalog Number: 2753929

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

Emergency Telephone Numbers:
(Medical and Transportation)
(303) 623-5716 24 Hour Service
(515)232-2533 8am - 4pm CST

MSDS Number: M01684
Chemical Name: Not applicable
CAS Number: Not applicable
Additional CAS No. (for hydrated forms): Not applicable
Chemical Formula: Not applicable
Chemical Family: Not applicable
Intended Use: Determination of halogenated hydrocarbons

2. HAZARDS IDENTIFICATION

GHS Classification:

Hazard categories: Corrosive to Metals: Met. Corr. 1 Acute Toxicity: Acute Tox. 4-Orl .

GHS Label Elements:

DANGER



Hazard statements: May be corrosive to metals. Harmful if swallowed. Causes severe skin burns and eye damage.

Precautionary statements: . Wear protective gloves / protective clothing / eye protection / face protection. Do not breathe dust/fume/gas/mist/vapours/spray. Do not eat, drink or smoke when using this product. Wear eye protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove victim/person to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage. Dispose of contents/container according to state, local, federal or national regulations.

HMIS:

Health: 3

Flammability: 0

Reactivity: 1

Protective Equipment: X - See protective equipment, Section 8.

NFPA:

Health: 3

Flammability: 0

Reactivity: 1

Symbol: Not applicable

WHMIS Hazard Classification: Class E - Corrosive material Class D, Division 1, Subdivision B - Toxic material (immediate effects)

WHMIS Symbols: Corrosive Acute Poison

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Components according to GHS:

Potassium Hydroxide

CAS Number: 1310-58-3

Chemical Formula: KOH

GHS Classification: Acute Tox. 4 - Or1, H302; Skin Corr. 1A, H314; Met Corr. 1, H290; Aquatic Acute 3, H402

Percent Range: 55.0 - 65.0

Percent Range Units: weight / weight

PEL: 15 mg/m³ as inhalable dust; 5 mg/m³ as respirable dust

TLV: 10 mg/m³ as inhalable dust; 3 mg/m³ as respirable dust

WHMIS Symbols: Corrosive/Acute Poison

Sodium Thiosulfate

CAS Number: 7772-98-7

Chemical Formula: Na₂S₂O₃ · 5H₂O

GHS Classification: Skin Irrit 2, H315; Eye Irrit 2, H319, STOT SE 3, H335

Percent Range: 0.3-1.5

Percent Range Units: weight / weight

PEL: 15 mg/m³ as total dust; 5 mg/m³ as respirable dust

TLV: 10 mg/m³ as inhalable dust

WHMIS Symbols: Not applicable

Hazardous Components according to GHS: No

Demineralized Water

CAS Number: 7732-18-5

Chemical Formula: H₂O

GHS Classification: Not a dangerous substance according to GHS.

Percent Range: 30.0 - 40.0

Percent Range Units: weight / weight

PEL: Not established

TLV: Not established

WHMIS Symbols: Not applicable

4. FIRST AID MEASURES

General Information: In the event of exposure, show this Material Safety Data Sheet and label (where possible) to a doctor.

Advice to doctor: Treat symptomatically.

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

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

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

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.

5. FIRE FIGHTING MEASURES

Flammable Properties: Material will not burn.

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

Extinguishing Media: Water.

Extinguishing Media NOT To Be Used: Not applicable

Fire / Explosion Hazards: None reported

Hazardous Combustion Products: This material will not burn.

6. ACCIDENTAL RELEASE MEASURES

Spill Response Notice:

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. 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: If permitted by regulation, Cover spilled material with a dry acid, such as citric or boric. Scoop up slurry into a large beaker. Dispose of material in government approved hazardous waste facility. Otherwise, Dispose of in accordance with local, state and federal regulations or laws. 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: any quantity is spilled. If conditions warrant, increase the size of the evacuation.

DOT Emergency Response Guide Number: 154

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: Store away from: acids metals organic peroxides combustible materials Protect from: heat freezing

Flammability Class: Not applicable

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Have an eyewash station nearby. Have a safety shower nearby. Use a fume hood to avoid exposure to dust, mist or vapor. Maintain general industrial hygiene practices when using this product.

Personal Protective Equipment:

Eye Protection: chemical splash goggles

Skin Protection: disposable latex gloves lab coat

Inhalation Protection: laboratory fume hood

Precautionary Measures: Avoid contact with: eyes skin clothing Do not breathe: mist/vapor Wash thoroughly after handling. Protect from: heat freezing

TLV: Not established

PEL: Not established

For Occupational Exposure Limits (OEL) for ingredients, see section 3 - Composition/Information on Ingredients.:

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear, colorless liquid

Physical State: Liquid

Molecular Weight: Not applicable

Odor: None

Odor Threshold: Odorless

pH: >14

Metal Corrosivity:

Corrosivity Classification: Classified as corrosive to metals.

Steel: Not determined

Aluminum: Not determined

Specific Gravity/ Relative Density (water = 1; air =1):

Viscosity: Not determined

Solubility:

Water: Soluble

Acid: Not determined

Other: Not determined

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

Coefficient of Water / Oil: Not applicable

Melting Point: Not determined

Decomposition Temperature: Not applicable

Boiling Point: Not determined

Vapor Pressure: Not determined

Vapor Density (air = 1): Not determined

Evaporation Rate (water = 1): Not determined
Volatile Organic Compounds Content: Not applicable
Flammable Properties: Material will not burn.
Flash Point: Not applicable
Method: Not applicable
Flammability Limits:
Lower Explosion Limits: Not applicable
Upper Explosion Limits: Not applicable
Autoignition Temperature: Not applicable
Explosive Properties:
Not classified according to GHS criteria.
Oxidizing Properties:
Not classified according to GHS criteria.
Reactivity Properties:
Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.
Gas under Pressure:
Not classified according to GHS criteria.
Not applicable

10. STABILITY AND REACTIVITY

Chemical Stability: Stable when stored under proper conditions.
Mechanical Impact: None reported
Static Discharge: None reported.
Reactivity / Incompatibility: May react violently in contact with: acids metals organic peroxides combustible materials
Hazardous Decomposition: None reported
Conditions to Avoid: Extreme temperatures

11. TOXICOLOGICAL INFORMATION

Toxicokinetics, Metabolism and Distribution: No information available for mixture.
Toxicologically Synergistic Products: None reported
Acute Toxicity: Acute Toxicity Estimate (ATE) - Calculated from Ingredient Toxicity Data
ATE Oral rat LD50 = 450 mg/kg.
Specific Target Organ Toxicity - Single Exposure (STOT-SE): Based on classification principles, the classification criteria are not met.
Specific Target Organ Toxicity - Repeat Exposure (STOT-RE): Based on classification principles, the classification criteria are not met.
Skin Corrosion/Irritation: Corrosive to skin.
Eye Damage: Corrosive to eyes.
Sensitization: Based on classification principles, the classification criteria are not met.
CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction): No germ cell mutagenicity, carcinogenicity or reproductive toxicity data found.
This product does NOT contain any IARC listed chemicals.
This product does NOT contain any NTP listed chemicals.
This product does NOT contain any OSHA listed carcinogens.
Symptoms/Effects:
Ingestion: Harmful Causes: abdominal pain vomiting Can cause: death
Inhalation: Causes: severe burns sneezing coughing discomfort bronchospasm Can cause: death
Skin Absorption: None Reported
Chronic Effects: None reported
Medical Conditions Aggravated: Pre-existing: Eye conditions Skin conditions Respiratory conditions

12. ECOLOGICAL INFORMATION

Product Ecological Information: --
No ecological data available for this product.
Ingredient Ecological Information: Potassium Hydroxide: *Gambusia affinis* 96 hr LC50 = 80 mg/l
CEPA Statement: Potassium Hydroxide, Sodium Hydroxide, Water: Persistent, not bioaccumulative or inherently toxic to aquatic organisms.

Potassium Hydroxide: Gambusia affinis 96 hr LC50 = 80 mg/l; Sodium Thiosulfate: Gambusia affinis 96 hr LC50 = 24000 mg/L; Ankistrodesmus falcatus 1 h 64 mg/L.

13. DISPOSAL CONSIDERATIONS

EPA Waste ID Number: D002

Special Instructions (Disposal): Dilute material with excess water making a weaker than 5% solution. Adjust to a pH between 6 and 9 with an acid, such as sulfuric or citric. Open cold water tap completely, slowly pour the reacted material to the drain. Flush system with plenty of water.

Empty Containers: Dispose of empty container as normal trash. Rinse three times with an appropriate solvent.

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

D.O.T.:

D.O.T. Proper Shipping Name: Potassium Hydroxide, Solution

--

Hazard Class: 8

Subsidiary Risk: NA

ID Number: UN1814

Packing Group: II

T.D.G.:

Proper Shipping Name: Potassium Hydroxide, Solution

--

Hazard Class: 8

Subsidiary Risk: NA

UN Number/PIN: 1814

Packing Group: II

I.C.A.O.:

I.C.A.O. Proper Shipping Name: Potassium Hydroxide Solution

--

Hazard Class: 8

Subsidiary Risk: NA

ID Number: UN1814

Packing Group: II

I.M.O.:

Proper Shipping Name: Potassium Hydroxide Solution

--

Hazard Class: 8

Subsidiary Risk: NA

ID Number: UN1814

Packing Group: II

Additional Information: There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

U.S. Federal Regulations:

O.S.H.A.: This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

E.P.A.:

S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370): Immediate (Acute) Health Hazard

S.A.R.A. Title III Section 313 (40 CFR 372): This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

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302 (EHS) TPQ (40 CFR 355): Not applicable

304 CERCLA RQ (40 CFR 302.4): Potassium hydroxide 1000 lbs.
304 EHS RQ (40 CFR 355): Not applicable
Clean Water Act (40 CFR 116.4): Potassium hydroxide - RQ 1000 lbs.
RCRA: Contains RCRA regulated substances. See Section 13, EPA Waste ID Number.

State Regulations:

California Prop. 65: No Prop. 65 listed chemicals are present in this product.

Identification of Prop. 65 Ingredient(s): None

California Perchlorate Rule CCR Title 22 Chap 33: Not applicable

Trade Secret Registry: Not applicable

National Inventories:

U.S. Inventory Status: All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).

CAS Number: Not applicable

Canadian Inventory Status: All ingredients of this product are DSL Listed.

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

Australian Inventory (AICS) Status: All ingredients are listed.

New Zealand Inventory (NZIoC) Status: All components either listed or exempt.

Korean Inventory (KECI) Status: All components of this product are either listed, listed as the anhydrous compound or exempt.

Japan (ENCS) Inventory Status: All components either listed or exempt.

China (PRC) Inventory (MEP) Status: All components either listed or exempt.

16. OTHER INFORMATION

References: 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. Technical Judgment. In-house information. 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. CEPA Environmental Registry™ Substance List
Complete Text of H phrases referred to in Section 3: H290 May be corrosive to metals. H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage.

Revision Summary: . Substantial revision to comply with EU Reg 1272/2008, Reg 1907/2006 and UN GHS (ST/SG/AC.10/36/Add.3).

Date of MSDS Preparation:

Day: 11

Month: February

Year: 2015

MSDS Prepared: MSDS prepared by Product Compliance Department extension 3350

CCOHS Evaluation Note: It is offered under exemption from WHMIS labeling as specified in the Controlled Products Regulation (CPR) Section 17. It is offered under the interim policy that was established by Health Canada permitting use of GHS-formatted safety data sheets in Canada prior to revision of CPR to GHS. This product has been classified and labeled in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3). This SDS has been prepared in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3).

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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