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

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<td>N/A</td>
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<td>OSHA</td>
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Total Enclosures: 1
MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Amino Acid F Reagent
Catalog Number: 2253869

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

Emergency Telephone Numbers:
(P.O.Box 389 (Medical and Transportation)
Loveland, CO USA 80539 (303) 623-5716 24 Hour Service
(970) 669-3050 (515)232-2533 8am - 4pm CST

MSDS Number: M00115
Chemical Name: Not applicable
CAS No.: Not applicable
Chemical Formula: Not applicable
Chemical Family: Not applicable
Hazard: Allergen May cause irritation.
Date of MSDS Preparation:
Day: 20
Month: 07
Year: 2010

2. COMPOSITION / INFORMATION ON INGREDIENTS

Amino Acid F (Trade Secret)
CAS No.: Confidential. HMIRC Registry Number: 7273, Granted 10/06/04
TSCA CAS Number: Confidential
Percent Range: 1.0 - 5.0
Percent Range Units: weight / weight
LD50: Oral rat LD50 >2000mg/Kg
LC50: None reported
TLV: Handle as a nuisance dust.
PEL: Handle as a nuisance dust.
Hazard: May cause irritation.

Sodium Metabisulfite
CAS No.: 7681-57-4
TSCA CAS Number: 7681-57-4
Percent Range: 90.0 - 100.0
Percent Range Units: weight / weight
LD50: Oral rat LD50 = 1131 mg/kg
LC50: None reported
TLV: 5 mg/m^3 (ACGIH - TWA)
PEL: Not established
Hazard: May cause irritation. May cause allergic reaction.

3. HAZARDS IDENTIFICATION

Emergency Overview:
Appearance: Tan to Green powder
Odor: None
MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION
MAY CAUSE ALLERGIC RESPIRATORY REACTION IF SWALLOWED OR INHALED

HMIS:
- Health: 2
- Flammability: 0
- Reactivity: 0
- Protective Equipment: X - See protective equipment, Section 8.

NFPA:
- Health: 2
- Flammability: 0
- Reactivity: 0
- Symbol: Not applicable

Potential Health Effects:
- Eye Contact: May cause irritation
- Skin Contact: May cause irritation
- Skin Absorption: None reported
  - Target Organs: None reported
- Ingestion: Causes: irritation of the mouth and esophagus. May cause allergic respiratory reaction if swallowed or inhaled. May cause: abdominal pain, diarrhea, vomiting, headache, central nervous system depression, circulatory collapse, respiratory arrest, death
  - Target Organs: Central nervous system, Gastrointestinal tract
- Inhalation: Causes: irritation of nose and throat. May cause: allergic respiratory reaction
  - Target Organs: Central nervous system
- Medical Conditions Aggravated: Pre-existing: Eye conditions, Skin conditions, Respiratory conditions. Sulfites are strong sensitizers. Inhalation and ingestion may cause allergic respiratory reactions in asthmatics. Persons with respiratory conditions should take special care when working with products that contain sulfites.
- Chronic Effects: Chronic overexposure may cause allergic respiratory reactions, respiratory tract damage. Chronic ingestion of sodium metabisulfite caused anemia and reduced body weight gain in experimental animals.

Cancer / Reproductive Toxicity Information:
- This product does NOT contain any OSHA listed carcinogens.
- An ingredient of this mixture is: IARC Group 3: Non-classifiable Metabisulfites
- This product does NOT contain any NTP listed chemicals.
- Additional Cancer / Reproductive Toxicity Information: Sodium metabisulfite has shown positive results in screening tests for mutagenicity.
- Toxicologically Synergistic Products: None reported

4. FIRST AID

- 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. Call physician immediately. Give 1-2 glasses of water under medical supervision. Never give anything by mouth to an unconscious person.
- Inhalation: Remove to fresh air. Give artificial respiration if necessary. Call physician.

5. FIRE FIGHTING MEASURES

- Flammable Properties: During a fire, this product decomposes to form toxic gases.
- Flash Point: Not applicable
- Method: Not applicable
- Flammability Limits:
  - Lower Explosion Limits: Not applicable
  - Upper Explosion Limits: Not applicable
- Autoignition Temperature: Not determined
- Hazardous Combustion Products: Toxic fumes of: sulfur oxides, carbon monoxide, carbon dioxide, nitrogen oxides, sodium oxides
- Fire / Explosion Hazards: May react violently with: strong oxidizers
- Static Discharge: None reported
- Mechanical Impact: None reported
- Extinguishing Media: Carbon dioxide, Dry chemical, Alcohol foam.
- 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 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. Cover spilled solid material with sand or other inert material.

**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. Filter to remove solids. Flush reacted material to the drain with a large excess of water.

**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.

**Special Instructions (for accidental release):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**D.O.T. Emergency Response Guide Number:** Not applicable

7. HANDLING / 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:** Protect from: moisture oxidizers acids / acid fumes.

**Flammability Class:** Not applicable

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 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.

**Protection from:** oxidizers acids/acid fumes

**TLV:** Not established

**PEL:** Not established

9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Tan to Green powder

**Physical State:** Solid

**Molecular Weight:** Not applicable

**Odor:** None

**pH:** of 5% solution = 4.3

**Vapor Pressure:** Not applicable

**Vapor Density (air = 1):** Not applicable

**Boiling Point:** Not applicable

**Melting Point:** Decomposes

**Specific Gravity/ Relative Density (water = 1; air =1):** 1.48

**Evaporation Rate (water = 1):** Not applicable

**Volatile Organic Compounds Content:** Not applicable

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

**Solubility:**
- **Water:** Mostly soluble
- **Acid:** Soluble in HCl and H₂SO₄ solutions
- **Other:** Soluble in NaOH solutions

**Metal Corrosivity:**
- **Steel:** 0.033 in/yr
- **Aluminum:** 0.001 in/yr
10. STABILITY / REACTIVITY

Chemical Stability: Stable when stored under proper conditions.
Conditions to Avoid: Heating to decomposition. Excess moisture
Reactivity / Incompatibility: May react violently in contact with: acids oxidizers
Hazardous Decomposition: Toxic fumes of: carbon dioxide carbon monoxide sulfur oxides
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Product Toxicological Data:
LD50: None reported
LC50: None reported
Dermal Toxicity Data: Sodium metabisulfite: dermal guinea pig LD<sub>50</sub> > 1000 mg/kg.
Skin and Eye Irritation Data: None reported
Mutation Data: Sodium metabisulfite has shown positive results in screening tests for mutagenicity. Sodium metabisulfite: Cytogeneic analysis hamster ovary 180 µg/L; Sister chromatid exchange on hamster ovary at 200 µg/L
Reproductive Effects Data: Sodium metabisulfite: Oral rat TDLo= 20 g/Kg Effects on newborn - stillbirth; Oral rat TDLo= 40 g/Kg Effects on newborn - weaning or lactation index.
Ingredient Toxicological Data: Amino Acid F: Oral rat LD<sub>50</sub> > 2,000 mg/Kg; Sodium metabisulfite: Oral rat LD<sub>50</sub> = 1131 mg/Kg

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 material with excess water making a weaker than 5% solution. 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.
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.

14. TRANSPORT INFORMATION

D.O.T.:
D.O.T. Proper Shipping Name: Not Currently Regulated
DOT Hazard Class: NA
DOT Subsidiary Risk: NA
DOT ID Number: NA
DOT Packing Group: NA
I.C.A.O.:
I.C.A.O. Proper Shipping Name: Not Currently Regulated
ICAO Hazard Class: NA
ICAO Subsidiary Risk: NA
ICAO ID Number: NA
ICAO Packing Group: NA
I.M.O.:
I.M.O. Proper Shipping Name: Not Currently Regulated
IMHO Hazard Class: NA
I.M.O. Subsidiary Risk: NA
I.M.O. ID Number: NA
I.M.O. 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.

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.
C.P.S.C.: Not applicable

State Regulations:
California Prop. 65: No Prop. 65 listed chemicals are present in this product.
Identification of Prop. 65 Ingredient(s): Not applicable
California Perchlorate Rule CCR Title 22 Chap 33:
Trade Secret Registry: New Jersey Trade Secret Registry Number 80100131-5000 (Amino Acid F) New York Trade Secret Registry Number 477 (Amino Acid F) This product complies with Pennsylvania Trade Secret Regulations. This product is registered as a trade secret in the state of Illinois. This product is registered as a trade secret in the state of Massachusetts.

National Inventories:
U.S. Inventory Status: All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).
TSCA CAS Number: Not applicable

16. OTHER INFORMATION

Intended Use: Indicator for silica


Revision Summary: European MSDS Only Updates in Heading(s) 2,

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