SAFETY DATA SHEET

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

Product Name: Acid Reagent Powder Pillows for High Range Silica
Catalog Number: 2541549

HACH LANGE GmbH
Willstätterstrasse 11
40549 Düsseldorf; Germany
+49-(0)211-52880
E-mail: SDS@hach-lange.de

Responsible Department:
HACH LANGE LTD
Unit 1, Chestnut Road
Western Industrial Estate, IRL-Dublin 12 Ireland
+353(0)1 4602522
E-mail: info@hach-lange.ie

HACH LANGE LTD
Pacific Way
Salford, GB-Manchester United Kingdom M50 1DL
+44 (0)161 872 14 87
E-mail: info@hach-lange.co.uk

SDS Number: M00025
Index Number per (EC) No 1272/2008: Not applicable
CAS No.: Not applicable
Additional CAS No. (for hydrated forms): Not applicable
EEC Number: Not applicable
REACH Registration Number: Not applicable
Use of the substance/preparation: Silica determination
Date of MSDS Preparation:
Day: 05
Month: November
Year: 2010

2. HAZARDS IDENTIFICATION

CLASSIFICATION:
Indication of Danger: Irritant
R-phrases: R 36/38: Irritating to eyes and skin. R 52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

GHS Classification: Reg (EC) 1272/2008:
Hazard categories: Serious Eye Damage/Eye Irritation: Eye Irrit. 2 Skin Corrosion/Irritation: Skin Irrit. 2 Hazardous to the Aquatic Environment: Aquatic Chronic 3
Hazard statements: Causes serious eye irritation. Causes skin irritation. Harmful to aquatic life with long lasting effects.

LABEL ELEMENTS:
Hazardous Components Indicated on Label as Listed in Section 3:
Signal Word: WARNING

Hazard Statements: H319 Causes serious eye irritation. H315 Causes skin irritation. H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements: P280 Wear protective gloves / protective clothing / eye protection / face protection. P264 Wash thoroughly after handling. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313 IF eye irritation persists: Get medical advice/attention. P302+P352 IF ON SKIN: Wash with plenty of soap and water. P362 Take off contaminated clothing and wash before reuse.

For package sizes of < 125 ml, only the following H and P codes appear on the product label.:

H Phrases: H319, H315, H412

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3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Components per Regulation (EU) No. 1272/2008:

Sulfamic Acid

- Index Number per (EC) No 1272/2008: 016-026-00-0
- CAS No.: 5329-14-6
- EEC Number: 226-219-8
- Classification: Xi, R36/38; R 52/53
- GHS Classification: Eye Irrit. 2, H319; Skin Irrit. 2 H315; Aquatic Chronic 3 H412; Acute Tox 5 - Oral H303
- EU Occupational Exposure Limits: 3 mg/m³ inhalable dust
- Percent Range: 80.0 - 90.0
- Percent Range Units: weight / weight

Sodium Chloride

- Index Number per (EC) No 1272/2008: Not applicable
- CAS No.: 7647-14-5
- EEC Number: 2315983
- Classification: GHS Classification: EU Occupational Exposure Limits: 3 mg/m³, Inhalable dust
- Percent Range: 10.0 - 20.0
- Percent Range Units: weight / weight

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4. FIRST AID MEASURES

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

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

Skin Contact (First Aid): Wash skin with plenty of water. Call physician if irritation develops.

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

Advice to doctor: Treat symptomatically.

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5. FIRE FIGHTING MEASURES

Extinguishing Media: Water. Dry chemical.

Extinguishing Media NOT To Be Used: Not applicable
Hazardous Combustion Products: Toxic fumes of: ammonia nitrogen oxides. sulfur oxides. sodium monoxide
Fire / Explosion Hazards: May react violently with: chlorine / chlorine compounds metal nitrates metal nitrites nitric acid
Fire Fighting Instruction: As in any fire, wear self-contained breathing apparatus pressure-demand and fall protective gear.

6. ACCIDENTAL RELEASE MEASURES

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.
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. 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. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes skin. Do not breathe dust. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.
Storage: Store away from: acids. Protect from: heat. moisture

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EU Occupational Exposure Limits: 3 mg/m³, Inhalable dust
For Occupational Exposure Limits (OEL) for ingredients, see section 3 - Composition/Information on Ingredients:
Engineering Controls: Use general ventilation to minimize exposure to mist, vapor or dust. Maintain general industrial hygiene practices when using this product.
Personal Protective Equipment:
Eye Protection: safety glasses with top and side shields
Skin / Hand Protection: disposable latex gloves 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

9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: White crystals
Physical State: Solid
Odor: None
Odor Threshold: Odorless
pH: of a 5% solution = 0.8
Boiling Point: Not applicable
Melting Point: ~205 °C ~401 °F
Decomposition Temperature: Not determined
Evaporation Rate (water = 1): Not applicable
Flammable Properties: During a fire, irritating and highly 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
Vapor Pressure: Not applicable
Vapor Density (air = 1): Not applicable
Specific Gravity/ Relative Density (water = 1; air =1): 2.00
Viscosity: Not applicable
Solubility:
  Water: Soluble
  Partition Coefficient (n-octanol / water): Not applicable
  Autoignition Temperature: Not applicable
  Metal Corrosivity:
    Corrosivity Classification: Not classified as corrosive to metals according to GHS criteria.
    Aluminium: Not determined
    Steel: Not determined
  Explosive Properties:
    Not applicable  Not classified according to GHS criteria.
  Oxidizing Properties:
    Not applicable  Not classified according to GHS criteria.
  Reactivity Properties:
    Not applicable  Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.
  Gas under Pressure: 

10. STABILITY / REACTIVITY

  Chemical Stability: Stable when stored under proper conditions.
  Mechanical Impact: None reported
  Static Discharge: None reported.
  Reactivity / Incompatibility: Incompatible with: bromine trifluoride chlorine fuming nitric acid lithium trifluoride
  Hazardous Decomposition: Heating to decomposition releases toxic and/or corrosive fumes of: nitrogen oxides sulfur oxides
  Conditions to Avoid: Heating to decomposition. Excess moisture

11. TOXICOLOGICAL INFORMATION

  Toxicokinetics, Metabolism and Distribution: No information available for mixture.
  Acute Toxicity: Acute Toxicity Estimate (ATE) - Calculated from Ingredient Toxicity Data
    Oral rat LD50 = 6702 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: 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): No germ cell mutagenicity, carcinogenicity or reproductive toxicity data found.
  This product does NOT contain any IARC listed chemicals.

12. ECOLOGICAL INFORMATION

  Product Ecological Information: --
    No ecological data available for this product. Mobility in soil: No data available
  Ingredient Ecological Information: --
    CEPA screening assessment conclusion for each and every ingredient: Unlikely to cause ecological harm
    Sulfamic acid: Pimephales promelas 96 hr LC50 14.2 - 70.3 mg/L

13. DISPOSAL CONSIDERATIONS

  Disposal number: Waste from residues or unused products: 160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST: gases in pressure containers and discarded chemicals; Classified as hazardous waste. Laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals.
Disposal number: Used product: 160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST: gases in pressure containers and discarded chemicals; classified as hazardous waste. Laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals.

Disposal number: Contaminated packaging: 160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST: gases in pressure containers and discarded chemicals; classified as hazardous waste. Laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals.

Uncontaminated packaging: In accordance with local and national regulations.

14. TRANSPORT INFORMATION

I.M.O.:  
I.M.O. Proper Shipping Name: Sulphamic Acid Mixture

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I.M.O. Hazard Class: 8
I.M.O. Subsidiary Risk: NA
I.M.O. UN Number: UN2967
I.M.O. Packing Group: III

I.C.A.O.:  
I.C.A.O. Proper Shipping Name: Sulphamic Acid Mixture

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ICAO Hazard Class: 8
ICAO Subsidiary Risk: NA
ICAO UN/ID Number: UN2967
ICAO Packing Group: III

A.D.R.:  
A.D.R. Proper Shipping Name: Sulphamic Acid Mixture

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A.D.R. Hazard Class: 8
A.D.R. Subsidiary Risk: NA
A.D.R. UN-Number: UN2967
A.D.R. 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

NATIONAL REGULATORY INFORMATION:
Employment restrictions (EU): Observe employment restrictions for young people.
Water containing class (Germany): 1 - slightly water contaminating
Technical Rules for Dangerous Substances (Technische Regeln für Gefahrstoffe - TRGS): TRGS 400 TRGS 401
May be applicable
Tableaux de Maladies Professionnelles (France): Not applicable
Nomenclature des Installations Classes Pour la Protection de L'Environnement (France): Contains substances that may be covered by regulation.
Netherlands De Algemene Beoordelingsmethodiek Water (ABM) - (Netherlands): ABM Classification 8 Sulphamic acid
Ministry of Social Affairs and Employment - (SZW) Netherlands List of CMR: Not applicable
CHEMICAL SAFETY ASSESSMENT: No chemical safety assessment has been done.

16. OTHER INFORMATION

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


Classification Guidance Used: Product is a mixture classified and labelled according to EC 1272/2008.

<table>
<thead>
<tr>
<th>CLASSIFICATION</th>
<th>CLASSIFICATION PROCEDURE</th>
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<td>Bridging principle &quot;Dilution&quot;</td>
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<td>Skin Irrit. 2, H315</td>
<td>Bridging principle &quot;Dilution&quot;</td>
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<tr>
<td>Aquatic Chr. 3, H412</td>
<td>Bridging principle &quot;Dilution&quot;</td>
</tr>
</tbody>
</table>

Complete Text of H phrases referred to in Section 3: H319 Causes serious eye irritation. H315 Causes skin irritation. H412 Harmful to aquatic life with long lasting effects.

Complete Text of R phrases referred to in Section 3: R 36/38: Irritating to eyes and skin. R 52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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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