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

| Product | MSDS | Distributor | Format | Language | Quantity |
|---|---|---|---|---|---|
| 2242000 | 1429099 | Hach Company | EEC | English | 1 |
| 2242000 | 1429449 | Hach Company | EEC | English | 1 |
| 2242000 | 1457799 | Hach Company | EEC | English | 1 |

Total Enclosures: 3

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

*MSDS No: M00067*

# SAFETY DATA SHEET

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

***Product Name:*** AluVer ® 3 Aluminum Reagent
***Catalog Number:*** 1429099

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:*** M00067
***Chemical Name:*** Not applicable
***Chemical Formula:*** Not applicable
***Chemical Family:*** Not applicable
***Use of the substance/preparation:*** Determination of aluminum
***CAS No.:*** Not applicable
***Hazard:*** Causes severe 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: +39-02-66101029, Netherlands: +31 -(0)30-2748888, Switzerland: +41-(0)1-2515151

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

**Aurintricarboxylic Acid, Calcium Salt**
***EEC Number:*** 2641935
***CAS No.:*** 63451-31-0
***Percent Range:*** 1,0 - 5,0
***Percent Range Units:*** weight / weight
***Ingredient EEC Symbol:*** Not applicable
***Ingredient R phrase(s) (R phrase details given in Heading 16):*** Not applicable
***TLV:*** Not established
***PEL:*** Not established
***EU Occupational Exposure Limits:*** 3 $mg/m^3$, Inhalable dust

**Disodium Succinate**
***EEC Number:*** 2057787
***CAS No.:*** 6106-21-4
***Percent Range:*** 20,0 - 30,0
***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 $mg/m^3$, Inhalable dust

**Succinic Acid**
***EEC Number:*** 2037404
***CAS No.:*** 110-15-6
***Percent Range:*** 70,0 - 80,0
***Percent Range Units:*** weight / weight

***Ingredient EEC Symbol:*** Xi - IRRITATING
***Ingredient R phrase(s) (R phrase details given in Heading 16):*** R 36
***TLV:*** Not established
***PEL:*** Not established
***EU Occupational Exposure Limits:*** 3 $mg/m^3$, Inhalable dust

## 3. HAZARDS IDENTIFICATION

***Emergency Overview:***
***Appearance:*** Red to Reddish brown powder
***Odor:*** Irritating
***EU Symbols:*** Xi - IRRITATING
***R PHRASES:*** R 36: Irritating to eyes.

***Protective Equipment:***
***Potential Health Effects:***
***Eye Contact (EC):*** Causes severe irritation
***Skin Contact (EC):*** Causes mild irritation
***Skin Absorption (EC):*** No effects anticipated
***Target Organs (SA E):*** Not applicable
***Ingestion (EC):*** May cause: diarrhea weakness gastrointestinal disturbances
***Target Organs (Ing E):*** None Reported
***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 central nervous system effects
***Cancer / Reproductive Toxicity Information:***
This product does NOT contain any IARC listed chemicals.

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

## 4. FIRST AID MEASURES

***Eye Contact:*** Immediately flush eyes with water for 15 minutes. Call physician.
***Skin Contact (First Aid):*** Wash skin with plenty of water.
***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.
***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:*** Scoop up spilled material into a large beaker and dissolve with water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution.
***Evacuation Procedure:*** Evacuate local area (15 foot radius or as directed by your facility's emergency response plan) when: a pound or more of loose powder is spilled. If conditions warrant, increase the size of the evacuation.

## 7. HANDLING AND STORAGE

***Handling:*** Avoid contact with eyes Do not breathe dust. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.
***Storage:*** Protect from: heat Keep away from: oxidizers Store at 10 - 30°C.
***Special Packaging Instructions:*** Not applicable
***Use of the substance/preparation:*** Determination of aluminum

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

***Engineering Controls:*** Have an eyewash station nearby. Maintain general industrial hygiene practices when using this product.
***Personal Protective Equipment:***
***Eye Protection:*** 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 Do not breathe: dust Wash thoroughly after handling. Protect from: heat Keep away from: oxidizers
***TLV:*** Not established
***PEL:*** Not established
***EU Occupational Exposure Limits:*** 3 mg/m$^3$, Inhalable dust

## 9. PHYSICAL / CHEMICAL PROPERTIES

***Appearance:*** Red to Reddish brown powder
***Physical State:*** Solid
***Odor:*** Irritating
***pH:*** 10% solution = 3,85
***Vapor Pressure:*** Not applicable
***Vapor Density (air = 1):*** Not applicable
***Boiling Point:*** Not available
***Melting Point:*** 145°C; 293°F
***Flash Point:*** Not applicable
***Method:*** Not applicable
***Autoignition Temperature:*** Not available
***Flammability Limits:***
***Lower Explosion Limits:*** Not applicable
***Upper Explosion Limits:*** Not applicable
***Specific Gravity (water = 1):*** 1,66
***Evaporation Rate (water = 1):*** Not applicable
***Volatile Organic Compounds Content:*** Not applicable
***Partition Coefficient (n-octanol / water):*** Not applicable
***Solubility:***
***Water:*** Soluble
***Acid:*** Soluble
***Other:*** Not determined
***Metal Corrosivity:***
***Steel:*** 0,061 in/yr
***Aluminum:*** 0,001 in/yr

## 10. STABILITY / REACTIVITY

***Chemical Stability:*** Stable when stored under proper conditions.
***Conditions to Avoid:*** Heat

***Reactivity / Incompatibility:*** May react violently in contact with: oxidizers
***Hazardous Decomposition:*** Heating to decomposition releases toxic fumes of carbon monoxide and carbon dioxide.
***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:*** Succinic acid: Eye rabbit 1179 µg SEVERE
***Mutation Data:*** None reported
***Reproductive Effects Data:*** None reported
--
***Ingredient Toxicological Data:*** Succinic Acid: Oral rat LD50 = 2260 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:*** Xi - IRRITATING
***R PHRASES:*** R 36: Irritating to eyes.
***S PHRASES:*** S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

## 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. In-house information. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. Technical Judgment.
***R PHRASES:*** R 36: Irritating to eyes.
***Use of the substance/preparation:*** Determination of aluminum
***Revision Summary:*** Updates in Section(s) 14,

**Legend:**

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

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

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

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

*MSDS No: M00068*

# SAFETY DATA SHEET

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

***Product Name:*** Bleaching 3 Reagent
***Catalog Number:*** 1429449

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:*** M00068
***Chemical Name:*** Not applicable
***Chemical Formula:*** Not applicable
***Chemical Family:*** Not applicable
***Use of the substance/preparation:*** Determination of aluminum
***CAS No.:*** Not applicable
***Hazard:*** Causes eye burns.
***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: +39-02-66101029, Netherlands: +31 -(0)30-2748888, Switzerland: +41-(0)1-2515151

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

**Sodium Pyrophosphate**
***EEC Number:*** 2317671
***CAS No.:*** 13472-36-1
***Percent Range:*** 45,0 - 55,0
***Percent Range Units:*** weight / weight
***Ingredient EEC Symbol:*** Not applicable
***Ingredient R phrase(s) (R phrase details given in Heading 16):*** Not applicable
***TLV:*** 5 $mg/m^3$
***PEL:*** 5 $mg/m^3$
***EU Occupational Exposure Limits:*** 3 $mg/m^3$, Inhalable dust

**Potassium Pyrosulfate**
***EEC Number:*** 2322168
***CAS No.:*** 7790-62-7
***Percent Range:*** 45,0 - 55,0
***Percent Range Units:*** weight / weight
***Ingredient EEC Symbol:*** Xi - IRRITATING
***Ingredient R phrase(s) (R phrase details given in Heading 16):*** R 41
***TLV:*** Not established
***PEL:*** Not established
***EU Occupational Exposure Limits:*** 3 $mg/m^3$, Inhalable dust

**Magnesium Sulfate**
***EEC Number:*** 2312982
***CAS No.:*** 10034-99-8
***Percent Range:*** 1,0 - 5,0

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

## 3. HAZARDS IDENTIFICATION

***Emergency Overview:***
***Appearance:*** White powder
***Odor:*** Irritating
***EU Symbols:*** Xi - IRRITATING
***R PHRASES:*** R 41: Risk of serious damage to eyes.

***Protective Equipment:***
***Potential Health Effects:***
***Eye Contact (EC):*** Causes irritation
***Skin Contact (EC):*** No effects are anticipated
***Skin Absorption (EC):*** None Reported
***Target Organs (SA E):*** None Reported
***Ingestion (EC):*** May cause: nausea vomiting irritation of the mouth and esophagus diarrhea
***Target Organs (Ing E):*** None Reported
***Inhalation:*** May cause: respiratory tract irritation coughing sore throat
***Target Organs (Inh E):*** None Reported
***Medical Conditions Aggravated:*** Pre-existing: Eye conditions Skin conditions Respiratory conditions
***Chronic Effects:*** None reported
***Cancer / Reproductive Toxicity Information:***
This product does NOT contain any IARC listed chemicals.

***Additional Cancer / Reproductive Toxicity Information:*** In laboratory tests, when magnesium sulfate was given to pregnant rats, a sharp reduction of both the number and the weight of the offspring was observed. 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. Give artificial respiration if necessary. Call physician.

## 5. FIRE FIGHTING MEASURES

***Flammable Properties:*** During a fire, this product decomposes to form toxic gases.
***Hazardous Combustion Products:*** Toxic fumes of: sulfur oxides. phosphorus oxides
***Fire / Explosion Hazards:*** May react violently with: strong reducers
***Static Discharge:*** None reported.
***Mechanical Impact:*** None reported
***Extinguishing Media:*** Use media appropriate to surrounding fire conditions
***Extinguishing Media NOT To Be Used:*** Not applicable
***Fire Fighting Instruction:*** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

***Spill Response Notice:***

Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.
***Containment Technique:*** Stop spilled material from being released to the environment.
***Clean-up Technique:*** Scoop up spilled material into a large beaker and dissolve with water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution.
***Evacuation Procedure:*** Evacuate local area (15 foot radius or as directed by your facility's emergency response plan) when: a pound or more of loose powder is spilled. If conditions warrant, increase the size of the evacuation.

## 7. HANDLING AND STORAGE

***Handling:*** Avoid contact with eyes skin Do not breathe dust. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.
***Storage:*** Keep away from: reducers Protect from: moisture heat
***Special Packaging Instructions:*** Not applicable
***Use of the substance/preparation:*** Determination of aluminum

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

***Engineering Controls:*** Have an eyewash station nearby. Maintain general industrial hygiene practices when using this product.
***Personal Protective Equipment:***
***Eye Protection:*** safety glasses with top and side shields
***Skin / Hand Protection:*** disposable latex gloves lab coat
***Inhalation Protection:*** dust / mist mask
***Precautionary Measures:*** Keep away from: reducers Protect from: moisture heat
***TLV:*** Not established
***PEL:*** Not established
***EU Occupational Exposure Limits:*** 3 mg/m$^3$, Inhalable dust

## 9. PHYSICAL / CHEMICAL PROPERTIES

***Appearance:*** White powder
***Physical State:*** Solid
***Odor:*** Irritating
***pH:*** 5% solution = 3,85
***Vapor Pressure:*** Not applicable
***Vapor Density (air = 1):*** Not applicable
***Boiling Point:*** Not applicable
***Melting Point:*** decomposes @ 210°C; 410°F
***Flash Point:*** Not applicable
***Method:*** Not applicable
***Autoignition Temperature:*** Not applicable
***Flammability Limits:***
***Lower Explosion Limits:*** Not applicable
***Upper Explosion Limits:*** Not applicable
***Specific Gravity (water = 1):*** 2,48
***Evaporation Rate (water = 1):*** Not applicable
***Volatile Organic Compounds Content:*** Not applicable
***Partition Coefficient (n-octanol / water):*** Not applicable
***Solubility:***
***Water:*** Soluble
***Acid:*** Soluble
***Other:*** Not determined
***Metal Corrosivity:***
***Steel:*** 0,001 in/yr
***Aluminum:*** 0,016 in/yr

## 10. STABILITY / REACTIVITY

***Chemical Stability:*** Stable when stored under proper conditions.
***Conditions to Avoid:*** Excess moisture Heating to decomposition.
***Reactivity / Incompatibility:*** Incompatible with: reducers
***Hazardous Decomposition:*** Heating to decomposition releases toxic and/or corrosive fumes of: phosphorus oxides sulfur oxides
***Hazardous Polymerization:*** Will not occur.

## 11. TOXICOLOGICAL INFORMATION

***Product Toxicological Data:***
***LD50:*** None reported
***LC50:*** None reported
***Dermal Toxicity Data:*** None reported
***Skin and Eye Irritation Data:*** None reported
***Mutation Data:*** None reported
***Reproductive Effects Data:*** Magnesium Sulfate - intraperitoneal rat TDLo = 750 mg/kg (17-21 days pregnant) TER - Sharp reduction in both the number and weight of offspring was observed.
--
***Ingredient Toxicological Data:*** Potassium Pyrosulfate Oral rat LD50 = 2340 mg/kg; Sodium Pyrophosphate Oral rat LD50 = 4000 mg/kg; Magnesium Sulfate Oral mouse LDLo = 5000 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:*** Xi - IRRITATING

***R PHRASES:*** R 41: Risk of serious damage to eyes.

***S PHRASES:*** S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 37/39: Wear suitable gloves and eye / face protection.

## 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. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. In-house informatio n. Outside Testing. Technical Judgment. Vendor Information.

***R PHRASES:*** R 41: Risk of serious damage to eyes.

***Use of the substance/preparation:*** Determination of aluminum

***Revision Summary:*** Updates in Section(s) 14,

**Legend:**

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

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

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

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

*MSDS No: M00075*

# SAFETY DATA SHEET

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

***Product Name:*** Ascorbic Acid
***Catalog Number:*** 1457799

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:*** M00075
***Chemical Name:*** Not applicable
***Chemical Formula:*** Not applicable
***Chemical Family:*** Not applicable
***Use of the substance/preparation:*** Laboratory Reagent
***CAS No.:*** Not applicable
***Hazard:*** Practically non-toxic.
***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: +39-02-66101029, Netherlands: +31 -(0)30-2748888, Switzerland: +41-(0)1-2515151

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

**Ascorbic Acid**
***EEC Number:*** 200-662
***CAS No.:*** 50-81-7
***Percent Range:*** > 99,0
***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 $mg/m^3$, Inhalable dust

**Other component**
***EEC Number:*** Not applicable
***CAS No.:*** Not applicable
***Percent Range:*** < 1,0
***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:*** Not established

## 3. HAZARDS IDENTIFICATION

***Emergency Overview:***

***Appearance:*** White to light yellow crystals
***Odor:*** Sweet
***EU Symbols:*** Not applicable
***R PHRASES:*** Not applicable

***Protective Equipment:***
***Potential Health Effects:***
***Eye Contact (EC):*** No effects are anticipated
***Skin Contact (EC):*** No effects are anticipated
***Skin Absorption (EC):*** No effects anticipated
***Target Organs (SA E):*** Not applicable
***Ingestion (EC):*** Very large doses may cause: gastrointestinal tract irritation diarrhea
***Target Organs (Ing E):*** None Reported
***Inhalation:*** No effects anticipated
***Target Organs (Inh E):*** Not applicable
***Medical Conditions Aggravated:*** None reported
***Chronic Effects:*** No effects anticipated
***Cancer / Reproductive Toxicity Information:***
IARC Listed: No

***Additional Cancer / Reproductive Toxicity Information:*** Contains: an experimental mutagen.
***Toxicologically Synergistic Products:*** None reported

## 4. FIRST AID MEASURES

***Eye Contact:*** Flush eyes with water. Call physician if irritation develops.
***Skin Contact (First Aid):*** Wash skin with soap and plenty of water.
***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.
***Fire / Explosion Hazards:*** May react violently with: strong oxidizers
***Static Discharge:*** None reported.
***Mechanical Impact:*** None reported
***Extinguishing Media:*** Carbon dioxide Dry chemical. Water.
***Extinguishing Media NOT To Be Used:*** Not applicable Not applicable Not applicable
***Fire Fighting Instruction:*** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

***Spill Response Notice:***
Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.
***Containment Technique:*** Stop spilled material from being released to the environment.
***Clean-up Technique:*** Scoop up spilled material into a large beaker and dissolve with water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution.
***Evacuation Procedure:*** Evacuate as needed to perform spill clean-up. If conditions warrant, increase the size of the evacuation.

## 7. HANDLING AND STORAGE

***Handling:*** Avoid contact with eyes Do not breathe dust. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.
***Storage:*** Keep away from: oxidizers
***Special Packaging Instructions:*** Not applicable

***Use of the substance/preparation:*** Laboratory Reagent

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

***Engineering Controls:*** 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 Do not breathe: dust Wash thoroughly after handling. Keep away from: oxidizers
***TLV:*** Not established
***PEL:*** Not established
***EU Occupational Exposure Limits:*** 3 $mg/m^3$, Inhalable dust

## 9. PHYSICAL / CHEMICAL PROPERTIES

***Appearance:*** White to light yellow crystals
***Physical State:*** Solid
***Odor:*** Sweet
***pH:*** 5% solution = 2,3
***Vapor Pressure:*** Not applicable
***Vapor Density (air = 1):*** Not applicable
***Boiling Point:*** Not applicable
***Melting Point:*** 192°C; 378°F
***Flash Point:*** Not applicable
***Method:*** Not applicable
***Autoignition Temperature:*** Not available
***Flammability Limits:***
***Lower Explosion Limits:*** Not applicable
***Upper Explosion Limits:*** Not applicable
***Specific Gravity (water = 1):*** 1,65
***Evaporation Rate (water = 1):*** Not applicable
***Volatile Organic Compounds Content:*** Not applicable
***Partition Coefficient (n-octanol / water):*** Not applicable
***Solubility:***
***Water:*** Soluble
***Acid:*** Not determined
***Other:*** Soluble in alcohol, glycerol
***Metal Corrosivity:***
***Steel:*** Not determined
***Aluminum:*** Not determined

## 10. STABILITY / REACTIVITY

***Chemical Stability:*** Stable when stored under proper conditions.
***Conditions to Avoid:*** Excess moisture
***Reactivity / Incompatibility:*** Incompatible with: oxidizers alkalies copper iron
***Hazardous Decomposition:*** Heating to decomposition releases toxic fumes of carbon monoxide and carbon dioxide.
***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:*** Ascorbic acid - DNA damage human fibroblast 200 µmol/L; DNA damage human cell types 200 µmol/L; DNA inhibition human HeLa cell 2500 µmol/L

***Reproductive Effects Data:*** Ascorbic acid - Oral guinea pig TDLo 19500 mg/kg effects on newborn - biochemical and metabolic; Oral guinea pig TDLo 5800 mg/kg effects on newborn - stillbirth; Oral guinea pig TDLo 2471 mg/kg effects on newborn - growth statistics

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***Ingredient Toxicological Data:*** Ascorbic acid Oral rat LD50 = 11900 mg/kg

IARC Listed: No

## 12. ECOLOGICAL INFORMATION

***Product Ecological Information:*** No information available on this product.

***Ingredient Ecological Information:*** No ingredient information available.

## 13. DISPOSAL CONSIDERATIONS

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

## 14. TRANSPORT INFORMATION

***I.C.A.O.:***

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

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

***I.M.O.:***

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

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***I.M.O. Hazard Class:*** NA
***I.M.O. Subsidiary Risk:*** NA
***I.M.O. UN Number:*** NA
***I.M.O. Packing Group:*** NA

***A.D.R.:***

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

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

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

## 15. REGULATORY INFORMATION

***National Inventories:***

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

***EEC Number:*** Not applicable

***EEC LABEL COPY:***
***EU Symbols:*** 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. The Merck Index, 11th Ed. Rahway, New Jersey: Merck and Co., Inc., 1989. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984. Vendor Information. In-house information. Technical Judgment.
***R PHRASES:*** Not applicable
***Use of the substance/preparation:*** Laboratory Reagent
***Revision Summary:*** Updates in Section(s) 14,

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**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.**