



Be Right™

SAFETY DATA SHEET

Issue Date 14-04-2017

Revision Date 19-Sep-2022

Version 2.6

1. IDENTIFICATION

Product identifier

Product Name AluVer® 3 Aluminum Reagent

Other means of identification

Product Code(s) 1429099-CA

Safety data sheet number M00067

Recommended use of the chemical and restrictions on use

Recommended Use Water Analysis Determination of aluminum

Uses advised against No information available

Details of the supplier of the safety data sheet

Initial Supplier Identifier

Hach Sales & Service LP. 3020 Gore Road, London, Ontario N5V 4T7 Canada Tel: 1-800-665-7635

Manufacturer Address

Hach Company, P.O. Box 389, Loveland, CO 80539, USA, +1(970) 669-3050

Emergency telephone number

Emergency Telephone Chemtrec 1-800-424-9300
CANUTEC 613-992-4624

2. HAZARD IDENTIFICATION

Classification

| | |
|--|------------|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |
| Specific target organ toxicity (single exposure) | Category 3 |

Label elements

Signal word - Danger

Hazard statements

H315 - Causes skin irritation

H318 - Causes serious eye damage

H335 - May cause respiratory irritation

**Precautionary Statements**

P280 - Wear protective gloves, protective clothing, eye protection, and face protection

P302 + P352 - IF ON SKIN: Wash with plenty of water and soap

P332 + P313 - If skin irritation occurs: Get medical attention

P362 + P364 - Take off contaminated clothing and wash it before reuse

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P271 - Use only outdoors or in a well-ventilated area

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P405 - Store locked up

P501 - Dispose of contents/ container to an approved waste disposal plant

Unknown Acute Toxicity

0 % of the mixture consists of ingredient(s) of unknown toxicity.

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

Other Hazards Known

May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable

Mixture**Chemical Family**

Mixture.

Chemical nature

Mixture of inorganic compounds.

| Chemical name | Synonyms | CAS No | Percent Range | CBI Protection | Units | HMIRA # |
|------------------|--------------------------|----------|---------------|----------------|-------|---------|
| Butanedioic acid | No information available | 110-15-6 | 70 - 80% | - | g | - |

4. FIRST AID MEASURES

Description of first aid measures**General advice**

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Inhalation

Remove to fresh air. Get medical attention immediately if symptoms occur. IF exposed or concerned: Get medical advice/attention.

| | |
|---|--|
| Eye contact | Get immediate medical advice/attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. |
| Skin contact | Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists. |
| Ingestion | Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician. |
| Self-protection of the first aider | Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8). |

Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

| | |
|---|--|
| Suitable Extinguishing Media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Unsuitable Extinguishing Media | Caution: Use of water spray when fighting fire may be inefficient. |
| Specific hazards arising from the chemical | No information available. |
| Hazardous combustion products | Sulfur oxides. Carbon monoxide, Carbon dioxide. |
| Special protective equipment for fire-fighters | Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. |

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

| | |
|-----------------------------|--|
| WHMIS 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. |
| Personal precautions | Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. |
| Other Information | Refer to protective measures listed in Sections 7 and 8. |

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

| | |
|--|--|
| Methods for containment | Prevent further leakage or spillage if safe to do so. |
| Methods for cleaning up | Take up mechanically, placing in appropriate containers for disposal. |
| Prevention of secondary hazards | Clean contaminated objects and areas thoroughly observing environmental regulations. |

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Ensure adequate ventilation. Avoid breathing vapors or mists. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Legend See section 16 for terms and abbreviations

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hand Protection Wear suitable gloves. Impervious gloves. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374-1:2016.

Eye/face protection Tight sealing safety goggles.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing.

General Hygiene Considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product.

Environmental exposure controls Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.

Thermal hazards None under normal processing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | | | |
|-----------------------|------------|-----------------------|-------------------|
| Physical state | Solid | | |
| Appearance | powder | Color | red brown |
| Odor | Irritating | Odor threshold | No data available |

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|--|-----------------------------|-------------------------|
| Molecular weight | No data available | |
| pH | 3.85 | 10% @ 20°C |
| Melting point / freezing point | 145 °C / 293 °F | |
| Initial boiling point and boiling range | No data available | |
| Evaporation rate | Not applicable | |
| Vapor pressure | Not applicable | |
| Relative vapor density | No data available | |
| Specific gravity - VALUE 1 | 1.66 | |
| Partition coefficient | log K _{ow} ~ -0.99 | |
| Soil Organic Carbon-Water Partition Coefficient | log K _{oc} ~ 0.02 | |
| Autoignition temperature | No data available | |
| Decomposition temperature | No data available | |
| Dynamic viscosity | Not applicable | |
| Kinematic viscosity | Not applicable | |

Solubility(ies)**Water solubility**

| <u>Water solubility classification</u> | <u>Water solubility</u> | <u>Water Solubility Temperature</u> |
|--|-------------------------|-------------------------------------|
| Soluble | > 1000 mg/L | 25 °C / 77 °F |

Solubility in other solvents

| <u>Chemical Name</u> | <u>Solubility classification</u> | <u>Solubility</u> | <u>Solubility Temperature</u> |
|----------------------|----------------------------------|-------------------|-------------------------------|
| Acid | Soluble | > 1000 mg/L | 25 °C / 77 °F |

Other information**Metal Corrosivity**

| | |
|--------------------------------|-------------------------|
| Steel Corrosion Rate | 1.55 mm/yr / 0.06 in/yr |
| Aluminum Corrosion Rate | 0.03 mm/yr / 0 in/yr |

Volatile Organic Compounds (VOC) Content

Not applicable

| <u>Chemical name</u> | <u>CAS No</u> | <u>Volatile organic compounds (VOC) content</u> | <u>CAA (Clean Air Act)</u> |
|----------------------|---------------|---|----------------------------|
| Butanedioic acid | 110-15-6 | No data available | X |

Explosive properties

| | |
|-----------------------|-------------------|
| Upper explosion limit | No data available |
| Lower explosion limit | No data available |

Flammable properties

| | |
|-------------|----------------|
| Flash point | Not applicable |
|-------------|----------------|

Flammability Limit in Air

| | |
|---------------------------|-------------------|
| Upper flammability limit: | No data available |
| Lower flammability limit: | No data available |

Oxidizing properties

| |
|--------------------|
| No data available. |
|--------------------|

Bulk density

| |
|-------------------|
| No data available |
|-------------------|

10. STABILITY AND REACTIVITY

Reactivity

Not applicable.

Chemical stability

| | |
|------------------|---------------------------------|
| Stability | Stable under normal conditions. |
|------------------|---------------------------------|

Explosion data

| | |
|---|-------|
| Sensitivity to Mechanical Impact | None |
| Sensitivity to Static Discharge | None. |

Possibility of hazardous reactions

| | |
|---|-------------------------------|
| Possibility of Hazardous Reactions | None under normal processing. |
|---|-------------------------------|

Hazardous polymerization

None under normal processing.

Conditions to avoid

| | |
|----------------------------|---|
| Conditions to avoid | None known based on information supplied. |
|----------------------------|---|

Incompatible materials

| | |
|-------------------------------|--|
| Incompatible materials | Strong acids. Strong bases. Strong oxidizing agents. |
|-------------------------------|--|

Hazardous decomposition products

Heating to decomposition releases toxic fumes of carbon monoxide and carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure**Product Information**

| | |
|---------------------|---|
| Inhalation | May cause irritation of respiratory tract. |
| Eye contact | Severely irritating to eyes. Causes serious eye damage. May cause burns. May cause irreversible damage to eyes. |
| Skin contact | Causes skin irritation. |
| Ingestion | Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. |

Symptoms

Redness. Burning. May cause blindness. May cause redness and tearing of the eyes.

Acute toxicity

Based on available data, the classification criteria are not met

Mixture

No data available.

Ingredient Acute Toxicity Data

Test data reported below.

Oral Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|--|-------------------------|---------------|---------------|-----------------------|--|
| Butanedioic acid (70 - 80%) CAS#: 110-15-6 | Rat LD ₅₀ | 2260 mg/kg | None reported | None reported | Vendor SDS |

Unknown Acute Toxicity

0 % of the mixture consists of ingredient(s) of unknown toxicity.

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

Acute Toxicity Estimations (ATE)

The following values are calculated based on chapter 3.1 of the GHS document

| | |
|-------------------------------|--------------------------|
| ATEmix (oral) | 2,979.60 |
| ATEmix (dermal) | No information available |
| ATEmix (inhalation-dust/mist) | No information available |
| ATEmix (inhalation-vapor) | No information available |
| ATEmix (inhalation-gas) | No information available |

Skin corrosion/irritation

Classification based on data available for ingredients. Irritating to skin.

Product Skin Corrosion/Irritation Data

No data available.

Ingredient Skin Corrosion/Irritation Data

No data available.

Serious eye damage/eye irritation

Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Mixture

No data available.

Ingredient Eye Damage/Eye Irritation Data

Test data reported below.

| Chemical name | Test method | Species | Reported dose | Exposure time | Results | Key literature references and sources for data |
|--------------------------------|-------------------------|---------|---------------|---------------|-------------------|--|
| Butanedioic acid (70 - 80%) | Standard Draize Test | Rabbit | 0.750 mg | None reported | Corrosive to eyes | ECHA |

| | | | | | | |
|----------------|--|--|--|--|--|--|
| CAS#: 110-15-6 | | | | | | |
|----------------|--|--|--|--|--|--|

Respiratory or skin sensitization

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Sensitization Data

No data available.

STOT - single exposure

May cause respiratory irritation.

Mixture

No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data

No data available.

STOT - repeated exposure

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data

No data available.

Carcinogenicity

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Carcinogenicity Data

No data available.

| Chemical name | CAS No | ACGIH | IARC | NTP | OSHA |
|------------------|----------|-------|------|-----|------|
| Butanedioic acid | 110-15-6 | - | - | - | - |

Legend

| | |
|--|----------------|
| ACGIH (American Conference of Governmental Industrial Hygienists) | Does not apply |
| IARC (International Agency for Research on Cancer) | Does not apply |
| NTP (National Toxicology Program) | Does not apply |
| OSHA | Does not apply |

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Mixture invitro Data

No data available.

Substance invitro Data

Test data reported below.

| Chemical name | Test | Cell Strain | Reported dose | Exposure time | Results | Key literature references and sources for data |
|-----------------------------|----------------|------------------|---------------|---------------|---------------------------------------|--|
| Butanedioic acid (70 - 80%) | DNA inhibition | Human fibroblast | None reported | None reported | Positive test result for mutagenicity | RTECS |

| | | | | | | |
|----------------|--|--|--|--|--|--|
| CAS#: 110-15-6 | | | | | | |
|----------------|--|--|--|--|--|--|

Mixture in vivo Data

No data available.

Substance in vivo Data

No data available.

Reproductive toxicity

Based on available data, the classification criteria are not met.

Product Skin Corrosion/Irritation Data

No data available.

Ingredient Reproductive Toxicity Data

No data available.

Aspiration hazard

Based on available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Based on available data, the classification criteria are not met

Unknown Acute Toxicity

0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Product Ecological Data

Aquatic Acute Toxicity

No data available.

Aquatic Chronic Toxicity

No data available.

Ingredient Ecological Data

Aquatic Acute Toxicity

Test data reported below.

| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
|---|---------------|---------------|------------------|---------------|--|
| Butanedioic acid (70 - 80%) CAS#: 110-15-6 | 96 hours | None reported | LC ₅₀ | None reported | ECOSARS |

Crustacea

| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
|---|---------------|---------------|------------------|---------------|--|
| Butanedioic acid (70 - 80%) CAS#: 110-15-6 | 48 Hours | None reported | EC ₅₀ | 918830 mg/L | ECOSARS |

Algae

| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
|---|---------------|---------------|------------------|---------------|--|
| Butanedioic acid (70 - 80%) CAS#: 110-15-6 | 96 hours | None reported | EC ₅₀ | 254630 mg/L | ECOSARS |

Aquatic Chronic Toxicity

No data available.

Persistence and degradability**Product Biodegradability Data**

No data available.

Bioaccumulation

MATERIAL DOES NOT BIOACCUMULATE.

Product Bioaccumulation Data

No data available.

Partition coefficientlog K_{ow} ~ -0.99**Mobility****Soil Organic Carbon-Water Partition Coefficient**log K_{oc} ~ 0.02**Other adverse effects**

No information available

13. DISPOSAL CONSIDERATIONS**Waste treatment methods****Waste from residues/unused products**

Dispose of waste in accordance with environmental legislation. Dispose of in accordance with local regulations.

Contaminated packaging

Do not reuse empty containers.

14. TRANSPORT INFORMATION**Transport Canada**

Not regulated

TDG

Not regulated

IATA

Not regulated

IMDG

Not regulated

Note:

No special precautions necessary.

Additional information**15. REGULATORY INFORMATION****Regulatory information****National Inventories****DSL/NDSL**

Complies

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories**TSCA**

Complies

EINECS/ELINCS

Complies

ENCS

Does not comply

| | |
|----------------------------|-----------------|
| IECSC | Complies |
| KECL - Existing substances | Complies |
| PICCS | Does not comply |
| TCSI | Complies |
| AICS | Does not comply |
| NZIoC | Complies |

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TCSI - Taiwan Chemical Substances Inventory
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

Canada - CEPA - Mercury Containing Products

None

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

16. OTHER INFORMATION

Special Comments

None

NFPA and HMIS Classifications

| NFPA | Health hazards - 3 | Flammability - 0 | Instability - 0 | Physical and chemical properties - |
|------|--------------------|------------------|----------------------|------------------------------------|
| HMIS | Health hazards - 3 | Flammability - 0 | Physical hazards - 0 | Personal protection - X |

Key or legend to abbreviations and acronyms used in the safety data sheet

| | |
|---------|---|
| ACGIH | ACGIH (American Conference of Governmental Industrial Hygienists) |
| ATSDR | ATSDR (Agency for Toxic Substances and Disease Registry) |
| CCRIS | CCRIS (Chemical Carcinogenesis Research Information System) |
| CDC | CDC (Center for Disease Control) |
| CEPA | CEPA (Canadian Environmental Protection Agency) |
| CICAD | CICAD (Concise International Chemical Assessment Documents) |
| ECHA | ECHA (The European Chemicals Agency) |
| EEA | EEA (European Environment Agency) |
| EPA | EPA (Environmental Protection Agency) |
| ERMA | ERMA (New Zealand's Environmental Risk Management Authority) |
| ECOSARS | Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™ |
| FDA | FDA (Food & Drug Administration) |
| GESTIS | GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance) |
| HSDB | HSDB (Hazardous Substances Data Bank) |
| INERIS | INERIS (The National Industrial Environment and Risks Institute) |

| | |
|-------------|---|
| IPCS INCHEM | IPCS INCHEM (International Programme on Chemical Safety) |
| IUCLID | IUCLID (The International Uniform Chemical Information Database) |
| NITE | Japan National Institute of Technology and Evaluation (NITE) |
| NIH | NIH (National Institutes of Health) |
| NIOSH | NIOSH (National Institute for Occupational Safety and Health) |
| LOLI | LOLI (List of Lists - An International Chemical Regulatory Database) |
| NDF | no data |
| NICNAS | Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS) |
| NIOSH IDLH | Immediately Dangerous to Life or Health |
| OSHA | OSHA (Occupational Safety and Health Administration of the US Department of Labor) |
| PEEN | PEEN (Pan European Ecological Network) |
| RTECS | RTECS (Registry of Toxic Effects of Chemical Substances) |
| SIDS | SIDS (Screening Information Dataset) for High Volume Chemicals |
| SYKE | The Finnish Environment Institute (SYKE) |
| USDA | USDA (United States Department of Agriculture) |
| USDC | USDC (United States Department of Commerce) |
| WHO | WHO (World Health Organization) |

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

| | | | |
|------|---------------------------------|---------|---|
| TWA | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| MAC | Maximum Allowable Concentration | Ceiling | Ceiling Limit Value |
| X | Listed | Vacated | These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations. |
| SKN* | Skin designation | SKN+ | Skin sensitization |
| RSP+ | Respiratory sensitization | ** | Hazard Designation |
| C | Carcinogen | R | Reproductive toxicant |
| M | mutagen | | |

Prepared By Hach Product Compliance Department

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Revision Note
None

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations. THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. HACH COMPANY©2022

End of Safety Data Sheet