



SAFETY DATA SHEET

ANGUS CHEMICAL COMPANY

Product name : Calcium Chloride, Anhydrous,
Desiccant, ACS Grade

Issue Date: 11/02/2017
Print Date: 11/02/2017

ANGUS CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. PRODUCT AND COMPANY IDENTIFICATION

Product name Calcium Chloride, Anhydrous, Desiccant, ACS Grade

Manufacturer or supplier's details

Company name of supplier ANGUS CHEMICAL COMPANY

Address 1500 E. LAKE COOK ROAD
Buffalo Grove IL 60089-6553

Customer Information Number +1-847-808-3711

E-mail address NAR_CC@ANGUS.COM

Emergency telephone number **800-424-9300**

Recommended use of the chemical and restrictions on use

Recommended use For laboratory use.
Life sciences research chemical.
The ANGUS Chemical Company recommends that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact the Customer Information Group (see Section 1 of this data sheet).

2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) Category 4

Eye irritation Category 2A

GHS Label elements, including precautionary statements

Hazard pictograms



Signal word

Warning

Hazard statements

Harmful if swallowed.

Causes serious eye irritation.

Precautionary statements

Prevention:

Wash skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wear eye protection/ face protection.

Response:

IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.

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.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a substance.

Components

| Chemical Name | CAS-No. | Concentration (% w/w) |
|------------------|------------|-----------------------|
| Calcium chloride | 10043-52-4 | >= 96.0 - <= 100.0 % |

4. FIRST AID MEASURES

If inhaled

Move person to fresh air; if effects occur, consult a physician.

In case of skin contact

Wash off with plenty of water.

In case of eye contact

Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

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|---|---|
| | Suitable emergency eye wash facility should be immediately available. |
| If swallowed | Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth unless the person is fully conscious. |
| Most important symptoms and effects, both acute and delayed | Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information. |
| Protection of first-aiders | First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment. |
| Notes to physician | If burn is present, treat as any thermal burn, after decontamination. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. No specific antidote. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. |

5. FIREFIGHTING MEASURES

| | |
|---|---|
| Suitable extinguishing media | This material does not burn. If exposed to fire from another source, use suitable extinguishing agent for that fire. |
| Specific hazards during firefighting | Heat is generated when product mixes with water. |
| Hazardous combustion products | Not applicable |
| Further information | Keep people away. Isolate fire and deny unnecessary entry. This material does not burn. Fight fire for other material that is burning. Water should be applied in large quantities as fine spray. |
| Special protective equipment for firefighters | Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. |

For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

| | |
|---|--|
| Personal precautions, protective equipment and emergency procedures | Isolate area. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to section 7, Handling, for additional precautionary measures. |
| Environmental precautions | Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. |
| Methods and materials for containment and cleaning up | Contain spilled material if possible. Collect in suitable and properly labeled containers. Use care to minimize generation of airborne dust. See Section 13, Disposal Considerations, for additional information. |

7. HANDLING AND STORAGE

| | |
|-----------------------------|--|
| Advice on safe handling | Avoid contact with eyes, skin, and clothing. Good housekeeping and controlling of dusts are necessary for safe handling of product. Heat developed during diluting or dissolving is very high. Use cool water when diluting or dissolving (temperature less than 80°F, 27°C). Avoid generating and breathing dust. Do not swallow. Wash thoroughly after handling. Keep container closed. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION. |
| Conditions for safe storage | Store in a cool, dry place. Keep container closed when not in use. Avoid moisture. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures

Local exhaust ventilation may be necessary for some operations.
Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit

requirements or guidelines, general ventilation should be sufficient for most operations.

Personal protective equipment

Respiratory protection

Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process.
In dusty or misty atmospheres, use an approved particulate respirator.
The following should be effective types of air-purifying respirators:
Particulate filter.

Hand protection

Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Neoprene. Polyvinyl chloride ("PVC" or "vinyl"). Nitrile/butadiene rubber ("nitrile" or "NBR"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Eye protection

Use chemical goggles.

Skin and body protection

Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---------------------|--|
| Appearance | Solid. |
| Color | White |
| Odor | Odorless |
| Odor Threshold | Odorless |
| pH | 8 - 9 Method: Supplier (as aqueous solution) |
| Freezing point | No test data available |
| Melting point/range | 260 °C (500 °F) |

| | |
|--|--|
| | Method: Supplier |
| Boiling point/boiling range | > 1,600 °C (> 2,912 °F) Method: Supplier |
| Flash point | Test Type: closed cup No test data available |
| Evaporation rate | Not applicable to solids |
| Flammability (solid, gas) | No data available. |
| Upper explosion limit | No test data available |
| Lower explosion limit | No test data available |
| Vapor Pressure | No test data available |
| Relative Vapor Density (air = 1) | No test data available |
| Relative density | 2.15 (20 °C) Method: Supplier |
| Water solubility | Method: Supplier soluble in water |
| Partition coefficient: n-octanol/water | Partitioning from water to n-octanol is not applicable. No bioconcentration is expected because of the relatively high water solubility. |
| Auto-ignition temperature | No test data available |
| Decomposition temperature | No test data available |
| Viscosity Viscosity, kinematic | Not applicable |
| Explosive properties | No data available. |
| Oxidizing properties | No data available. |
| Molecular weight | 110.98 g/mol Method: Supplier |
| Hygroscopic | yes |

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

| | |
|------------------------------------|---|
| Reactivity | Stable under recommended storage conditions. |
| Chemical stability | Stable. Hygroscopic |
| Possibility of hazardous reactions | Polymerization will not occur. |
| Conditions to avoid | Avoid moisture. |
| Incompatible materials | Corrosive when wet. Heat is generated when mixed with water. Spattering and boiling can occur. Avoid contact with: Sulfuric acid. Water. Bromine trifluoride. Vinyl methyl ether. Mixtures of lime and boric acid. Barium chloride. 2-Furan percarboxylic acid. Flammable hydrogen may be generated from contact with metals such as: Zinc. Sodium. |
| Hazardous decomposition products | Decomposition products depend upon temperature, air supply and the presence of other materials. Toxic gases are released during decomposition. Emits chlorine fumes when heated to decomposition. |

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Acute toxicity

Product:

| | |
|---------------------------|--|
| Acute oral toxicity | Remarks: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Swallowing may result in gastrointestinal irritation or ulceration. LD50 (Rat): 900 - 2,100 mg/kg |
| Acute inhalation toxicity | Remarks: Dust may cause irritation to upper respiratory tract (nose and throat). Vapors are unlikely due to physical properties. LC50 (Rat): > 6.25 mg/l Exposure time: 4 h Test atmosphere: dust/mist |

Remarks: Particle size information not available.

Acute dermal toxicity

Remarks: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

LD50
(Rabbit): > 5,000 mg/kg

Skin corrosion/irritation

Product:

Result: No skin irritation

Remarks: Prolonged contact may cause skin irritation with local redness.

May cause more severe response if skin is abraded (scratched or cut).

May cause more severe response on covered skin (under clothing, gloves).

May cause more severe response if skin is damp.

Brief contact is essentially nonirritating to skin.

Repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.

Remarks: Not classified as corrosive to the skin according to DOT guidelines.

Serious eye damage/eye irritation

Product:

Result: Eye irritation

Remarks: May cause severe eye irritation.

May cause severe corneal injury.

Effects may be slow to heal.

Respiratory or skin sensitization

Product:

Remarks: For skin sensitization:

No relevant information found.

Remarks: For respiratory sensitization:

No relevant data found.

Carcinogenicity

Product:

No relevant data found.

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen

by NTP.

Teratogenicity

Product

Did not cause birth defects or any other fetal effects in laboratory animals.

Mutagenicity

Product

In vitro genetic toxicity studies were negative.

Reproductive toxicity

Product:

No relevant data found.

STOT - single exposure

Product:

Assessment: Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Repeated dose toxicity

Product:

Remarks: No relevant data found.

Aspiration toxicity

Product:

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish

Remarks: Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50 (Lepomis macrochirus (Bluegill sunfish)): 10,650 mg/l
Exposure time: 96.0 h

LC50 (Gambusia affinis (Mosquito fish)): 13,400 mg/l
Exposure time: 96.0 h

Toxicity to daphnia and other aquatic invertebrates

LC50 (Daphnia magna (Water flea)): 759 - 3,005 mg/l
Exposure time: 48.0 h

Toxicity to bacteria EC50 (activated sludge): > 1,000 mg/l
End point: Respiration rates.

Persistence and degradability

Product:

Biodegradability Remarks: Biodegradation is not applicable.

Bioaccumulative potential

Product:

Partition coefficient: n-octanol/water Remarks: Partitioning from water to n-octanol is not applicable.
No bioconcentration is expected because of the relatively high water solubility.

Mobility in soil

Product:

Distribution among environmental compartments Remarks: No relevant data found.

Other adverse effects

Product:

Ozone-Depletion Potential Regulation: 40 CFR Protection of Environment; Part 82
Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER.
All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations.
Regulations may vary in different locations.
Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.
AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL.
THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information.
FOR UNUSED & UNCONTAMINATED PRODUCT, the

preferred options include sending to a licensed, permitted:
Incinerator or other thermal destruction device.
Landfill.

14. TRANSPORT INFORMATION

International Regulation

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR (DOT) – NON BULK

Not regulated as a dangerous good

49 CFR (DOT) - BULK

Not regulated as a dangerous good

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazards

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards

Acute Health Hazard

SARA 302 No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

The following chemicals are listed because of the additional requirements of Pennsylvania law:

| Cas No. | Component |
|----------------|------------------|
| 10043-52-4 | Calcium chloride |

New Jersey Right To Know

The following chemicals are listed because of the additional requirements of New Jersey law:

| Cas No. | Component |
|----------------|------------------|
| 10043-52-4 | Calcium chloride |

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

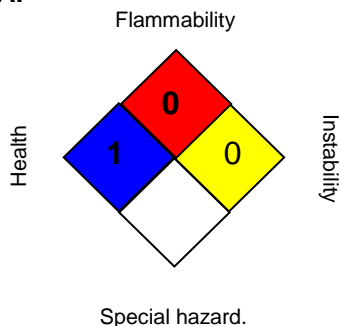
United States TSCA Inventory

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

| | |
|-----------------|---|
| HEALTH | 2 |
| FLAMMABILITY | 1 |
| PHYSICAL HAZARD | 0 |

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date 11/02/2017
Version 0.0

Identification Number: 000040000124

US / EN

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Full text of other abbreviations

(Q)SAR - (Quantitative) Structure Activity Relationship; ASTM - American Society for the Testing of Materials; bw - Body weight; DIN - Standard of the German Institute for Standardisation; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; IARC - International Agency for Research on Cancer; IATA - International Air

Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISO - International Organisation for Standardization; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative; DSL - Domestic Substances List (Canada); KECI - Korea Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); AICS - Australian Inventory of Chemical Substances; IECSC - Inventory of Existing Chemical Substances in China; ENCS - Existing and New Chemical Substances (Japan); ISHL - Industrial Safety and Health Law (Japan); PICCS - Philippines Inventory of Chemicals and Chemical Substances; NZIoC - New Zealand Inventory of Chemicals; TCSI - Taiwan Chemical Substance Inventory; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; DOT - Department of Transportation; EHS - Extremely Hazardous Substance; HMIS - Hazardous Materials Identification System; MSHA - Mine Safety and Health Administration; NFPA - National Fire Protection Association; RCRA - Resource Conservation and Recovery Act; RQ - Reportable Quantity; SARA - Superfund Amendments and Reauthorization Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; GLP - Good Laboratory Practice; ERG - Emergency Response Guide; NTP - National Toxicology Program; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods