

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Identifier:** (5N) 99.999% Calcium Hydride

**Product Code:** CA-HID-05

**CAS Number:** 7789-78-8

**Relevant identified uses of the substance:** Scientific research and development

Supplier details:

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351  
Emergency telephone number:  
+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Substances/mixtures which, in contact with water, emit  
flammable gases

Category 1

Skin Corrosion/irritation Category 2

Serious Eye Damage/Eye Irritation Category 2



Label Elements

Signal Word

Danger

Hazard Statements

In contact with water releases flammable gases which may ignite spontaneously

Causes skin irritation

Causes serious eye irritation

Precautionary Statements

Prevention

Keep away from any possible contact with water, because of violent reaction and possible flash fire  
Handle under inert gas. Protect from moisture  
Wear protective gloves/protective clothing/eye protection/face protection  
Skin  
Brush off loose particles from skin. Immerse in cool water/wrap with wet bandages  
Fire  
In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction  
Storage  
Store in a dry place. Store in a closed container  
Disposal  
Dispose of contents/container to an approved waste disposal plant  
Hazards not otherwise classified (HNOC)  
May form combustible dust concentrations in air

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### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component CAS-No Weight %  
Calcium hydride (CaH<sub>2</sub>) 7789-78-8 93

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### **SECTION 4. FIRST AID MEASURES**

Eye Contact Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required. Discard contaminated shoes.  
Inhalation Remove from exposure, lie down. Move to fresh air. If not breathing, give artificial respiration. Immediate medical attention is required.  
Ingestion Do not induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. Call a physician immediately.  
Most important symptoms/effects No data available.  
Notes to Physician Treat symptomatically

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### **SECTION 5. FIREFIGHTING MEASURES**

Suitable Extinguishing Media Flooding quantities of water. Dry chemical, soda ash, lime or sand.  
Unsuitable Extinguishing Media No data available  
Flash Point No data available  
Method - No data available  
Autoignition Temperature 300 °C / 572 °F  
Explosion Limits  
Upper No data available  
Lower No data available  
Sensitivity to Mechanical Impact No data available  
Sensitivity to Static Discharge No data available  
Specific Hazards Arising from the Chemical  
Water reactive. Produce flammable gases on contact with water.  
Hazardous Combustion Products  
Hydrogen  
Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health

2

Flammability

3

Instability

2

Physical hazards

W

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions** Use personal protective equipment. Ensure adequate ventilation.

**Environmental Precautions** See Section 12 for additional ecological information.

**Methods for Containment and Clean**

**Up**

Avoid dust formation. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Sweep up or vacuum up spillage and collect in suitable container for disposal. Do not let this chemical enter the environment. Do not expose spill to water.

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## SECTION 7. HANDLING AND STORAGE

**Handling** Use only in area provided with appropriate exhaust ventilation. Avoid contact with skin and eyes. Do not breathe dust. Minimize dust generation and accumulation. Do not allow contact with water.

**Storage** Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat and sources of ignition. Never allow product to get in contact with water during storage. Keep under nitrogen.

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Guidelines** This product does not contain any known or suspected reproductive hazards

**Engineering Measures** Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations

and safety showers are close to the workstation location.

**Personal Protective Equipment**

**Eye/face Protection** Wear appropriate protective eyeglasses or chemical safety goggles as described by

OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard

EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Solid  
Appearance Grey  
Odor Odorless  
Odor Threshold No data available  
pH No data available  
Melting Point/Range 675 °C / 1247 °F  
Boiling Point/Range No data available  
Flash Point No data available  
Evaporation Rate N/A  
Flammability (solid,gas) No data available  
Flammability or explosive limits  
Upper No data available  
Lower No data available  
Vapor Pressure No data available  
Vapor Density N/A  
Specific Gravity 1.900  
Solubility Reacts with water  
Partition coefficient; n-octanol/water No data available  
Autoignition Temperature 300 °C / 572 °F  
Decomposition Temperature No data available  
Viscosity N/A  
Molecular Formula  $\text{CaH}_2$   
Molecular Weight 42.09

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## SECTION 10. STABILITY AND REACTIVITY

Reactive Hazard Yes  
Stability Stable under normal conditions. Water reactive.  
Conditions to Avoid Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition.  
Protect from water. Excess heat. Incompatible products. Exposure to moist air or water.  
Incompatible Materials Acids, Water, Strong acids, Alcohols, Halogens, Acid anhydrides, Reducing agents  
Hazardous Decomposition Products Hydrogen  
Hazardous Polymerization Hazardous polymerization does not occur.  
Hazardous Reactions None under normal processing

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## SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity  
Product Information No acute toxicity information is available for this product  
Component Information  
Toxicologically Synergistic  
Products  
No data available  
Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Irritating to eyes and skin  
Sensitization No data available  
Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.  
Component CAS-No IARC NTP ACGIH OSHA Mexico  
Calcium hydride  
(CaH<sub>2</sub>)  
7789-78-8 Not listed Not listed Not listed Not listed Not listed  
Mutagenic Effects No data available  
Reproductive Effects No data available.  
Developmental Effects No data available.  
Teratogenicity No data available.  
STOT - single exposure None known  
STOT - repeated exposure None known  
Aspiration hazard No data available  
Symptoms / effects, both acute and delayed  
No data available  
Endocrine Disruptor Information No data available  
Other Adverse Effects The toxicological properties have not been fully investigated

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## SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity  
Do not empty into drains. Reacts with water so no ecotoxicity data for the substance is available.  
Persistence and Degradability Persistence is unlikely based on information available.  
Bioaccumulation/ Accumulation No data available.  
Mobility Is not likely mobile in the environment

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## SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

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## SECTION 14. TRANSPORT INFORMATION

DOT  
UN-No UN1404  
Proper Shipping Name CALCIUM HYDRIDE  
Hazard Class 4.3  
Packing Group I  
TDG  
UN-No UN1404  
Proper Shipping Name CALCIUM HYDRIDE  
Hazard Class 4.3  
Packing Group I  
IATA  
UN-No UN1404

Proper Shipping Name CALCIUM HYDRIDE  
Hazard Class 4.3  
Packing Group I  
IMDG/IMO  
UN-No UN1404  
Proper Shipping Name CALCIUM HYDRIDE  
Hazard Class 4.3  
Packing Group I

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## SECTION 15. REGULATORY INFORMATION

### International Inventories

Component TSCA DSL NDSL EINECS ELINCS NLP PICCS ENCS AICS IECSC KECL

Calcium hydride (CaH<sub>2</sub>) X X - 232-189-2 - X X X X X

### Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base

Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

### U.S. Federal Regulations

TSCA 12(b) N/A

SARA 313 N/A

SARA 311/312 Hazard Categories

Acute Health Hazard Yes

Chronic Health Hazard No

Fire Hazard No

Sudden Release of Pressure Hazard No

Reactive Hazard Yes

CWA (Clean Water Act) N/A

Clean Air Act N/A

OSHA Occupational Safety and Health Administration  
N/A

CERCLA

N/A

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know

Regulations

Component Massachusetts New Jersey Pennsylvania Illinois Rhode Island

Calcium hydride (CaH<sub>2</sub>) - X - - -

U.S. Department of Transportation

Reportable Quantity (RQ): N

DOT Marine Pollutant N

DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No data available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and

the MSDS contains all the information required by the CPR

WHMIS Hazard Class B6 Reactive flammable material

D2B Toxic materials

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## 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.