

# SAFETY DATA SHEET

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Revision Number 8

This safety data sheet was created pursuant to the requirements of: Canada WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR) - SOR 2022-272

## 1. Identification

**Product Name** Calcium hydride

**Cat No. :** AC196790000; AC196790050; AC196791000; AC196795000

**CAS-No** 7789-78-8  
**Synonyms** Calcium Dihydride

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

### Details of the supplier of the safety data sheet

#### Company

**Importer/Distributor**  
Fisher Scientific  
112 Colonnade Road,  
Ottawa, ON K2E 7L6,  
Canada  
Tel: 1-800-234-7437

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

**Manufacturer**  
Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

#### **Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

## 2. Hazard(s) identification

### Classification

#### **WHMIS 2015 Classification**

This product is hazardous in accordance with the Canada Hazardous Products Act (HPA) and Hazardous Products Regulation (HPR), as amended (SOR/2022-272)

<b>Substances/mixtures which, in contact with water, emit flammable gases</b>	Category 1	Gas(es) = Hydrogen
<b>Skin Corrosion/Irritation</b>	Category 2	
<b>Serious Eye Damage/Eye Irritation</b>	Category 2	
<b>Physical Hazards Not Otherwise Classified</b>	Category 1	
Reacts violently with water		

### 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  
 Reacts violently with water

**Precautionary Statements****Prevention**

Do not allow contact with water  
 Keep container tightly closed  
 Wash face, hands and any exposed skin thoroughly after handling  
 Wear protective gloves/protective clothing/eye protection/face protection  
 Handle and store contents under inert gas. Protect from moisture

**Response**

IF ON SKIN: Wash with plenty of soap and water  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 If skin irritation occurs: Get medical advice/attention  
 If eye irritation persists: Get medical advice/attention  
 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish  
 Take off contaminated clothing and wash it before reuse  
 IF ON SKIN: Brush off loose particles from skin. Immerse in cool water

**Storage**

Store in a dry place. Store in a closed container

**Disposal**

Dispose of contents/container to an approved waste disposal plant

### 3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Calcium hydride (CaH <sub>2</sub> )	7789-78-8	<100

### 4. First-aid measures

<b>General Advice</b>	If symptoms persist, call a physician.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
<b>Inhalation</b>	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.
<b>Most important symptoms/effects Notes to Physician</b>	None reasonably foreseeable. Treat symptomatically

## 5. Fire-fighting measures

**Suitable Extinguishing Media** Dry chemical, soda ash, lime or sand.

**Unsuitable Extinguishing Media** No information available

**Flash Point Method -** No information available  
No information available

**Autoignition Temperature** 300 °C / 572 °F

### Explosion Limits

**Upper** No data available  
**Lower** No data available  
**Sensitivity to Mechanical Impact** No information available  
**Sensitivity to Static Discharge** No information available

### Specific Hazards Arising from the Chemical

Water reactive. Produce flammable gases on contact with water. Reacts violently 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

## 6. Accidental release measures

**Personal Precautions** Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation.

**Environmental Precautions** Should not be released into the environment.

**Methods for Containment and Clean Up** Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal. Do not expose spill to water.

## 7. Handling and storage

**Handling** Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation. Do not allow contact with water. Handle under an inert atmosphere.

**Storage.** Keep away from heat, sparks and flame. Keep from any possible contact with water. Store under an inert atmosphere. Keep container tightly closed in a dry and well-ventilated place. Air sensitive. Store contents under argon. Keep away from water or moist air. Incompatible Materials. Acids. Water. Strong acids. Alcohols. Halogens. Acid anhydrides. Reducing Agent. Ammonia.

## 8. Exposure controls / personal protection

**Exposure Guidelines** This product does not contain any hazardous materials with occupational exposure limit established by the region specific regulatory bodies.

**Engineering Measures**

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

**Personal protective equipment****Eye Protection**

Goggles

**Hand Protection**

Protective gloves

Glove material	Breakthrough time	Glove thickness	Glove comments
Natural rubber	See manufacturers	-	Splash protection only
Nitrile rubber	recommendations		
Neoprene			
PVC			

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

**Respiratory Protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. 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.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

**Recommended Filter type:** Particulates filter conforming to EN 143

When RPE is used a face piece Fit Test should be conducted

**Environmental exposure controls**

No information available.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

## 9. Physical and chemical properties

**Appearance****Physical State**

Solid

**Color**

Grey

**Odor**

Odorless

**Odor Threshold**

No information available

**Property****Values****Remarks****Method****Melting Point/Range**

675 °C / 1247 °F

**Softening Point**

No data available

**Boiling Point/Range**

No information available

**Flash Point**

No information available

**Method -** No information available**Flammability (liquid)**

Not applicable

Solid

**Flammability (solid,gas)**

No information available

**Explosion Limits**

No data available

<b>Autoignition Temperature</b>	300 °C / 572 °F	
<b>Decomposition Temperature</b>	No data available	
<b>pH</b>	No information available	
<b>Viscosity</b>	Not applicable	Solid
<b>Water Solubility</b>	Reacts with water	
<b>Solubility in other solvents</b>	No information available	
<b>Partition Coefficient (n-octanol/water)</b>		
<b>Vapor Pressure</b>	No data available	
<b>Density / Specific Gravity</b>		
<b>Bulk Density</b>	No data available	
<b>Vapor Density</b>	Not applicable	Solid
<b>Particle characteristics</b>	No data available	
<b>Other Information</b>		
<b>Molecular Formula</b>	Ca H <sub>2</sub>	
<b>Molecular Weight</b>	42.09	
<b>Substances/mixtures which, in contact with water, emit flammable gases</b>	Emitted gas ignites spontaneously	Gas(es) = Hydrogen
<b>Evaporation Rate</b>	Not applicable	- Solid

## 10. Stability and reactivity

<b>Reactive Hazard</b>	Yes
<b>Stability</b>	Water reactive. Air sensitive.
<b>Conditions to Avoid</b>	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. Exposure to moisture.
<b>Incompatible Materials</b>	Acids, Water, Strong acids, Alcohols, Halogens, Acid anhydrides, Reducing Agent, Ammonia
<b>Hazardous Decomposition Products</b>	Hydrogen
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	Reacts violently with water.

## 11. Toxicological information

### Information on expected route of exposure

<b>Inhalation</b>	Not an expected route of exposure.
<b>Ingestion</b>	May be harmful if swallowed.
<b>Eyes</b>	Avoid contact with eyes. Irritating to eyes. Risk of serious damage to eyes.
<b>Skin</b>	Avoid contact with skin. May cause irritation. Contact with moist skin may cause skin burns.

### Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Calcium hydride (CaH <sub>2</sub> )	>2000 mg/kg (Rat)	-	-

**Toxicologically Synergistic Products** No information available

**(b) skin corrosion/irritation;** Category 2

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;

Respiratory

Based on available data, the classification criteria are not met

Skin

Based on available data, the classification criteria are not met

(e) germ cell mutagenicity;

Based on available data, the classification criteria are not met

(f) carcinogenicity;

Based on available data, the classification criteria are not met

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

(g) reproductive toxicity;

Based on available data, the classification criteria are not met

(h) STOT-single exposure;

Based on available data, the classification criteria are not met

(i) STOT-repeated exposure;

Based on available data, the classification criteria are not met

Target Organs

None known.

(j) aspiration hazard;

Not applicable  
Solid

**Symptoms / effects, both acute and delayed**

No information available.

**Other Adverse Effects**

The toxicological properties have not been fully investigated.

**Endocrine Disrupting Properties**

This product does not contain any known or suspected endocrine disruptors.

## 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 information available.

**Mobility**

Is not likely mobile in the environment.

## 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.

## 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

## 15. Regulatory information

**International Inventories**

Component	CAS-No	DSL	NDSL	TSCA	TSCA Inventory notification - Active-Inactive	EINECS	ELINCS	NLP
Calcium hydride (CaH <sub>2</sub> )	7789-78-8	X	-	X	ACTIVE	232-189-2	-	-

Component	CAS-No	IECSC	KECL	ENCS	ISHL	TCSI	AICS	NZIoC	PICCS
Calcium hydride (CaH <sub>2</sub> )	7789-78-8	X	KE-04553	X	X	X	X	X	X

**Legend:**

X - Listed '-' - Not listed

**KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances**IECSC** - Chinese Inventory of Existing Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances**ENCS** - Japanese Existing and New Chemical Substances**AICS** - Australian Inventory of Chemical Substances**PICCS** - Philippines Inventory of Chemicals and Chemical Substances**Canada**

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and its amendments and meets the requirements of the HPR (Paragraph 13(1)(a) of the revised Hazardous Products Act (HPA)).

**Other International Regulations****Authorisation/Restrictions according to EU REACH**

Not applicable

**Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?**

Not applicable

## Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS-No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Calcium hydride (CaH <sub>2</sub> )	7789-78-8	Not applicable	Not applicable	Not applicable	Not applicable

Component	CAS-No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Calcium hydride (CaH <sub>2</sub> )	7789-78-8	Not applicable	Not applicable	Not applicable	Not applicable

## 16. Other information

<b>Prepared By</b>	Product stewardship (Regulatory Affairs) Thermo Fisher Scientific email - begel.sdsdesk@thermofisher.com
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<b>Revision Date</b>	19-December-2025
<b>Print Date</b>	19-December-2025
<b>Revision Summary</b>	This document has been updated to comply with the requirements of WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR) to align with the Globally Harmonised System (GHS) (V7/8) for the Classification and Labelling of Chemicals.

### Disclaimer

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

**End of SDS**