

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name SMCA (Granules or Powder)

Chemical Name Sodium Monochloroacetate

Synonym(s) Chloroacetic acid, sodium salt

Product Use Chemical intermediate

Manufacturer / Supplier Akzo Nobel Functional Chemicals LLC
PO Box 40350
Denver, CO, USA 80204-0350
Tel. 1-303-937-7482

Emergency Telephone Numbers

CHEMICAL CHEMTREC (800) 424-9300 (Toll-free in the U.S., Canada, and the U.S. Virgin Islands)
EMERGENCY (24-hr) (703) 527-3887 (For calls originating elsewhere / collect calls are accepted)

(Spill, Leak, Fire, Exposure or Accident) CANUTEC (613) 996-6666
(Canada)

MEDICAL / HANDLING (914) 693-6946 [AkzoNobel – USA]
EMERGENCIES

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

This material is hazardous by the OSHA Hazard Communication Standard (29CFR 1910.1200)

DANGER

- **Harmful if swallowed.**
- **Irritating to skin and eyes.**
- **May cause irritation to the upper respiratory tract.**
- **Very toxic to aquatic life. Avoid release to the environment.**

Appearance and odor White granules or powder with an acidic odor.

POTENTIAL HEALTH EFFECTS [See Section 11 for additional information]

Primary Route(s) of Exposure Eye contact, skin contact and inhalation

Acute Exposure

Inhalation

Inhalation of SMCA powder or dust may be irritating to the respiratory tract and cause symptoms of bronchitis.

Skin Contact

Contact causes moderate irritation.

Eye Contact

Eye contact causes moderate to severe irritation.

Ingestion

This product is toxic by ingestion. May cause irritation of the mouth, throat, and gastrointestinal system.

Carcinogenicity

IARC, NTP, ACGIH and OSHA do not classify this material as a carcinogen or suspect carcinogen.

Medical conditions aggravated by exposure

Persons with pre-existing skin and/or respiratory disease may be at increased risk if exposed to this material.

POTENTIAL ENVIRONMENTAL EFFECTS [See Section 12 for additional information]

Aquatic Toxicity This product is very toxic to aquatic life, based on available data.

3. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENTS	CAS Number	% (w/w)
Sodium Monochloroacetate	3926-62-3	98.0

4. FIRST AID MEASURES

General Information	Always seek medical attention. Do not delay treatment of exposed individuals.
Skin Contact	Remove all contaminated clothing, shoes and equipment. Under a safety shower, wash skin thoroughly with soap and large amounts of running water for 15 to 20 minutes. Launder contaminated clothing before re-use. Get medical attention immediately.
Inhalation	Remove victim to fresh air. If not breathing, clear victim's airway and start artificial respiration. If victim is breathing, supplemental oxygen may be given from a demand-type or continuous-flow inhaler, preferably with a physician's advice. Get medical attention immediately.
Ingestion	Call 911 or the nearest Poison Control Center to request emergency medical assistance. The emergency medical services responders should transport the victim to a hospital as soon as possible with a copy of this Material Safety Data Sheet. If victim is conscious, rinse mouth, and give water to drink. If vomiting occurs, keep head below hips to reduce risk of aspiration. Give fluids again. Never give anything by mouth to a person who is unconscious or convulsing.
Eye Contact	Immediately flush eyes with plenty of water for At least 15 minutes. If easy to do, remove contact lenses, if worn. Take care not to contaminate the victim's healthy eye. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eye and lids with water. DO NOT let victim rub eye(s). Do not attempt to neutralize with chemical agents. Get medical attention immediately. Continue flushing for an additional 15 minutes if a physician is not immediately available.
Note to Physician	Attending physician should treat exposed patients symptomatically. Systemic absorption of SMCA may cause a severe, refractory lactic acidosis. In case of ingestion, evacuate stomach contents through a stomach tube, preferably introduced under endoscopic control. Timely administration of sodium dichloroacetate (SDCA) may be life saving in case of serious monochloroacetate intoxication. SDCA is not approved for medical use in the United States. Treatment is symptomatic and supportive without it. For a treatment protocol, contact the nearest Poison Control Center or Akzo Nobel Emergency Center in the Netherlands (Tel. +31 570 67 92 11) and ask for IPCS INTOX PIM 352. Alternatively, you can consult the online database at: http://www.inchem.org/documents/pims/chemical/pim352.htm .

5. FIRE FIGHTING MEASURES

Flammable Properties	Not flammable or combustible
Extinguishing Media	This product is considered non-combustible. If involved in a fire, extinguishing agents suitable for the surrounding materials should be used. Use water spray, dry chemical powder, carbon dioxide or alcohol resistant foam extinguishing agents. Water used to extinguish a fire should not be allowed to enter public water systems in case of SMCA leakage.
Fire Fighting Procedures	Products of combustion are irritating to the respiratory tract and may cause breathing difficulty and pulmonary edema. Symptoms may be delayed several hours or longer depending upon the extent of the exposure. As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Evacuate all non-essential personnel from the fire area. Fire fighters should wear full-face, self-contained breathing apparatus and impervious protective clothing. If possible, move containers from the fire area. If not leaking, keep fire exposed containers cool with a water fog or spray to prevent rupture due to excessive heat. High pressure water may spread product from broken containers increasing contamination or fire hazard. Contaminated buildings, areas and equipment must not be used until they are properly decontaminated. Dike fire control water for later disposal. Do not allow contaminated water to enter waterways.

5. FIRE FIGHTING MEASURES (CONTINUED)

Fire & Explosion Hazards	Not considered a flammable or combustible material. However, under fire conditions, this product may support combustion and decompose to give off toxic and corrosive combustion materials. In case of fire and/or explosion, do not breathe fumes.
Hazardous Combustion Products	Thermal decomposition produces very toxic substances including carbon monoxide and hydrochloric acid.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	All personnel involved in spill cleanup should avoid skin and eye contact by wearing appropriate personal protective equipment (See Section 8). Do not breathe dust.
Methods for containment	Isolate spill area and restrict non-essential personnel from area. Stop source of spill if this is possible without being exposed.
Environmental precautions	Do not allow product to enter drains or water courses. If product contaminates public waters, inform appropriate authorities in accordance with local regulations.
Methods for clean-up	Sweep up spilled solid material, being careful not to create dust. Return sweepings to stock or, if contaminated, place into a chemical waste container for disposal according to regulations. Flush spill area with large amount of water and dike for later disposal. Avoid release to the environment.
Other information	See also Section 13 for disposal information.

7. HANDLING AND STORAGE

Handling	Avoid inhalation and prolonged and/or repeated skin and eye contact. Avoid dust generation. Use only with adequate ventilation. Wash thoroughly after handling. Do not drink, eat or smoke in application areas. Emptied containers may retain residues. Follow all warnings and precautions even after the container is emptied.
Storage	Store away from foodstuffs or animal feed. Containers should be kept tightly closed and stored in a cool, dry (with relative humidity at less than 40%), well-ventilated area away from incompatible materials such as bases and amines. Exercise due caution to prevent damage to or leakage from the container. Store in polyethylene, glass-lined, PVC or 316L stainless steel equipment. Do not store in direct sunlight and keep away from heat sources.
Recommended Storage Temperature	Store in original packing and in a cool and dry place at ambient temperature (with relative humidity at less than 40%).
General Comments	Keep containers tightly closed until ready for use. Do not re-use empty containers. Prevent overheating (see section 5).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines	<p>There are no exposure limits applicable to this product. Exposure to this product should be controlled below the following limits:</p> <ul style="list-style-type: none">• Particulates Not Otherwise Classified (PNOC)" : OSHA – 15 mg/m³ (total dust) ; 5 mg/m³ (respirable fraction)• Related product Monochloroacetic acid (MCA) ACGIH – TWA : 2 mg/m³ or 0.5 ppm IFV [measured as Inhalable Fraction and Vapor] / [Skin Notation ... Danger of cutaneous absorption] <p>ACGIH = American Conference of Governmental Industrial Hygienists OSHA = Occupational Safety & Health Administration TWA = Time-Weighted Average exposure concentration for a conventional 8-hour workday. [Ref: ACGIH Guide to Occupational Exposure Values, 2010 Edition]</p>
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8. EXPOSURE CONTROLS / PERSONAL PROTECTION (CONTINUED)

Engineering Controls & Ventilation Sufficient natural or mechanical ventilation must be provided to keep concentrations of dust below applicable exposure limits and to help minimize exposures. Where ventilation is inadequate based on conditions of use, personnel protective equipment is needed (see next paragraph for full details). If use conditions generate airborne particles, the material should be handled in an open (e.g. outdoor) or well ventilated area.

Personal Protective Equipment (PPE)

Skin Skin contact with the product must be prevented through the use of suitable (acid-resistant) protective clothing, gloves and footwear selected according to use condition exposure potential. Protective equipment made of polyvinyl chloride (PVC) or neoprene is recommended. PVC gloves [manufactured by Ansell, / type Snorkel] have a breakthrough time of 480 minutes at 20°C/68°F. Discard gloves after SMCA contact.

Eyes/Face Eye contact with this material must be prevented through the use of chemical safety splash goggles or a face shield selected with regard to use condition exposure potential.

Respiratory If use conditions generate dust and adequate ventilation (e.g., outdoor or well-ventilated area) is not available, use a NIOSH-approved organic vapor/acid gas respirator with dust, mist and fume filter to reduce potential for inhalation exposure. Where exposure potential necessitates a higher level of protection, use a NIOSH-approved, positive-pressure/pressure-demand, air-supplied respirator. When using respirator cartridges or canisters, they must be changed frequently (following each use or at the end of the work shift) to assure breakthrough exposure does not occur.

Hygiene Measures Safety showers, with quick opening valves, which stay open, and eyewash fountains, or other means of washing the eyes with a gentle flow of cool to tepid tap water, should be readily available in all areas where this material is handled or stored. Water should be supplied through insulated and heat-traced lines to prevent freeze-up in cold weather. Long sleeved clothing may be used to minimize skin contact. All food and smoking materials should be kept in a separate area away from the storage/use location. Eating, drinking and smoking should be prohibited in areas where there is a potential for significant exposure to this material. Before eating, drinking and smoking, hands and face should be thoroughly washed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	granules or powder
Color	white
Odor	acidic odor
Boiling Point	not applicable
Bulk Density	750 - 900 kg/m ³
Density	1710 kg/m ³ for granules & 1850 kg/m ³ for powder (at 77°F / 25°C)
Evaporation Rate (Butyl Acetate=1)	not determined
Melting Point	302°F (150°C)
Odor Threshold	not determined
pH	5 – 9 (at 50 g/L water, 68°F / 20°C)
Partition Coefficient (n-octanol/water)	Log P _{ow} < 0
Solubility in water	820 g/l (at 68°F / 20°C) ; 1100 g/L (at 176°F / 80°C)
Solubility in other solvents	not available
Vapor Density (Air = 1)	not applicable
Vapor Pressure	not applicable

9. PHYSICAL AND CHEMICAL PROPERTIES (CONTINUED)

Viscosity	not applicable
Volatiles (% by weight)	not determined
Other	product is hygroscopic
Flammability	not flammable or combustible
Flash Point (Method)	~ 518°F (~ 270°C) [Closed Cup]
Upper Flammable Limit (% by volume)	not applicable
Lower Flammable Limit (% by volume)	not applicable
Auto-Ignition Temperature	not determined

< : less than > : greater than ~ : approximately

10. STABILITY AND REACTIVITY

Chemical stability	This product is stable at ambient temperature and atmospheric pressure as well as under recommended storage and handling conditions. Thermal decomposition occurs at temperatures above 150°C (302°F). It is not self-reactive and has an almost indefinite shelf-life under sealed conditions. It is not sensitive to physical impact. Slow hydrolysis may occur.
Conditions to avoid	Avoid prolonged storage at elevated temperatures. In order to prevent thermal decomposition, do not overheat.
Incompatible materials	Danger of explosion may result from contact with strong oxidizing agents and amines. Exothermic reactions may occur with alcohols.
Hazardous decomposition products	Under fire conditions the product decomposes to give off toxic and corrosive hydrogen chloride gas and carbon oxides.
Possibility of hazardous reactions	Hazardous polymerization is not expected to occur under normal temperatures and pressures.

11. TOXICOLOGICAL INFORMATION

Acute toxicity (Oral / Dermal / Inhalation)	Oral LD ₅₀ = 95 mg/kg in rats (lowest value reported). Dermal LD ₅₀ > 2000 mg/kg in rats. Inhalation LC ₅₀ = not available. SMCA is toxic by ingestion and may cause irritation to the respiratory tract with symptoms of bronchitis.
Irritation (Skin / Eyes)	SMCA is irritating to skin and eyes.
Chronic toxicity (Oral / Dermal / Inhalation)	Ingestion may result in severe irritation of the mouth, throat, esophagus and stomach. Prolonged and/or repeated skin contact may result in irritation with redness, swelling and drying of the skin.
Sensitization	SMCA is not sensitizing to skin [Mouse Local Lymph Node Assay]. Due to the lack of skin sensitizing potential, it is unlikely that this substance is a respiratory sensitizer.
Carcinogenicity	IARC, NTP, ACGIH and OSHA do not classify this material as a carcinogen or suspect carcinogen. A related product (Monochloroacetic acid) was not carcinogenic in a 2-yr feeding study (rat, mouse).
Mutagenicity	Product is not mutagenic as tested in the Ames Assay.

11. TOXICOLOGICAL INFORMATION (CONTINUED)

Reproductive toxicity	No data available.
Other Effects	<i>In vitro</i> cytogenicity tests show positive effects at cytotoxic doses accompanied with dramatic changes in pH of culture medium. Cytogenicity tests <i>in vivo</i> show equivocal results. Hematology and clinical chemistry effects were observed in a 90 day oral gavage study in rats at 15 mg/kg/day, the lowest dose tested.
Target Organs	Eyes, skin, respiratory tract, heart, brain, central nervous system, skeletal muscles, liver, kidneys, lungs and vascular system.

12. ECOLOGICAL INFORMATION

Ecotoxicity	SMCA is considered toxic to aquatic life based on available data for a related product: MCA (monochloroacetic acid): Fish (<i>poecilla reticulata</i> / guppy): 96h LC ₅₀ = 369 mg/L Daphnia magna : 48h EC ₅₀ = 88 mg/L ; 21-days NOEC = 32 mg/L Algae (<i>desmodesmus subspicatus</i>): 72h ErC ₅₀ = 0.033 mg/L ; NOErC = 0.0058 mg/L Bacteria (<i>tetrahymena pyriformis</i>) freshwater, static : 9h EC ₅₀ = 83 mg/L [Growth inhibition / Activated sludge respiration inhibition test]
Biodegradation	SMCA is expected to be readily biodegradable, based on data with a related product (Monochloroacetic acid).
Bioaccumulation	Bioaccumulation is not expected due to the substance's high water solubility. Log P _{ow} < 0
Other information	None available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal	Material that cannot be used or chemically reprocessed and thoroughly emptied bags should be disposed of at an approved facility in accordance with all applicable regulations. This product, if unused, is not a RCRA-listed waste and does not meet the RCRA criteria for hazardous wastes by characteristics. Generators of waste material are required to evaluate all waste for compliance with RCRA and any applicable state and local disposal procedures and regulations. Dispose of waste in accord with local, state and federal regulations. Incineration may be used where permitted by regulations. NOTE! – State and local regulations may be more stringent than federal regulations.
Container Disposal	Bags should be cleaned of residual product before disposal. Do not contaminate public waters with waste or rinsate. Empty bags may retain residues. Follow all warnings and precautions even after the bag is emptied. Empty bags should be disposed of in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

Regulation	UN Number	Proper Shipping Name <small>[Technical Name]</small>	Hazard Class	PG	Label	Additional Information
US DOT Canada TDG IATA / ICAO	UN2659	Sodium chloroacetate	6.1	III	6.1 (Poison / Toxic)	
IMDG / IMO	UN2659	Sodium chloroacetate	6.1	III	6.1 (Poison / Toxic)	Marine Pollutant



14. TRANSPORT INFORMATION (CONTINUED)

**Emergency Response
Guidebook (2008 ERG)** 151

**Environmentally
Hazardous Substances** None
[49 CFR 172.101, Appendix A]

15. REGULATORY INFORMATION

Regulatory Lists / Inventories: The components are subject to the following regulatory lists and inventories:

Substance Name	CAA	CERCLA	IARC	US State Right-To-Know Lists	CA Prop 65	SARA
Sodium monochloroacetate	N/R	N/R	N/R	NJ	N/R	N/R

National Chemical Inventories Status:

Substance Name	US TSCA	Canada		EU EINECS	Australia AICS	New Zealand NZIoC	Japan ENCS	Korea KECI	Philippines PICCS	China IECSC
		DSL	NDSL							
Sodium monochloroacetate	X	X		X	X	X	X	X	X	X

Legend

AICS	Australian Inventory of Chemical Substances
CA LIST	California – Directors List of Hazardous Substances
CA PROP 65	California Proposition 65
CAA	Clean Air Act, Section 112
CERCLA	CERCLA Hazardous Substances
DSL	Domestic Substances List – Canada
EINECS	European Inventory of Existing Commercial Chemical Substances
ENCS	Japan Existing and New Chemical Substances
IARC	International Agency for Research on Cancer – Carcinogens – Groups 1, 2A or 2B
IECSC	China – Inventory of Existing Chemical Substances
IL LIST	Illinois Toxic Substances Disclosure to Employees Act
KECI	Korea Existing Chemicals Inventory
LA LIST	Louisiana Right-to-Know Reporting List
MA LIST	Massachusetts – R-T-K Substance List
MN LIST	Minnesota – Hazardous Substance List
NDSL	Non-Domestic Substances List – Canada
NJ R-T-K	New Jersey – R-T-K Hazard List
N/R	Non Regulated
NZIoC	New Zealand Inventory of Chemicals
PA LIST	Pennsylvania Hazardous Substance List
PICCS	Philippines Inventory of Chemicals and Chemical Substances
RI LIST	Rhode Island – Hazardous Substance List
SARA	SARA Title III, Section 302 / 313
TSCA	Toxic Substances Control Act – USA
X	Listed and/or Regulated

CANADA – WHMIS
(*Workplace Hazardous
Materials Information
System*)

Class D1B

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.

**Other Regulatory
Information**

None known.



16. OTHER INFORMATION

HMIS Hazard Rating **Health: 2 / Flammability: 1 / Physical Hazard: 0 / Other: none**
[0 – Minimal / 1 – Slight / 2 – Moderate / 3 – High / 4 – Extreme / * - Chronic Health Hazard (see Section 11)]

NFPA Hazard Rating **Health: 2 / Fire: 1 / Instability: 0 / Other: None**
[0 – Minimal / 1 – Slight / 2 - Moderate / 3 – High / 4 – Extreme]

Trademark Not applicable

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Changes All sections

Prepared by Akzo Nobel Services Inc. (Technology & Engineering, Regulatory & Applied Life Sciences)

Technical Information Contact Akzo Nobel Functional Chemicals, 1-303-937-7482

Disclaimer

The information in this material safety data sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. The user must determine the appropriate measures that need to be implemented for the use and handling of this product in the context of the user's operations and use of this product. The information contained herein supersedes all previously issued bulletins on the subject matter covered. If the date on this document is more than three years old, call to make certain that this sheet is current. No warranty is made as to the product's merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. User must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes, including mixing with other products. Nothing contained herein shall be construed as granting or extending any license under any patent.

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