

MATERIAL SAFETY DATA SHEET

m.doc (Microdispersed Oxidized Cellulose)

MSDS Number: APL01/06 --- Effective Date: 31/03/06

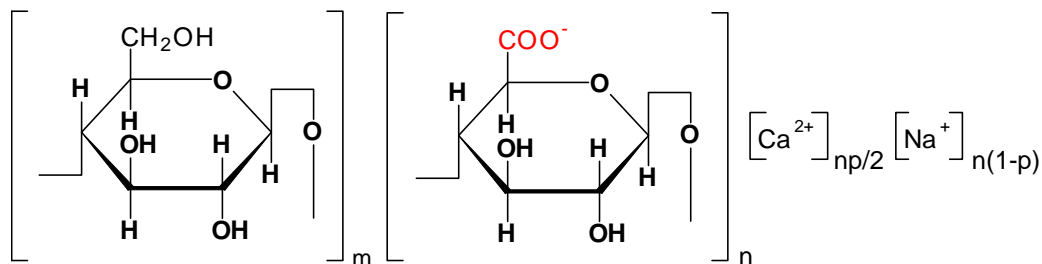
1. Product and Company Identification

Synonyms: Oxidised Cellulose, Calcium/Sodium Salt

Ca^{2+} , Na^+ salt of 1,4 β -D-polyanhydroglucuronic acid

CAS No.: N/A

Chemical Formula (Structural):



random copolymer of
polyanhydroglucose
(monomer unit of cellulose)

polyanhydroglucuronic acid

(Ca/Na salt)

Chemical Formula (Summary):

copolymer $(\text{C}_6\text{H}_{10}\text{O}_5)_m \cdot (\text{C}_6\text{H}_7\text{O}_6)_n (\text{Ca}^{2+})_{np/2} (\text{Na}^+)_{n(1-p)}$ $m \in \langle 0,0;0,4 \rangle$; $n \in \langle 0,6;1,0 \rangle$

Molecular Weight: 50 – 200 kD

Manufacturer: HemCon Medical Technologies Europe Ltd., 10 Church Place, Sallynoggin, Co. Dublin, Ireland

Emergency Health & Product Safety Information: +353 1 2352162

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
m.doc	N/A	85 - 97%	No
Water	N/A	3 - 15%	No

3. Hazards Identification

Emergency Overview

WARNING!

POWDERED MATERIAL MAY FORM EXPLOSIVE DUST-AIR MIXTURES. COMBUSTIBLE SOLID.

NFPA and other Ratings

Health Rating: 0 - None
 Flammability Rating: 1 - Slight
 Reactivity Rating: 0 - None
 Contact Rating: 0 - None
 Lab Protective Equip: GOGGLES; LAB COAT; CLASS A EXTINGUISHER
 Storage Colour Code: Orange (General Storage)

Potential Health Effects

Inhalation:

No adverse health effects expected. Treat as a nuisance dust.

Ingestion:

Very large doses may cause gastro-intestinal upset.

Skin Contact:

No adverse effects expected.

Eye Contact:

No adverse effects expected but dust may cause mechanical irritation.

Chronic Exposure:

No information found.

Aggravation of Pre-existing Conditions:

No information found.

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4. First Aid Measures

Inhalation:

Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion:

If large amounts were swallowed, give water to drink. Get medical advice if adverse symptoms develop.

Skin Contact:

Wash exposed area with soap and water. Get medical advice if irritation develops.

Eye Contact:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical advice if irritation persists.

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5. Fire Fighting Measures

Fire/Explosion Characteristics:

- Minimum ignition temperature, dust cloud: 567°C
- Minimum ignition temperature, dust sediment: 569°C
- Minimum inflammation temperature, dust sediment: 261°C
- Glowing temperature, dust sediment: 209°C
- Speed of flame propagation in oxygen, dust sediment: 3.03 cm/sec
- Heating capacity: 10.1 MJ/kg
- Minimum explosible concentration: N/A at initiation energy 9 kJ
- Minimum initiation energy: 40 kJ

Fire:

As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source. Contact with strong oxidizers may cause fire.

Explosion:

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Fire Extinguishing Media:

Class A extinguishers such as dry chemical, foam, or carbon dioxide; water can be used but may lead to swelling and gelation. CAUTION: Pressure from the extinguishing media may cause severe dusting. Dispersed powder in air can create an explosion hazard.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.

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7. Handling and Storage

Avoid dust formation and control ignition sources. Employ grounding, venting and explosion relief provisions in accord with accepted engineering practices in any process capable of generating dust and/or static electricity. Empty only into inert or non-flammable atmosphere. Emptying contents into a non-inert atmosphere where flammable vapors may be present could cause a flash fire or explosion due to electrostatic discharge. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

- OSHA Permissible Exposure Limit (PEL):
15 mg/m³ total dust, 5 mg/m³ respirable fraction, for nuisance dusts.
- ACGIH Threshold Limit Value (TLV):
10 mg/m³ total dust containing no asbestos and < 1% crystalline silica for Particulates Not Otherwise Classified (PNOC).

Ventilation System:

A system of local and/or general exhaust is recommended to keep exposures as low as possible. Local exhaust ventilation is preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded, a half-face dust/mist respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece dust/mist respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear protective gloves and clean body-covering clothing.

Eye Protection:

Use chemical safety goggles and/or face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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9. Physical and Chemical Properties

Appearance:

White to creamy yellow amorphous powder.

Odour:

Odourless to slight scorchy odour.

Solubility:

Partially soluble in water to form a colloidal dispersion, soluble in alkalis. Insoluble in common organic solvents.

Bulk Density:

100 to 1000 kg/m³ depending on granularity, porosity, and specific surface area.

pH:

4.5 to 7.0 in 1% by weight water extract.

Boiling Point: Not defined.

Melting Point: Not defined.

Vapour Density (Air=1): Not defined.

Vapour Pressure (mm Hg): Not defined.

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10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Carbon dioxide and carbon monoxide may form when heated to decomposition.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Strong oxidizing agents.

Conditions to Avoid:

Heat, flame, ignition sources, dusting, air, and incompatibles.

11.Toxicological Information

i.p. rat LD50: > 4,300 mg/kg; i.p. rabbit LD50: > 4,000 mg/kg.

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Cellulose (9004-34-6)	No	No	None

12.Ecological Information

Environmental Fate:

No information available.

Environmental Toxicity:

No information available.

13.Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14.Transport Information

Not regulated.

15.Regulatory Information

No relevant information found.

Poison Schedule: No information found.

WHMIS: This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and contains all of the information required.

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16. Other Information

NFPA Ratings: Health: **0** Flammability: **1** Reactivity: **0**

Label Hazard Warning:

WARNING! POWDERED MATERIAL MAY FORM EXPLOSIVE DUST-AIR MIXTURES. COMBUSTIBLE SOLID.

Label Precautions:

Minimize dust generation and accumulation.

Keep away from heat, sparks and flame.

Keep container closed.

Use only with adequate ventilation.

Label First Aid:

Not applicable.

Product Use:

Bulk substance for medical device manufacture.

Revision Information:

Revision 1

Disclaimer:

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