

DextraCel HP

Version 1.0

Revision date: 19.10.2023

Issue date: 19.10.2023

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name	DextraCel HP
REACH registration number	Exempt (Annex IV, article 2(7))
Pure substance/mixture	Pure substance
Substance name	Cellulose nanocrystals' aggregates (aggregates of nanoform of cellulose)
Synonyms	Cellulose whiskers, nanocrystalline cellulose, cellulose crystallites, nanocellulose
CAS-No	9004-34-6
EC No	232-674-9

1.2 Relevant identified uses of the substance or mixture and uses advised against.

Relevant use	Manufacture of substances
Use advised against	No information available.

1.3 Details of the supplier of the safety data sheet.

Manufacturer	Anomera Inc 805 – 460 Ste Catherine O, H3B 1A7 Montreal, Quebec, Canada info@anomera.ca +1 514 845 4444
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1.4 Emergency telephone

+1 514 845 4444

SECTION 2: HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

The product is not classified as hazardous within the meaning of Regulation (EC) No 1272/2008.

2.2 Label elements:

Not a hazardous substance within the meaning of Regulation (EC) No 1272/2008.

2.3 Other hazards

The product does not contain substances classified as PBT at levels of 0.1% or higher.
The product does not contain substances classified as vPvB at levels of 0.1% or higher.
The product does not contain any substances with endocrine disrupting properties at levels of 0.1% or higher.

Under conditions of normal use and in its original form, the product itself does not involve any other risk for health or the environment.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Substance name	Aggregated cellulose nanocrystals (nanoform of cellulose). The individual aggregates consist of spheroidal microparticles of 3 – 10 µm in diameter. The cellulose nanocrystals consist of rod-like particles of 5-10 nm width x 75-250 nm length.
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Synonyms

Cellulose whiskers, nanocrystalline cellulose, cellulose crystallites, nanocellulose

Chemical name	CAS No	EC No	Weight %
Cellulose (nano form)	9004-34-6	232-674-9	100

SECTION 4: FIRST AID**4.1 Description of first aid measures****First aid**

If in doubt, seek medical attention.

Inhalation

If inhaled, move person into open air; keep them warm and calm. If symptoms persist, seek medical attention.

Contact with eyes

Rinse the eye with plenty of water or saline solution, seek medical advice.

In contact with skin

Wash skin with plenty of water. If symptoms persist, seek medical attention.

In case of ingestion

Rinse mouth. Never induce vomiting if the person is unconscious or confused. Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

No information available.

4.3 Indication of any medical attention and special treatment needed.**Treatment**

Symptomatic treatment

SECTION 5: FIRE-FIGHTING MEASURES**5.1 Extinguishing Media****Suitable extinguishing agents**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Powder extinguisher (dry multipurpose ABC and BC powder)

CO2 extinguisher

Water-based fire extinguisher with additive

Foam

Sand

Fire blanket

Unsuitable extinguishing agents

High volume water jet

5.2 Special hazards arising from the substance or mixture:**Hazardous decomposition products in case of fire**

Carbon oxides.

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

5.3 Advice for firefighters**Protection**

Wear self-contained breathing apparatus and appropriate protective clothing.

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Other information

Collect contaminated water used to extinguish the fire separately.
Do not discharge into the wastewater system.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel: Wear suitable protective clothing. Ensure adequate ventilation.

6.1.2. For emergency personnel Do not intervene without adequate protective equipment.

6.2 Environmental precautions

Environment

Prevent the product from entering drains.

6.3 Methods and material for containment and cleaning up

Sweep up and shovel into suitable disposal containers.

Containment

Covering sewers: Use blanket covers.

6.4 Reference to other sections

References For personal protection

No references.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling

Avoid dust formation.

Avoid contact with skin, eyes and clothing

Ensure adequate ventilation.

Wear personal protective equipment.

Keep away from open flames, hot surfaces and sources of ignition.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Store in closed, tightly sealed containers in cool (4 °C), dry, well-ventilated area, away from sources of ignition, electrostatic sparks, extreme heat, or mechanical friction. Protect from freezing. Do not store food or beverages in areas where materials are handled. Store away from strong oxidizing agents. Do not smoke in work area where materials are stored.

Incompatible products

No materials to be especially mentioned.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Component Information

Exposure limit is based on best available published data for similar substance.

Chemical Name	ACGIH TLV	European Union	Japan
Cellulose	TWA: 10 mg/m ³		C1

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Technical controls

Use appropriate ventilation procedures at each of the points of the process.

Ventilate all transport vehicles before unloading.

8.2.2 Individual protection measures, such as personal protective equipment

Appropriate engineering controls

Engineering measures

Use mechanical exhaust or laboratory fume hood to avoid exposure.

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Individual protection measures, such as personal protective equipment (PPE)**Personal Protective Equipment****General Information**

Protective engineering solutions should be implemented and in use before personal protective equipment is considered. Use mechanical exhaust or laboratory fume hood to avoid exposure. Use personal protective equipment in good condition.

Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Eye/Face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties****General Information****Physical state**

Crystalline (powder)

Appearance

Powder

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Color	White
Odor	No data available
Odor threshold	No data available

Important health safety and environmental information

pH	4-8
Flash point	Not flammable
Autoignition temperature	No data available
Boiling point/range	No data available
Vapor pressure	No data available
Vapor density	No data available
Water solubility	The aggregates of nanoform of cellulose spontaneously disperse into individual cellulose nanocrystals when put in contact with water. The cellulose nanocrystals do not dissolve in water (<0.1 g/l); however, they form a stable suspension.
Partition coefficient	No data available
Viscosity	No data available
Specific gravity	No data available
Density	0.4 – 0.6 g/cm ³
Decomposition temperature	No data available
Explosive properties	Kst is 176 bar m/s P _{max} is 9.0 bar
Evaporation rate	No data available
<u>Other information</u>	
Melting point/range	No data available
Freezing point	No data available
Particle characteristics	This product is a powder, containing the aggregates of nanoform of cellulose (cellulose nanocrystals). The aggregates consist of spheroidal microparticles of 3 – 10 µm in diameter. The individual cellulose nanocrystals consist of rod-shaped particles of 5-10 nm width x 75-250 nm length.
Surface charge (of individual cellulose nanocrystals)	- 45±10 mV
Crystallinity (of individual cellulose nanocrystals)	76% (Segal method)

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	No known hazardous chemical reactions.
10.2 Chemical stability	Stable under normal conditions of storage and use.
10.3 Possibility of hazardous reactions	No data available
10.4 Conditions to avoid	Avoid dust formation, heat, flames. Keep away from open flames, hot surfaces and sources of ignition
10.5 Incompatible materials	Strong oxidizing agents
10.6 Hazardous decomposition products	Hazardous decomposition products may form under fire conditions. Nature of decomposition products not known.

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Other decomposition products No data available.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity No data available

Acute dermal toxicity No data available

Eyes Avoid contact with eyes, may cause mechanical irritation of the eyes. CNC exposure had no effect in human corneal epithelial cells (Zoppe 2014). Acute ocular instillation of MCC reported only minimal irritation (unpublished report, WHO 1998).

Skin CNC found to have primary irritation index of 0 (OECD 404); non-sensitizing intradermally (OECD 406); non-sensitizing topically (No effect at 10.7%; OECD 429); and not a contact dermal sensitizer (O'Connor 2014).

Inhalation This product may form dust. Data are limited, inhalation of dust in high concentration may cause irritation of respiratory system. Acute rat inhalation (OECD 403) LC50 > 0.3 mg/L. For long term exposure, data are limited. Occupational studies have shown long term exposure to dust and fibers in a factory setting (>10 mg/m³) may lead to decreased lung function (Kraus 2004).

Ingestion Do not taste or swallow. CNC did not show any acute oral toxicity in rats: LD50 > 2000 mg/kg (OECD 425; O'Connor 2014). Acute oral exposure to micro-crystalline cellulose (MCC) did not find any adverse effects (unpublished report, WHO 1998). For long term exposure, no adverse effects from repeated oral exposure to CNC for 28 days: LD50 > 2000 mg/kg (OECD 407; O'Connor 2014). No adverse effects in rats consuming a 30% MCC diet for 72 days (WHO 1998); no death nor growth effects in rats with a 0-20% cellulose diet for 4 weeks (Hove 1978); at 5, 10, 20% cellulose diet for 21-days in rat, no deaths (Sundaravelli 1971); 10% MCC fed to rats for 35 weeks reported no effects (Lupton 1988); NOAEL > 4% MFC in diet, 2667 mg/kg/day (OECD 408; Ong et al., 2020).

Aggravated Medical Conditions None known

Chronic toxicity

Sensitization No information available

Neurological Effects No information available

Target organ effects No information available

Germ cell mutagenicity

Genotoxicity in vitro No information available

CMR Effects

Carcinogenicity No information available

Reproductive toxicity No information available

Reproductive toxicity No information available

STOT – single exposure No information available

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STOT – repeated exposure No information available

SECTION 12: ECOLOGICAL INFORMATION**12.1 Toxicity****Toxicity** No information available.**12.2 Persistence and degradability****Biodegradability** Readily biodegradable (OECD 301 F)**12.3 Bioaccumulative potential****Bioaccumulation** No information available.**12.4 Mobility in soil****Distribution among environmental
Compartments** No information available.**12.5 Results of PBT and vPvB assessment****Assessment** Not required.
This substance contains no components considered to be either persistent, bioaccumulation and toxic (PBT) or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher**12.6 Endocrine disrupting properties**

The substance does not contain components considered to have endocrine disrupting properties according to REACH Article 57 (f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No information available.

SECTION 13: DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods****Methods** Dispose of in accordance with local regulations.
Contaminated packaging Empty remaining containers. Empty containers should be taken to an approved waste handling facility for recycling or disposal.**SECTION 14: TRANSPORT INFORMATION****14.1 UN number or ID number** Not regulated as a dangerous good.**14.2 UN proper shipping name** Not regulated as a dangerous good.**14.3 Transport hazard class(es)** Not regulated as a dangerous good.**14.4 Packing group** Not regulated as a dangerous good.**14.5 Environmental hazards** Not regulated as a dangerous good.

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14.6 Special precautions for user Not applicable.

14.7 Maritime transport in bulk according to IMO instruments
Not applicable for product as supplied.

15. REGULATORY INFORMATION

15.1 Regulations and legislation on safety, health and the environment specific to the substance.

Relevant EU provisions transposed through retained EU law

Hazard symbols None.
R Phrases None.
Hazard pictograms Not required.

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

TSCA This product either contains a chemical substance that is not listed on the public TSCA Inventory or the TSCA Inventory status of the product has not been evaluated. For FDA uses only.

REACH This substance is exempt from registration according to Regulation (EC) No. 1907/2006 (REACH), as per Annex IV, article 2(7).

DSL All components of this product are on the Canadian DSL

AICS On the inventory, or in compliance with the inventory

KECI On the inventory, or in compliance with the inventory

PICCS On the inventory, or in compliance with the inventory

IECSC On the inventory, or in compliance with the inventory

TSCI On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment.
A chemical safety assessment of the substance is not required.

16. OTHER INFORMATION

This Safety Data Sheet is prepared in accordance with EU Commission Regulation No 878/2020 that modifies Regulation (EC) No 1907/2006.

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.