

Date: 15.07.2014

Former date: 02.07.2013

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1 Product identifier****Trade name**
GrowDex®**Company product code****Reach registration number**

Not registered. The product consists of naturally occurring substances.

1.2 Relevant identified uses of the substance or mixture and uses advised against**The uses of the chemical**

GrowDex® can be used in life science applications

Classification of economic activities (NACE)

C Manufacturing

Use categories (UC62)

20

The chemical can be used by the general public☐**The chemical is used by the general public only**☐**1.3 Details of the supplier of the safety data sheet****Manufacturer, importer, other undertaking**

UPM-Kymmene Oyj

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1041090-0

1.4 Emergency telephone number**112**Poison Information centre (in Finland), open 24 h daily
PL 790 (Tukholmankatu 17)
00029 HUS

tel. +358 9 471977 or +358 9 4711

SECTION 2: HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture**

In accordance with current regulations (1272/2008 CLP), this substance has not been classified as dangerous.

Classification according to 67/548/EEC-1999/45/EC: no classification.

2.2 Label elements

No labelling: in accordance with current regulations, this substance has not been classified as dangerous.

2.3 Other hazards

If dried, the material forms organic dust. An HTP value (concentration known to be hazardous) has been defined for organic dust (see Section 8).

The product consists of micro and nanosized cellulose fibrils. The length of fibrils may be several micrometers while the diameter is in nanometer scale (4-100 nm).

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

The product contains 1-2% cellulose (CAS/EC number 9004-34-6 / 232-674-9) and water (CAS number 732-18-5). The fiber part is isolated from *Pinus sylvestris* and *Picea abies* or *Betula* sp. The product have been autoclaved in 120°C.

Hazardous ingredients			
CAS/EC number and the registration number	Name of the ingredient	Concentration	Classification

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

Inhalation: Move to fresh air. Get medical attention if symptoms appear.

Skin contact: Wash with water. Get medical attention if irritation occurs.

Eye contact: Rinse with plenty of water for several minutes. Get medical attention if irritation occurs.

Ingestion: Rinse mouth with plenty of water. By ingestion of large quantities endeavour to vomit. Get medical attention if symptoms appear.

4.2 Most important symptoms and effects, both acute and delayed

Eye contact: Mechanical irritation possible.

4.3 Indication of any immediate medical attention and special treatment needed

No special treatment needed.

SECTION 5: FIREFIGHTING MEASURES**5.1 Extinguishing media**

Water spray, foam, carbon dioxide

5.2 Special hazards arising from the substance or mixture

The product itself is non-flammable. If dried, flammable organic dust may form.

5.3 Advice for firefighters

In large fires or in confined areas, use appropriate protective equipment and a self-contained breathing apparatus.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Handle carefully to avoid spilling, drying and dust formation. Remove all ignition sources. Dust filters are recommended.

6.2 Environmental precautions

Minimize contamination of drains, surface and ground waters.

6.3 Methods and material for containment and cleaning up

Use appropriate tools to collect the product for disposal. Flush the area with water.

6.4 Reference to other sections

Personal protection equipment: see Section 8.2

Disposal: see Section 13

SECTION 7: HANDLING AND STORAGE**7.1 Precautions for safe handling**

Handle the material in accordance with good industrial hygiene and safety practices. Use protective gloves and clothes to avoid skin exposure. If exposed, wash the skin with water. Use protective glass to avoid splash to eyes. In wet state the product does not form dust. If dried avoid breathing of dust. Dust filters are recommended.

7.2 Conditions for safe storage, including any incompatibilities

Keep containers tightly closed. Storage in dry, cool and well-ventilated place protected from direct sunlight and away from highly flammable substances / materials. Store above 4°C and avoid freezing. No legal demands concerning storage.

7.3 Specific end use(s)

Not reported.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

National occupational exposure limit values

Organic dust: 5 mg/m³ (8 h) ja 10 mg/m³ (15 min).

Other limit values

Microcrystalline cellulose: ACHIG 10 mg/m³, OSHA 15 mg/m³ (total dust), OSHA 5 mg/m³ (respirable fraction of dust)

UK (TWA): 10 mg/m³ (total inhalable dust), 4 mg/m³ (respirable dust)

DNEL

The product contains no hazardous ingredients.

PNEC

The product contains no hazardous ingredients.

8.2 Exposure controls

Appropriate engineering controls

Keep containers tightly closed and away from ignition sources and heat.

Eye/face protection

It is recommended to use eye protection.

Skin protection

It is recommended to protect skin from any splashes.

Hand protection

It is recommended to use protective gloves.

Respiratory protection

If the product is dried, use respiratory protection (filter P2).

Thermal hazards

The product itself is stable and non-flammable. If dried, flammable organic dust may form.

Environmental exposure controls

Prevent large amounts from entering sewers or environment.

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

Appearance	Highly viscous, opaque, aqueous suspension gel.
Odour	almost odourless
Odour threshold	Not applicable.
pH	neutral (1 % watersolution)
Melting point/freezing point	Unknown
Initial boiling point and boiling range	100 °C (water)
Flash point	Not applicable.
Evaporation rate	Unknown
Flammability (solid, gas)	Not applicable. Non-flammable when moist.
Upper/lower flammability or explosive limits	Not applicable.
Vapour pressure	Not applicable.
Vapour density	Not applicable.
Relative density	Unknown.
Solubility(ies)	Insoluble in alcohols, diethyl ether, acetone, etc. Insoluble in cold and hot water.
Partition coefficient: n-octanol/water	Not applicable.
Auto-ignition temperature	Unknown.
Decomposition temperature	> 250 °C
Viscosity	For 0,5 % aqueous dispersion: High zero shear viscosity (i.e. 2000-8 000 Pa s).
Explosive properties	No risk of explosion.
Oxidising properties	Not oxidising

9.2 Other information

Dry weight percentage: 1 – 2 %

SECTION 10: STABILITY AND REACTIVITY**10.1 Reactivity**

Not reactive under normal use and storage conditions.

10.2 Chemical stability

The product is stable.

10.3 Possibility of hazardous reactions

No hazardous reactions under normal use and storage conditions.

10.4 Conditions to avoid

Keep away from ignition sources and heat.

10.5 Incompatible materials

None.

10.6 Hazardous decomposition products

Burning may produce toxic gases e.g. carbon monoxide.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

There is no toxicological data available for this specific product:

Data from similar compounds:

Cellulose, microcrystalline (CAS 9004-34-6) (ChemIDplusLite)

LD50 >5000 mg/kg (orally, rat)

LD50 >2000 mg/kg (dermally, rabbit)

LC50 >5800 mg/m³ (rat, inhalation, 4 h)

LD50 >31600 mg/kg (intraperitoneal, rat)

Skin corrosion/irritation

Eyes Not irritating (rabbit)

Skin Not irritating (PII = 0/8.0) (rabbit)

UPM MICROFIBRILLATED CELLULOSE STERILE:

Tested at 1% de-ionized water. Skin irritation patch test in human volunteers (ISPE s.r.l.):

No skin irritation potential

Serious eye damage/irritation

The product is not an eye irritant.

Respiratory or skin sensitisation

Not sensitizing (Guinea pig)

Germ cell mutagenicity

The product is not classified as a mutagen.

Carcinogenicity

The product is not classified as a carcinogen.

Reproductive toxicity

The product is not classified as a reproductive toxicant.

STOT-single exposure

The product is not classified as toxic to specific target organs.

STOT-repeated exposure

The product is not classified as toxic to specific target organs.

Aspiration hazard

The product is not classified as causing aspiration toxicity.

Other information

(Vartiainen et al. 2011):

No evidence of inflammatory effects or cytotoxicity on mouse and human macrophages was observed after 6 and 24 h exposure. The results of toxicity studies suggest that the friction ground microfibrillated cellulose is not cytotoxic and does not cause any effects on inflammatory system in macrophages.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

There is no ecotoxicological data available for this specific product:

(Vartiainen et al. 2011):

Acute environmental toxicity assessed with kinetic luminescent bacteria test (*Vibrio fischerii*), NOEC >100 mg/l

12.2 Persistence and degradability

Biodegradable in soil based on information from similar products. Chemical degradation produces carbon oxides (CO, CO₂) and water.

12.3 Bioaccumulative potential

Natural product, no bioaccumulative potential.

12.4 Mobility in soil

Insoluble in water.

12.5 Results of PBT and vPvB assessment

Biodegradable, thus not considered to fulfill criteria for PBT or vPvB substances.

12.6 Other adverse effects

Not reported.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Disposal according to current national and local official regulations.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

Not classified for transportation.

14.2 UN proper shipping name

14.3 Transport hazard class(es)

14.4 Packing group

14.5 Environmental hazards

Prevent large amounts from entering sewers or waterways.

14.6 Special precautions for user

Keep away from ignition sources and heat. Do not let the substance get dry. When dry, the substance is flammable.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

SECTION 15: REGULATORY INFORMATION

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

Guidance and regulations concerning nanotechnology should be followed.

15.2 Chemical safety assessment

Not registered and no chemical safety assessment performed. The product consists of naturally occurring substances.

SECTION 16: OTHER INFORMATION

Glossary of abbreviations

HTP value concentration of impurity in workplace air known to be hazardous

ACGIH: American Conference of Governmental Industrial Hygienists

NOEL: No observable effect level; highest concentration at which no effect was observed.

OSHA: Occupational Safety and Health Administration (United States)

TWA: time-weighted average

LC50: Lethal concentration 50 % (median lethal concentration), concentration of the substance which kills 50 % of exposed organisms

LD50: Lethal dose 50 % (median lethal dose), dose of the substance which kills 50 % of exposed organisms

EC50: median effective concentration. Statistically derived concentration of a substance in an environmental medium expected to produce a certain effect in 50% of test organisms in a given population under a defined set of conditions.

References

Material safety data by UPM

Degree on Concentrations known to be Hazardous (557/2009) (HTP-arvot 2009)

National Library of Medicine: ChemIDplusLite

Vartiainen et al., 2011. Health and environmental safety aspects of friction grinding and spray drying of microfibrillated cellulose. Cellulose DOI 10.1007/s10570-011-9501-7

List of relevant R phrases

None.