1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name : BERMOCOLL EBS 451 FQ

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

Use of the Substance/Mixture : Specific use(s):
Rheological modification Water retention and stability

1.3 Details of the supplier of the safety data sheet

Company : Akzo Nobel Functional Chemicals AB
SE  444 85  Stenungsund
Sweden

Telephone : +4630385000
Telefax : 
E-mail address : Regulatory.AffairsSE@akzonobel.com

1.4 Emergency telephone number

Emergency telephone number : +31 570679211 (Fax. +31 570679801)
Akzo Nobel Chemicals, Deventer, NL
China: 0532 83889090

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)
Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

Classification (67/548/EEC, 1999/45/EC)
Not a hazardous substance or mixture according to EC-directives 67/548/EEC or 1999/45/EC.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)
Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

**Labelling according to EC Directives (1999/45/EC)**

Further information: The product does not need to be labelled in accordance with EC directives or respective national laws.

### 2.3 Other hazards

Risk of dust explosion.

PBT and vPvB assessment: This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).
3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Remarks : No dangerous ingredients according to Directive 67/548/EEC.

**Candidate List of Substances of Very High Concern for Authorisation**

Candidate List of Substances of Very High Concern for Authorisation : This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

**Non-hazardous substance**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>REACH No.</th>
<th>Concentration [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylhydroxyethyl cellulose</td>
<td>9004-58-4</td>
<td></td>
<td></td>
<td>80 - 100</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice : No hazards which require special first aid measures.

If inhaled : Remove to fresh air.
Keep patient warm and at rest.
Rinse nose and mouth with water.

In case of skin contact : Remove contaminated clothing.
Rinse with water.

In case of eye contact : Rinse with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No information available.

Risks : No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No information available.
5. FIREFIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture
Specific hazards during firefighting / Specific hazards arising from the chemical: Do not allow run-off from fire fighting to enter drains or water courses. Risks of ignition followed by flame propagation or secondary explosions shall be prevented by avoiding accumulation of dust, e.g. on floors and ledges.

5.3 Advice for firefighters
Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.
Further information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Personal precautions: Avoid dust formation.

6.2 Environmental precautions
Environmental precautions: Try to prevent the material from entering drains or water courses. No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up

6.4 Reference to other sections
Additional advice: For personal protection see section 8.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Advice on safe handling: For personal protection see section 8. Avoid creating dust. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid spillage on floor as the product can become very slippery when wet.

Advice on protection against fire and explosion: Provide appropriate exhaust ventilation at places where dust is formed.
No sparking tools should be used.

Dust explosion class : St1

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep in a dry place. Store at room temperature in the original container. Keep container tightly closed.

Advice on common storage : No special restrictions on storage with other products.

Other data : No decomposition if stored and applied as directed.

7.3 Specific end uses

Specific use(s) : No information available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
<th>Form of exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust</td>
<td>1997-01-01</td>
<td>TWA 4 mg/m3</td>
<td>1997-01-01</td>
<td>GB EH40</td>
<td>Total dust</td>
<td></td>
</tr>
</tbody>
</table>

STEL: Short term exposure limit
TWA: Time Weighted Average (TWA)

8.2 Exposure controls

Engineering Controls
Provide appropriate exhaust ventilation at places where dust is formed.

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.
In the case of dust or aerosol formation use respirator with an approved filter.
Half mask with a particle filter P2 (EN 143).

Hand protection : For prolonged or repeated contact use protective gloves.
Protective gloves complying with EN 374.

Eye protection : Safety glasses

Hygiene measures : General industrial hygiene practice.

Environmental exposure controls
General advice: Try to prevent the material from entering drains or water courses. No special environmental precautions required.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

**Appearance**
- Form: powder
- Colour: off-white
- Odour: odourless
- Odour Threshold: no data available

**Safety data**
- pH: < 6.5 at 0.5 % solution
- Melting point/range: no data available
- Boiling point/boiling range: not applicable
- Flash point: not applicable
- Ignition temperature: 420 °C
- Evaporation rate: not applicable
- Flammability (solid, gas): no data available
- Lower explosion limit: 30 g/m3
- Upper explosion limit: no data available
- Vapour pressure: not applicable
- Relative vapour density: not applicable
- Relative density: no data available
- Solubility in other solvents: no data available
- Water solubility: Soluble, gel formation.
- Partition coefficient: n-octanol/water: no data available
- Autoignition temperature: 120 °C
- Burning number: 5
Decomposition temperature: > 100 °C
Avoid elevated temperatures. At temperatures above ~100 °C the product will slowly decompose and dissolving qualities are impaired. At temperatures above 200 °C charring of the product will occur.

Viscosity, dynamic: 3,000 - 4,000 mPa.s at 20 °C
pH 7 at 1% solution.

Viscosity, kinematic: no data available
Explosive properties: no data available
Minimum ignition energy: > 10 mJ
Oxidizing properties: The substance or mixture is not classified as oxidizing.

9.2 Other information
This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

10. STABILITY AND REACTIVITY

10.1 Reactivity
Stable under normal conditions.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Chemical stability and Hazardous reactions: Dust may form explosive mixture in air.

10.4 Conditions to avoid
Conditions to avoid: Keep away from open flames, hot surfaces and sources of ignition.

10.5 Incompatible materials
Materials to avoid: None known.

10.6 Hazardous decomposition products
Hazardous decomposition products: No hazardous decomposition products are known.
Thermal decomposition: > 100 °C
Avoid elevated temperatures. At temperatures above ~100 °C the product will slowly decompose and dissolving qualities are impaired. At temperatures above 200 °C charring of the product will occur.
11. TOXICOLOGICAL INFORMATION

Product information:
Hazard Summary

Inhalation : Product dust may be irritating to the respiratory system.

Skin : Product dust may be irritating to skin.

Eyes : Product dust may be irritating to eyes.

Ingestion : Not irritating.

Toxicology Assessment
Further information : No further data available.

11.1 Information on toxicological effects

Test result
Acute oral toxicity : LD50: > 5,000 mg/kg
Species: rat
The value is estimated from tests on similar products.

12. ECOLOGICAL INFORMATION

Product information:
Ecotoxicology Assessment

Results of PBT assessment : This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

Additional ecological information : None known.

12.1 Toxicity

Test result
Toxicity to fish : LC50: > 100 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
The value is estimated from tests on similar products.

Toxicity to daphnia and other aquatic invertebrates.: EC50: > 100 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
The value is estimated from tests on similar products.

12.2 Persistence and degradability

Product information:
Biodegradability : Not readily biodegradable.

12.3 Bioaccumulative potential

Product information:
Bioaccumulation : Bioaccumulation is unlikely.
12.4 Mobility in soil

Product information:
Mobility : no data available

12.5 Results of PBT and vPvB assessment

Product information:
PBT and vPvB assessment : This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

12.6 Other adverse effects

Product information:
Biochemical Oxygen Demand (BOD) : no data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Contaminated packaging : Empty remaining contents. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

14.1 UN number

ADR : Not dangerous goods
RID : Not dangerous goods
IMDG : Not dangerous goods
IATA : Not dangerous goods

14.2 Proper shipping name

ADR : Not dangerous goods
RID : Not dangerous goods
IMDG : Not dangerous goods
IATA : Not dangerous goods

14.3 Transport hazard class

ADR : Not dangerous goods
RID : Not dangerous goods
IMDG : Not dangerous goods
IATA : Not dangerous goods

14.4 Packing group

ADR : Not dangerous goods
RID : Not dangerous goods
IMDG : Not dangerous goods
IATA : Not dangerous goods

14.5 Environmental hazards

ADR : Not dangerous goods
RID : Not dangerous goods
IMDG : Not dangerous goods
14.6 Special precautions for user

Not classified as dangerous in the meaning of transport regulations.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

15. REGULATORY INFORMATION

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

Major Accident Hazard Legislation : 96/82/EC Update: 2003

Directive 96/82/EC does not apply

Water contaminating class
(Germany) : WGK 1 slightly water endangering

Notification status

CH INV : y (positive listing)
The mixture contains a polymer. The monomers for this polymer have been notified.

US.TSCA : y (positive listing)
All chemical substances in this product are either listed on the TSCA Inventory or in compliance with a TSCA Inventory exemption.

DSL : y (positive listing)
All components of this product are on the Canadian DSL list.

AICS : y (positive listing)
On the inventory, or in compliance with the inventory

NZIoC : y (positive listing)
On the inventory, or in compliance with the inventory

ENCS : y (positive listing)
On the inventory, or in compliance with the inventory

ISHL : y (positive listing)
On the inventory, or in compliance with the inventory

KECI : y (positive listing)
On the inventory, or in compliance with the inventory

PICCS : y (positive listing)
On the inventory, or in compliance with the inventory

IECSC : y (positive listing)
On the inventory, or in compliance with the inventory

For explanation of abbreviation see section 16.
Further information
This product is to be considered as a preparation according to EU-legislation.

15.2 Chemical Safety Assessment
BERMOCOLL EBS 451 FQ : not required

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Explanations for possible abbreviations mentioned in section 2
PBT : PBT: Persistent, bioaccumulative and toxic.
vPvB : vPvB: Very persistent and very bioaccumulative.
OEL : OEL: Occupational exposure limit.

Notification status explanation
CH INV Switzerland. New notified substances and declared preparations
US.TSCA United States TSCA Inventory
DSL Canadian Domestic Substances List (DSL)
AICS Australia Inventory of Chemical Substances (AICS)
NZIoC New Zealand. Inventory of Chemical Substances
ENCS Japan. ENCS - Existing and New Chemical Substances Inventory
ISHL Japan. ISHL - Inventory of Chemical Substances (METI)
KECI Korea. Korean Existing Chemicals Inventory (KECI)
PICCS Philippines Inventory of Chemicals and Chemical Substances
IECSC China. Inventory of Existing Chemical Substances in China (IECSC)

Further information
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