Liquid Lamination Material Safety Data Sheets
February 2012
• ClearShield Anti Graffiti 3
• ClearShield CSX 5000 9
• ClearShield Original 20 degree Satin 14
• ClearShield Original Gloss 23
• ClearShield Original Matte 31
• ClearShield Original Semi-Gloss 40
• ClearShield Type C 30 degree Satin 49
• ClearShield Type C Gloss 57
• ClearShield Type C Semi Gloss 67
• ClearShield Type LL 20 degree Satin 75
• ClearShield Type LL Gloss 84
• ClearShield Type LL Matte 93
• ClearShield Type LL 100
1.) **Identification of the substance/preparation and of the company/undertaking**

**Identification of the substance or preparation**

**Trade name**
CLEARSHIELD ANTI-GRAFFITI

**Use of the substance/preparation**
Liquid laminate

**Company/undertaking identification**

**Address**
Marabu North America LP
PO Box 40397
USA Charleston, SC 29423-0397

Telephone no. ++1-843-886-0094
Fax no. ++1-843-886-3701

E-mail address of person responsible for this SDS
PRSI@marabu.de

**Information provided by / telephone**
Product safety (+49) (0)7141/691-116 or 232

**Emergency telephone**
Transportation Emergencies: Chemtrec
International: 1703 527 3887
U.S. Domestic: 1-800-424-9300

Other Emergencies: 1-843-886-0094

2.) **Hazards possibilities**

**Classification**

| Repr.Cat. 2 | R61 |
| Xi | R36/37/38 |
| R52/53 |

**R phrases**

- 61 May cause harm to the unborn child.
- 36/37/38 Irritating to eyes, respiratory system and skin.
- 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Specific hazards to man and the environment**
The product is water polluting.

3.) **Composition / information on ingredients**

**Chemical characterization**
Liquid laminate containing water, based on polyurethane

**Hazardous ingredients**

**N-METHYL-2-PYRROLIDONE**

| CAS no. | 872-50-4 |
| EINECS no. | 212-828-1 |
| Concentration | $\geq 5 < 10$ %-b.w. |
| Classification | Xi;R36/38 |
| Repr.Cat. 2;R61 |
4.) **First aid measures**

**General information**

Immediately remove all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical attention. Unconsciousness: lateral position - call a physician.
After inhalation
Take the casualty into the fresh air and keep warm. Irregular breathing/no breathing: artificial respiration. Call a physician.

After skin contact
Wash away with soap and water and rinse. Do NOT use solvents or thinners!

After eye contact
Flush with plenty of water (10 - 15 min.).

After ingestion
Call a physician. Keep at rest. Do not induce vomiting.

5.) Fire-fighting measures

Suitable extinguishing media
Carbon dioxide, foam, sand, water.

Special exposure hazards arising from the substance or preparation itself, its combustion products or from resulting gases
Material supports the burning only after evaporation of the watery content. In this case, dangerous smoke gases such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced. Therefore, take suitable precautionary measures for fire fighting. Residues remaining after a fire have to be disposed of appropriately.

Special protective equipment for fire-fighting
Breathing apparatus with an independent source of air may be required.

Other information
Cool endangered containers with water in case of fire.

6.) Accidental release measures

Personal precautions
Provide for good ventilation. Do not breathe vapours. Refer to protective measures listed in sections 7 and 8.

Environmental precautions
Do not empty into drains. If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations.

Methods for cleaning up
Remove by liquid absorbing material (e.g. kieselguhr) and process according to waste regulations. Clean preferably with a detergent; avoid use of solvents.

7.) Handling and storage

Handling
Advice on safe handling
Avoid vapour concentration higher than the workplace exposure limits. Do not leave containers open. Avoid contact with skin and eyes. Avoid inhalation of vapour and spray mist. When using do not eat, drink or smoke. Comply with the health and safety at work laws.

Advice on protection against fire and explosion
Material supports the burning only after evaporation of the watery content.

Storage
Requirements for storage rooms and vessels
Store in cool but frostfree conditions in frostfree containers. Keep container tightly closed. Never use pressure to empty: container is not a pressure vessel. No smoking. Prevent unauthorized access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Hints on storage assembly
Keep away from oxidizing agents, from strongly alkaline and strongly acid materials.

Further information on storage conditions
Always keep in containers of same material as the original one.

8.) Expose controls/personal protection

Exposure limit values

N-METHYL-2-PYRROLIDONE

<table>
<thead>
<tr>
<th></th>
<th>LTEL</th>
<th>STEL</th>
<th>Skin resorption / sensitisation</th>
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</thead>
<tbody>
<tr>
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<td>25</td>
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<td>resorption</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>sensitisation</td>
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</table>

TRIETHYLAMINE

2000/39/EC

<table>
<thead>
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<th>STEL</th>
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<td></td>
<td></td>
</tr>
<tr>
<td>sensitisation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2-(2-BUTOXYETHOXY)ETHANOL

2000/39/EC

<table>
<thead>
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<th>LTEL</th>
<th>STEL</th>
<th>Skin resorption / sensitisation</th>
</tr>
</thead>
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</tr>
<tr>
<td>STEL</td>
<td>15</td>
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<tr>
<td>Skin</td>
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</tr>
<tr>
<td>sensitisation</td>
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</tr>
</tbody>
</table>

(2-METHOXYMETHYLETHOXY)PROPANOL

2000/39/EC

<table>
<thead>
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<th>STEL</th>
<th>Skin resorption / sensitisation</th>
</tr>
</thead>
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PROPAINE-1,2-DIOL

<table>
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<th>STEL</th>
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</tr>
</thead>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>resorption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sensitisation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Exposure controls
Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

Occupational exposure controls

Respiratory protection
Breathing protection equipment required in inadequately ventilated places and during spraying.

Respiratory filter (gas) : A
Respiratory filter (part) : P2
**Hand protection**

Chemical protection gloves are suitable, which are tested according to EN 374.

Recommendation for protection against components normally found in the products:

For short-term contact (e.g. spray protection) as well as for long-term contact (e.g. cleaning purposes):

Suitable material: LLDPE  
Material thickness: 0.06 mm  
Penetration time: >480 min.

Protective gloves must always be tested and confirmed with regard to suitability to each specific working environment (e.g. mechanical resistance, product compatibility, antistatic).

Follow the instructions and information from the glove manufacturer in reference to use, storage, care, and frequency of glove exchange.

Protective gloves should be immediately replaced upon being damaged or when showing first signs of wear. Preventive skin protection (skin protective cream) is recommended. Contaminated skin areas should immediately be washed (follow data sheet for skin protection M 042).

Working procedures are to be so arranged that the permanent wearing of gloves will not be necessary.

We recommend to set up a hand protection plan, which is adapted to the needs of the local business. Further information is provided in the publications of Bundesverband Handschutz (nos. 6 and 9) and BG Druck und Papierverarbeitung (528.1, 528.2, 531.X).

**Eye protection**

Use safety glasses.

**Skin protection**

All parts of the body should be washed after contact. Use re-greasing skin cream.

**General protective and hygiene measures**

The usual precautionary measures for the handling of chemicals have to be observed.

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**9.) Physical and chemical properties**

**General information**

<table>
<thead>
<tr>
<th>Form</th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>clear, yellow-tinged</td>
</tr>
<tr>
<td>Odour</td>
<td>like solvent</td>
</tr>
</tbody>
</table>

**Important health, safety and environmental information**

**Changes in physical state**

<table>
<thead>
<tr>
<th>Type</th>
<th>Starts to boil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>100 °C</td>
</tr>
<tr>
<td>Reference substance</td>
<td>(water)</td>
</tr>
</tbody>
</table>

**Flash point**

| Value | not applicable |

**Ignition temperature**

| Value | not applicable |

**Explosion limits**

| Remarks | not applicable |

**Vapour pressure**

<table>
<thead>
<tr>
<th>Value</th>
<th>23 hPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference temperature</td>
<td>20 °C</td>
</tr>
<tr>
<td>Reference substance</td>
<td>(water)</td>
</tr>
</tbody>
</table>
Density
- Value: 1.03 g/cm³
- Reference temperature: 20 °C

Solubility in water
- Remarks: mixable

pH value
- Value: 8 - 9
- Reference temperature: 20 °C

Other information
- The physical specifications are approximate values and refer to the used safety relevant component(s).

10.) Stability and reactivity

Conditions to avoid
- Stable under recommended storage and handling conditions (See section 7).

Materials to avoid
- Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

Hazardous decomposition products
- When exposed to high temperatures, dangerous decomposition products such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced.

11.) Toxicological information

Experience in practice
- Exposure to component solvents vapours concentration in excess of the stated workplace exposure limit may result in adverse health effect such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
- May cause sensitization by skin contact.
- Splashes in the eyes may cause mild irritation and cause the eyelids to stick together.
- If swallowed, stomach complaints and irritation of the digestive organs may result.
- Ingredient N-methyl-2-pyrrolidone may cause harm to the unborn child.

Other information
- There are no data available on the preparation itself.
- The product was classified in toxicological terms on the basis of the results of the calculation procedure outlined within General Directive on Preparations (1999/45/EEC).

12.) Ecological information

General information / ecology
- There are no data available on the preparation itself. Do not empty into waters or drains

13.) Disposal considerations

Product
- EWC waste code: 08 01 11* waste paint and varnish containing organic solvents or other dangerous substances
  - Dispose of or incinerate in accordance with corresponding regulations.
Uncontaminated packaging
Dispose of only completely emptied containers!

14.) Transport information

Land transport ADR/RID
Label - - -
Remarks non-dangerous goods

Marine transport IMDG/GGVSee
Class -
UN number -
EmS -
Label -
Remarks The product does not constitute a hazardous substance in sea transport.

Air transport ICAO/IATA
Class -
Packing group -
UN number -
Label -
Remarks The product does not constitute a hazardous substance in air transport.

15.) Regulatory information

Labelling in accordance with EC directives
The product is classified and labelled in accordance with EC directives/GefStoff V

Hazard symbols
T Toxic

Hazardous component(s) to be indicated on label
N-METHYL-2-PYRROLIDONE

R phrases
61 May cause harm to the unborn child.
36/37/38 Irritating to eyes, respiratory system and skin.
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S phrases
53 Avoid exposure --- obtain special instructions before use.
13 Keep away from food, drink and animal feedingstuffs.
20/21 When using do not eat, drink or smoke.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
28.2 After contact with skin, wash immediately with plenty of water and soap.
29 Do not empty into drains.
37/39 Wear suitable gloves and eye/face protection.
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
51 Use only in well-ventilated areas.

Special labelling for certain preparations
“Restricted to professional users”
contains
BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE; METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE; MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE); May produce an allergic reaction.

16.) **Other information**

Other information
According to their chemical structure, the applied raw materials do not contain any antimony, arsenic, soluble barium, lead, cadmium, chromium, mercury and selenium.

**N-METHYL-2-PYRROLIDONE**
36/37/38 Irritating to eyes, respiratory system and skin.
61 May cause harm to the unborn child.

**TRIETHYLAMINE**
11 Highly flammable.
20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
35 Causes severe burns.

**2-(2-BUTOXYETHOXY)ETHANOL**
36 Irritating to eyes.

**MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE)**
43 May cause sensitization by skin contact.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE**
43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**TELOMER B MONOETHER WITH POLYETHYLENE GLYCOL**
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE**
43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Department issuing safety data sheet
Product safety.

Contact person
Dipl.-Chem. G. Heller or Dipl.-Ing. U. Voetter.

The instructions are based on today's information and knowledge. The safety data sheet describes products in relation to safety requirements. These instructions do not assure application technological properties of the product.
1.) **Identification of the substance/preparation and of the company/undertaking**

**Identification of the substance or preparation**
- **Trade name**: CLEARSHIELD CSX5000
- **Use of the substance/preparation**: Liquid laminate

**Company/undertaking identification**
- **Address**: Marabu North America LP
  PO Box 40397
  USA  Charleston, SC 29423-0397
  Telephone no. ++1-843-886-0094
  Fax no. ++1-843-886-3701

**E-mail address of person responsible for this SDS**
PRSI@marabu.de

**Information provided by / telephone**
Product safety (+49) (0)7141/691-116 or 232

**Emergency telephone**
- Transportation Emergencies: Chemtrec
  International: 1703 527 3887
  U.S. Domestic: 1-800-424-9300

**Other Emergencies**: 1-843-886-0094

2.) **Hazards possibilities**

**Specific hazards to man and the environment**
The product is water polluting.

3.) **Composition / information on ingredients**

**Chemical characterization**
Liquid laminate containing water, based on polyurethane

4.) **First aid measures**

**General information**
Immediately remove all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical attention. Unconsciousness: lateral position - call a physician.

**After skin contact**
Wash away with soap and water and rinse. Do NOT use solvents or thinners!

**After eye contact**
Flush with plenty of water (10 - 15 min.).

**After ingestion**
Call a physician. Keep at rest. Do not induce vomiting.

5.) **Fire-fighting measures**

**Suitable extinguishing media**
Carbon dioxide, foam, sand, water.

**Special exposure hazards arising from the substance or preparation itself, its combustion products or from resulting gases**

Material supports the burning only after evaporation of the watery content. In this case, dangerous smoke gases such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced. Therefore, take suitable precautionary measures for fire fighting. Residues remaining after a fire have to be disposed of appropriately.

**Special protective equipment for fire-fighting**

Breathing apparatus with an independent source of air may be required.

6.) **Accidental release measures**

**Personal precautions**

No particular measures required.

**Environmental precautions**

Do not empty into drains. If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations.

**Methods for cleaning up**

Remove by liquid absorbing material (e.g. kieselguhr) and process according to waste regulations. Clean preferably with a detergent; avoid use of solvents.

7.) **Handling and storage**

**Handling**

**Advice on safe handling**

Avoid vapour concentration higher than the workplace exposure limits. Do not leave containers open. Avoid contact with skin and eyes. Avoid inhalation of vapour and spray mist. When using do not eat, drink or smoke. Comply with the health and safety at work laws.

**Advice on protection against fire and explosion**

Material supports the burning only after evaporation of the watery content.

**Storage**

**Requirements for storage rooms and vessels**

Store in cool but frostfree conditions in frostfree containers. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

**Hints on storage assembly**

Keep away from oxidizing agents, from strongly alkaline and strongly acid materials.

**Further information on storage conditions**

Keep containers dry and cool.

8.) **Expose controls/personal protection**

**Exposure limit values**

N O N E

**Exposure controls**

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

**Occupational exposure controls**

**Respiratory protection**

Breathing protection equipment required in inadequately ventilated places and during spraying. 
Respiratory filter (gas) : A
Respiratory filter (part): P2
Hand protection

Chemical protection gloves are suitable, which are tested according to EN 374.

Recommendation for protection against components normally found in the products:

For short-term contact (e.g. spray protection) as well as for long-term contact (e.g. cleaning purposes):

Suitable material: LLDPE
Material thickness: 0.06 mm
Penetration time: >480 min.

Protective gloves must always be tested and confirmed with regard to suitability to each specific working environment (e.g. mechanical resistance, product compatibility, antistatic).

Follow the instructions and information from the glove manufacturer in reference to use, storage, care, and frequency of glove exchange.

Protective gloves should be immediately replaced upon being damaged or when showing first signs of wear. Preventive skin protection (skin protective cream) is recommended. Contaminated skin areas should immediately be washed (follow data sheet for skin protection M 042).

Working procedures are to be so arranged that the permanent wearing of gloves will not be necessary.

We recommend to set up a hand protection plan, which is adapted to the needs of the local business. Further information is provided in the publications of Bundesverband Handschutz (nos. 6 and 9) and BG Druck und Papierverarbeitung (528.1, 528.2, 531.X).

Eye protection

Use safety glasses.

Skin protection

Use re-greasing skin cream.

General protective and hygiene measures

The usual precautionary measures for the handling of chemicals have to be observed.

9.) Physical and chemical properties

General information

<table>
<thead>
<tr>
<th>Form</th>
<th>pasty</th>
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<tbody>
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<td>whitish transpar.</td>
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<tr>
<td>Odour</td>
<td>neutral</td>
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Important health, safety and environmental information

Changes in physical state

<table>
<thead>
<tr>
<th>Type</th>
<th>Starts to boil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>100 °C</td>
</tr>
<tr>
<td>Reference substance</td>
<td>(water)</td>
</tr>
</tbody>
</table>

Flash point

<table>
<thead>
<tr>
<th>Value</th>
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</tr>
</thead>
</table>

Ignition temperature

<table>
<thead>
<tr>
<th>Value</th>
<th>not applicable</th>
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</table>

Explosion limits

<table>
<thead>
<tr>
<th>Remarks</th>
<th>not applicable</th>
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</table>

Vapour pressure

<table>
<thead>
<tr>
<th>Value</th>
<th>23 hPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference temperature</td>
<td>20 °C</td>
</tr>
<tr>
<td>Reference substance</td>
<td>(water)</td>
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</tbody>
</table>
10.) **Stability and reactivity**

**Conditions to avoid**
Stable under recommended storage and handling conditions (See section 7).

**Materials to avoid**
Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

**Hazardous decomposition products**
When exposed to high temperatures, dangerous decomposition products such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced.

11.) **Toxicological information**

**Experience in practice**
Splashes in the eyes may cause mild irritation and cause the eyelids to stick together. If swallowed, stomach complaints and irritation of the digestive organs may result.

**Other information**
There are no data available on the preparation itself. The product was classified in toxicological terms on the basis of the results of the calculation procedure outlined within General Directive on Preparations (1999/45/EEC).

12.) **Ecological information**

**General information / ecology**
There are no data available on the preparation itself. Do not empty into waters or drains

13.) **Disposal considerations**

**Product**
Dispose of or incinerate in accordance with corresponding regulations. Code of waste pursuant to European Council Directive on waste: 080313 (Wastes from the manufacture, formulation, supply and use (MFSU) of coatings (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks - wastes from MFSU of printing inks - waste ink other than those mentioned in 080312*).

**Uncontaminated packaging**
Dispose of only completely emptied containers! Code of waste pursuant to European Council Directive on waste: 150102 (Waste of packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified - packaging (including separately collected municipal packaging waste) - plastic packaging).

14.) **Transport information**

**Land transport ADR/RID**
Remarks: non-dangerous goods

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Density
Value: not determined

Solubility in water
Remarks: mixable

pH value
Remarks: not determined

Other information
The physical specifications are approximate values and refer to the used safety relevant component(s).
Marine transport IMDG/GGVSee

Class -
UN number -
EmS -
Remarks The product does not constitute a hazardous substance in sea transport.

Air transport ICAO/IATA

Class -
Packing group -
UN number -
Remarks The product does not constitute a hazardous substance in air transport.

15.) Regulatory information

Labelling in accordance with EC directives
The product does not require a hazard warning label in accordance with EC directives/ GefStoffV (German regulations on dangerous substances).

16.) Other information

Other information
According to their chemical structure, the applied raw materials do not contain any antimony, arsenic, soluble barium, lead, cadmium, chromium, mercury and selenium.

Department issuing safety data sheet
Product safety.

Contact person
Dipl.-Chem. G. Heller or Dipl.-Ing. U. Voetter.

The instructions are based on today's information and knowledge. The safety data sheet describes products in relation to safety requirements. These instructions do not assure application technological properties of the product.
1.) Identification of the substance/preparation and of the company/undertaking

Identification of the substance or preparation

Trade name
CLEARSHIELD ORG LL 20° SATIN

Use of the substance/preparation
Liquid laminate

Company/undertaking identification

Address
Marabu North America LP
PO Box 40397
USA Charleston, SC 29423-0397
Telephone no. ++1-843-886-0094
Fax no. ++1-843-886-3701

E-mail address of person responsible for this SDS
PRSI@marabu.de

Information provided by / telephone
Product safety (+49) (0)7141/691-116 or 232

Emergency telephone
Transportation Emergencies: Chemtrec
International: 1703 527 3887
U.S. Domestic: 1-800-424-9300

Other Emergencies: 1-843-886-0094

2.) Hazards possibilities

Classification

R52/53

R phrases
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Specific hazards to man and the environment
The product is water polluting.

3.) Composition / information on ingredients

Chemical characterization
Liquid laminate containing water, based on polyurethane

Hazardous ingredients

(2-METHOXYMETHYLETHOXY)PROPANOL
CAS no. 34590-94-8
EINECS no. 252-104-2
Concentration >= 1 < 5 %-%-b.w.

N-METHYL-2-PYRROLIDONE
CAS no. 872-50-4
EINECS no. 212-828-1
Concentration >= 1 < 5 %-%-b.w.
Classification Xi;R36/38
Repr.Cat. 2;R61
1-METHOXY-2-PROPANOL
CAS no. 107-98-2
EINECS no. 203-539-1
Concentration >= 1 < 5 %-%b.w.
Classification R10

MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-
HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-
BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-
BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE)
ELINC number 400-830-7
Concentration >= 0,5 < 1 %-%b.w.
Classification Xi;R43
N;R51/53

SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.
CAS no. 64742-95-6
EINECS no. 265-199-0
Concentration >= 0,5 < 1 %-%b.w.
Classification Xn;R65
Xi;R37
R10
R66
R67

BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE
CAS no. 41556-26-7
EINECS no. 255-437-1
Concentration < 0,5 %-%b.w.
Classification R43
N;R50/53

TELOMER B MONOETHER WITH POLYETHYLENE GLYCOL
CAS no. 65545-80-4
Concentration < 0,5 %-%b.w.
Classification N;R51/53

1,2,4-TRIMETHYLBENZENE
CAS no. 95-63-6
EINECS no. 202-436-9
Concentration < 0,5 %-%b.w.
Classification R10
Xn;R20
Xi;R36/37/38
N;R51/53

METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE
CAS no. 82919-37-7
EINECS no. 280-060-4
Concentration < 0,5 %-%b.w.
Classification R43
N;R50/53
4.) First aid measures

General information
Immediately remove all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical attention. Unconsciousness: lateral position - call a physician.

After inhalation
Take the casualty into the fresh air and keep warm. Irregular breathing/no breathing: artificial respiration. Call a physician.

After skin contact
Wash away with soap and water and rinse. Do NOT use solvents or thinners!

After eye contact
Flush with plenty of water (10 - 15 min.).

After ingestion
Call a physician. Keep at rest. Do not induce vomiting.

5.) Fire-fighting measures

Suitable extinguishing media
Carbon dioxide, foam, sand, water.

Special exposure hazards arising from the substance or preparation itself, its combustion products or from resulting gases
Material supports the burning only after evaporation of the watery content. In this case, dangerous smoke gases such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced. Therefore, take suitable precautionary measures for fire fighting. Residues remaining after a fire have to be disposed of appropriately.

Special protective equipment for fire-fighting
Breathing apparatus with an independent source of air may be required.

Other information
Cool endangered containers with water in case of fire.

6.) Accidental release measures

Personal precautions
Provide for good ventilation. Do not breathe vapours. Refer to protective measures listed in sections 7 and 8.

Environmental precautions
Do not empty into drains. If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations.

Methods for cleaning up
Remove by liquid absorbing material (e.g. kieselguhr) and process according to waste regulations. Clean preferably with a detergent; avoid use of solvents.
7.) **Handling and storage**

**Handling**

**Advice on safe handling**
Avoid vapour concentration higher than the workplace exposure limits. Do not leave containers open. Avoid contact with skin and eyes. Avoid inhalation of vapour and spray mist. When using do not eat, drink or smoke. Comply with the health and safety at work laws.

**Advice on protection against fire and explosion**
Material supports the burning only after evaporation of the watery content.

**Storage**

**Requirements for storage rooms and vessels**
Store in cool but frostfree conditions in frostfree containers. Keep container tightly closed. Never use pressure to empty: container is not a pressure vessel. No smoking. Prevent unauthorized access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

**Hints on storage assembly**
Keep away from oxidizing agents, from strongly alkaline and strongly acid materials.

**Further information on storage conditions**
Always keep in containers of same material as the original one.

8.) **Expose controls/personal protection**

**Exposure limit values**

**ANHYDROUS AMMONIA**

- 2000/39/EC
  - Value: 20 ml/m³, STEL: 50 ml/m³, WEL (EH40/2005) Value: 25 ml/m³, STEL: 35 ml/m³
  - Value 20 ml/m³, STEL 50 ml/m³, WEL (EH40/2005) Value 25 ml/m³, STEL 35 ml/m³

**1-METHOXY-2-PROPanOL**

- 2000/39/EC
  - Value: 100 ml/m³, STEL: 150 ml/m³, Skin resorption / sensibilisation: Value: 100 ml/m³, STEL: 150 ml/m³
  - Value 100 ml/m³, STEL 150 ml/m³, Skin resorption / sensibilisation: Value 100 ml/m³, STEL 150 ml/m³

**N-METHYL-2-PYRROLiDONE**

- WEL (EH40/2005)
  - Value: 25 ml/m³, STEL: 75 ml/m³, Skin resorption / sensibilisation: Value: 25 ml/m³, STEL: 75 ml/m³
  - Value 25 ml/m³, STEL 75 ml/m³, Skin resorption / sensibilisation: Value 25 ml/m³, STEL 75 ml/m³

**1,2,4-TRIMETHYLBENZENE**

- 2000/39/EC
  - Value: 20 ml/m³, WEL (EH40/2005) Value: 25 ml/m³
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---

7.) **Handling and storage**

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Avoid vapour concentration higher than the workplace exposure limits. Do not leave containers open. Avoid contact with skin and eyes. Avoid inhalation of vapour and spray mist. When using do not eat, drink or smoke. Comply with the health and safety at work laws.

**Advice on protection against fire and explosion**
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Store in cool but frostfree conditions in frostfree containers. Keep container tightly closed. Never use pressure to empty: container is not a pressure vessel. No smoking. Prevent unauthorized access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

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Keep away from oxidizing agents, from strongly alkaline and strongly acid materials.

**Further information on storage conditions**
Always keep in containers of same material as the original one.

8.) **Expose controls/personal protection**

**Exposure limit values**

**ANHYDROUS AMMONIA**

- 2000/39/EC
  - Value: 20 ml/m³, STEL: 50 ml/m³, WEL (EH40/2005) Value: 25 ml/m³, STEL: 35 ml/m³
  - Value 20 ml/m³, STEL 50 ml/m³, WEL (EH40/2005) Value 25 ml/m³, STEL 35 ml/m³

**1-METHOXY-2-PROPanOL**

- 2000/39/EC
  - Value: 100 ml/m³, STEL: 150 ml/m³, Skin resorption / sensibilisation: Value: 100 ml/m³, STEL: 150 ml/m³
  - Value 100 ml/m³, STEL 150 ml/m³, Skin resorption / sensibilisation: Value 100 ml/m³, STEL 150 ml/m³

**N-METHYL-2-PYRROLiDONE**

- WEL (EH40/2005)
  - Value: 25 ml/m³, STEL: 75 ml/m³, Skin resorption / sensibilisation: Value: 25 ml/m³, STEL: 75 ml/m³
  - Value 25 ml/m³, STEL 75 ml/m³, Skin resorption / sensibilisation: Value 25 ml/m³, STEL 75 ml/m³

**1,2,4-TRIMETHYLBENZENE**

- 2000/39/EC
  - Value: 20 ml/m³, WEL (EH40/2005) Value: 25 ml/m³
  - Value 20 ml/m³, WEL (EH40/2005) Value 25 ml/m³
(2-METHOXYMETHYLETHOXY)PROPANOL

2000/39/EC

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<td>308</td>
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WEL (EH40/2005)

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</tr>
</tbody>
</table>

Exposure controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

Occupational exposure controls

Respiratory protection

Breathing protection equipment required in inadequately ventilated places and during spraying.

Respiratory filter (gas): A
Respiratory filter (part): P2

Hand protection

Chemical protection gloves are suitable, which are tested according to EN 374.

Recommendation for protection against components normally found in the products:

For short-term contact (e.g. spray protection) as well as for long-term contact (e.g. cleaning purposes):

Suitable material: LLDPE
Material thickness: 0.06 mm
Penetration time: >480 min.

Protective gloves must always be tested and confirmed with regard to suitability to each specific working environment (e.g. mechanical resistance, product compatibility, antistatic).

Follow the instructions and information from the glove manufacturer in reference to use, storage, care, and frequency of glove exchange.

Protective gloves should be immediately replaced upon being damaged or when showing first signs of wear. Preventive skin protection (skin protective cream) is recommended. Contaminated skin areas should immediately be washed (follow data sheet for skin protection M 042).

Working procedures are to be so arranged that the permanent wearing of gloves will not be necessary.

We recommend to set up a hand protection plan, which is adapted to the needs of the local business. Further information is provided in the publications of Bundesverband Handschutz (nos. 6 and 9) and BG Druck und Papierverarbeitung (528.1, 528.2, 531.X).

Eye protection

Use safety glasses.

Skin protection

All parts of the body should be washed after contact. Use re-greasing skin cream.

General protective and hygiene measures

The usual precautionary measures for the handling of chemicals have to be observed.
9.) **Physical and chemical properties**

**General information**
- Form: liquid
- Colour: milky
- Odour: like solvent

**Important health, safety and environmental information**

**Changes in physical state**
- **Type:** Starts to boil
- **Value:** 100 °C
- **Reference substance:** (water)

**Flash point**
- **Value:** not applicable

**Ignition temperature**
- **Value:** not applicable

**Explosion limits**
- **Remarks:** not applicable

**Vapour pressure**
- **Value:** 23 hPa
- **Reference temperature:** 20 °C
- **Reference substance:** (water)

**Density**
- **Value:** 1.03 g/cm³
- **Reference temperature:** 20 °C

**Solubility in water**
- **Remarks:** mixable

**pH value**
- **Value:** 8 - 9
- **Reference temperature:** 20 °C

**Other information**
- The physical specifications are approximate values and refer to the used safety relevant component(s).

10.) **Stability and reactivity**

**Conditions to avoid**
- Stable under recommended storage and handling conditions (See section 7).

**Materials to avoid**
- Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

**Hazardous decomposition products**
- When exposed to high temperatures, dangerous decomposition products such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced.

11.) **Toxicological information**

**Experience in practice**
- Exposure to component solvents vapours concentration in excess of the stated workplace exposure limit may result in adverse health effect such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
May cause sensitization by skin contact.
Splashes in the eyes may cause mild irritation and cause the eyelids to stick together.
If swallowed, stomach complaints and irritation of the digestive organs may result.
Ingredient N-methyl-2-pyrrolidone may cause harm to the unborn child.

Other information
There are no data available on the preparation itself.
The product was classified in toxicological terms on the basis of the results of the calculation procedure outlined within General Directive on Preparations (1999/45/EEC).

12.) Ecological information

General information / ecology
There are no data available on the preparation itself. Do not empty into waters or drains

13.) Disposal considerations

Product
EWC waste code 08 01 11* waste paint and varnish containing organic solvents or other dangerous substances
Dispose of or incinerate in accordance with corresponding regulations.

Uncontaminated packaging
Dispose of only completely emptied containers!

14.) Transport information

Land transport ADR/RID
Label - - -
Remarks non-dangerous goods

Marine transport IMDG/GGVSee
Class -
UN number -
EmS -
Label -
Remarks The product does not constitute a hazardous substance in sea transport.

Air transport ICAO/IATA
Class -
Packing group -
UN number -
Label -
Remarks The product does not constitute a hazardous substance in air transport.

15.) Regulatory information

Labelling in accordance with EC directives
The product is classified and labelled in accordance with EC directives/GefStoff V

R phrases
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S phrases
29 Do not empty into drains.
contains
BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE; METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE; MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE); May produce an allergic reaction.

16.) Other information

Other information
According to their chemical structure, the applied raw materials do not contain any antimony, arsenic, soluble barium, lead, cadmium, chromium, mercury and selenium.

N-METHYL-2-PYRROLIDONE
36/37/38 Irritating to eyes, respiratory system and skin.
61 May cause harm to the unborn child.

1-METHOXY-2-PROPANOL
10 Flammable.

MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE)
43 May cause sensitization by skin contact.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.
65 Harmful: may cause lung damage if swallowed.
10 Flammable.
37 Irritating to respiratory system.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
66 Repeated exposure may cause skin dryness or cracking.
67 Vapours may cause drowsiness and dizziness.

BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE
43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

TELOMER B MONOETHER WITH POLYETHYLENE GLYCOL
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

1,2,4-TRIMETHYLBENZENE
10 Flammable.
20 Harmful by inhalation.
36/37/38 Irritating to eyes, respiratory system and skin.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE
43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

ANHYDROUS AMMONIA
10 Flammable.
23 Toxic by inhalation.
34 Causes burns.
50 Very toxic to aquatic organisms.
Contact person
Dipl.-Chem. G. Heller or Dipl.-Ing. U. Voetter.

The instructions are based on today's information and knowledge. The safety data sheet describes products in relation to safety requirements. These instructions do not assure application technological properties of the product.
1.) **Identification of the substance/preparation and of the company/undertaking**

**Identification of the substance or preparation**
- **Trade name**
  CLEARSHIELD GLOSS
- **Use of the substance/preparation**
  Liquid laminate

**Company/undertaking identification**
- **Address**
  Marabu North America LP  
  PO Box 40397  
  USA Charleston, SC 29423-0397
- **Telephone no.** ++1-843-886-0094
- **Fax no.** ++1-843-886-3701
- **E-mail address of person responsible for this SDS**
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  International: 1703 527 3887  
  U.S. Domestic: 1-800-424-9300
- **Other Emergencies**: 1-843-886-0094

2.) **Hazards possibilities**

**Classification**
- **R52/53**

**R phrases**
- **52/53** Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Specific hazards to man and the environment**
- The product is water polluting.

3.) **Composition / information on ingredients**

**Hazardous ingredients**

(2-METHOXYMETHYLETHOXY)PROPANOL
- **CAS no.** 34590-94-8
- **EINECS no.** 252-104-2
- **Concentration** >= 1 < 5 %-b.w.

N-METHYL-2-PYRROLIDONE
- **CAS no.** 872-50-4
- **EINECS no.** 212-828-1
- **Concentration** >= 1 < 5 %-b.w.
- **Classification** Xi;R36/38  
  Repr.Cat. 2;R61
1-METHOXY-2-PROPANOL
CAS no. 107-98-2
EINECS no. 203-539-1
Concentration >= 1 < 5 %-b.w.
Classification R10

MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE)
ELINCS number 400-830-7
Concentration >= 0,5 < 1 %-b.w.
Classification Xi;R43
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SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.
CAS no. 64742-95-6
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Concentration >= 0,5 < 1 %-b.w.
Classification Xn;R65
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N;R51/53
R10
R66
R67

BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE
CAS no. 41556-26-7
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CAS no. 65545-80-4
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CAS no. 95-63-6
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CAS no. 82919-37-7
EINECS no. 280-060-4
Concentration < 0,5 %-b.w.
Classification R43
N;R50/53
ANHYDROUS AMMONIA

CAS no. 7664-41-7
EINECS no. 231-635-3
Concentration < 0,5 % - b.w.
Classification R10
T;R23
C;R34
N;R50

4.) First aid measures

General information
Immediately remove all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical attention. Unconsciousness: lateral position - call a physician.

After inhalation
Take the casualty into the fresh air and keep warm. Irregular breathing/no breathing: artificial respiration. Call a physician.

After skin contact
Wash away with soap and water and rinse. Do NOT use solvents or thinners!

After eye contact
Flush with plenty of water (10 - 15 min.).

After ingestion
Call a physician. Keep at rest. Do not induce vomiting.

5.) Fire-fighting measures

Suitable extinguishing media
Carbon dioxide, foam, sand, water.

Special exposure hazards arising from the substance or preparation itself, its combustion products or from resulting gases
Material supports the burning only after evaporation of the watery content. In this case, dangerous smoke gases such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced. Therefore, take suitable precautionary measures for fire fighting. Residues remaining after a fire have to be disposed of appropriately.

Special protective equipment for fire-fighting
Breathing apparatus with an independent source of air may be required.

Other information
Cool endangered containers with water in case of fire.

6.) Accidental release measures

Personal precautions
Provide for good ventilation. Do not breathe vapours. Refer to protective measures listed in sections 7 and 8.

Environmental precautions
Do not empty into drains. If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations.

Methods for cleaning up
Remove by liquid absorbing material (e.g. kieselguhr) and process according to waste regulations. Clean preferably with a detergent; avoid use of solvents.
7.) **Handling and storage**

**Handling**

**Advice on safe handling**
Avoid vapour concentration higher than the workplace exposure limits. Do not leave containers open.
Avoid contact with skin and eyes. Avoid inhalation of vapour and spray mist. When using do not eat, drink or smoke. Comply with the health and safety at work laws.

**Advice on protection against fire and explosion**
Material supports the burning only after evaporation of the watery content.

**Storage**

**Requirements for storage rooms and vessels**
Store in cool but frostfree conditions in frostfree containers. Keep container tightly closed. Never use pressure to empty: container is not a pressure vessel. No smoking. Prevent unauthorized access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

**Hints on storage assembly**
Keep away from oxidizing agents, from strongly alkaline and strongly acid materials.

**Further information on storage conditions**
Always keep in containers of same material as the original one.

8.) **Expose controls/personal protection**

**Exposure limit values**

<table>
<thead>
<tr>
<th></th>
<th>ANHYDROUS AMMONIA</th>
<th>1-METHOXY-2-PROPANOL</th>
<th>N-METHYL-2-PYRROLIDONE</th>
<th>1,2,4-TRIMETHYLBENZENE</th>
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<tr>
<td><strong>2000/39/EC</strong></td>
<td>Value 20 ml/m³ 14 mg/m³</td>
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<td>Value 25 ml/m³ 103 mg/m³</td>
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<td><strong>STEL</strong></td>
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</tbody>
</table>

**1,2,4-TRIMETHYLBENZENE**

|                | 2000/39/EC | Value 20 ml/m³ 100 mg/m³ | WEL (EH40/2005) | Value 25 ml/m³ 125 mg/m³ |
(2-METHOXYMETHYLETHOXY)PROPANOL

2000/39/EC

Value | 50 ml/m³ | 308 mg/m³
Skin resorption / sensibilisation

WEL (EH40/2005)

Value | 50 ml/m³ | 308 mg/m³
Skin resorption / sensibilisation

Exposure controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

Occupational exposure controls

Respiratory protection
Breathing protection equipment required in inadequately ventilated places and during spraying.
Respiratory filter (gas) : A
Respiratory filter (part): P2

Hand protection
Chemical protection gloves are suitable, which are tested according to EN 374.

Recommendation for protection against components normally found in the products:

For short-term contact (e.g. spray protection) as well as for long-term contact (e.g. cleaning purposes):

Suitable material: LLDPE
Material thickness: 0.06 mm
Penetration time: >480 min.

Protective gloves must always be tested and confirmed with regard to suitability to each specific working environment (e.g. mechanical resistance, product compatibility, antistatic).

Follow the instructions and information from the glove manufacturer in reference to use, storage, care, and frequency of glove exchange.

Protective gloves should be immediately replaced upon being damaged or when showing first signs of wear. Preventive skin protection (skin protective cream) is recommended. Contaminated skin areas should immediately be washed (follow data sheet for skin protection M 042).

Working procedures are to be so arranged that the permanent wearing of gloves will not be necessary.

We recommend to set up a hand protection plan, which is adapted to the needs of the local business. Further information is provided in the publications of Bundesverband Handschutz (nos. 6 and 9) and BG Druck und Papierverarbeitung (528.1, 528.2, 531.X).

Eye protection
Use safety glasses.

Skin protection
All parts of the body should be washed after contact. Use re-greasing skin cream.

General protective and hygiene measures
The usual precautionary measures for the handling of chemicals have to be observed.
9.) **Physical and chemical properties**

**General information**
- Form: liquid
- Colour: milky
- Odour: like solvent

**Important health, safety and environmental information**

**Changes in physical state**
- **Type**: Starts to boil
- **Value**: 100 °C
- **Reference substance**: (water)

**Flash point**
- **Value**: not applicable

**Ignition temperature**
- **Value**: not applicable

**Explosion limits**
- **Remarks**: not applicable

**Vapour pressure**
- **Value**: 23 hPa
- **Reference temperature**: 20 °C
- **Reference substance**: (water)

**Density**
- **Value**: 1.03 g/cm³
- **Reference temperature**: 20 °C

**Solubility in water**
- **Remarks**: mixable

**pH value**
- **Value**: 8 - 9
- **Reference temperature**: 20 °C

**Other information**
The physical specifications are approximate values and refer to the used safety relevant component(s).

10.) **Stability and reactivity**

**Conditions to avoid**
Stable under recommended storage and handling conditions (See section 7).

**Materials to avoid**
Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

**Hazardous decomposition products**
When exposed to high temperatures, dangerous decomposition products such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced.

11.) **Toxicological information**

**Experience in practice**
Exposure to component solvents vapours concentration in excess of the stated workplace exposure limit may result in adverse health effect such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
May cause sensitization by skin contact. 
Splashes in the eyes may cause mild irritation and cause the eyelids to stick together. 
If swallowed, stomach complaints and irritation of the digestive organs may result. 
Ingredient N-methyl-2-pyrrolidone may cause harm to the unborn child.

Other information
There are no data available on the preparation itself. The product was classified in toxicological terms on the basis of the results of the calculation procedure outlined within General Directive on Preparations (1999/45/EEC).

12.) Ecological information

General information / ecology
There are no data available on the preparation itself. Do not empty into waters or drains

13.) Disposal considerations

Product 
EWC waste code 08 01 11* waste paint and varnish containing organic solvents or other dangerous substances 
Dispose of or incinerate in accordance with corresponding regulations.

Uncontaminated packaging
Dispose of only completely emptied containers!

14.) Transport information

Land transport ADR/RID
Label - - -
Remarks non-dangerous goods

Marine transport IMDG/GGVSee
Class -
UN number -
EmS -
Label -
Remarks The product does not constitute a hazardous substance in sea transport.

Air transport ICAO/IATA
Class -
Packing group -
UN number -
Label -
Remarks The product does not constitute a hazardous substance in air transport.

15.) Regulatory information

Labelling in accordance with EC directives
The product is classified and labelled in accordance with EC directives/GefStoff V

R phrases
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S phrases
29 Do not empty into drains.
contains
BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE; METHYL 1,2,2,6,6-PENTAMETHYL-4-
PIPERIDYL SEBACATE; MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-
HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-
BENZOTRIAZOL-2-YL)-
5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-
TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE); May produce an
allergic reaction.

16.) Other information

According to their chemical structure, the applied raw materials do not contain any antimony, arsenic,
soluble barium, lead, cadmium, chromium, mercury and selenium.

N-METHYL-2-PYRROLIDONE
36/37/38 Irritating to eyes, respiratory system and skin.
61 May cause harm to the unborn child.

1-METHOXY-2-PROPANOL
10 Flammable.

MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-
HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-
BENZOTRIAZOL-2-YL)-
5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-
BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE)
43 May cause sensitization by skin contact.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the
aquatic environment.

SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.
65 Harmful: may cause lung damage if swallowed.
10 Flammable.
37 Irritating to respiratory system.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the
aquatic environment.
66 Repeated exposure may cause skin dryness or cracking.
67 Vapours may cause drowsiness and dizziness.

BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE
43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects
in the aquatic environment.

TELOMER B MONOETHER WITH POLYETHYLENE GLYCOL
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the
aquatic environment.

1,2,4-TRIMETHYLBENZENE
10 Flammable.
20 Harmful by inhalation.
36/37/38 Irritating to eyes, respiratory system and skin.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the
aquatic environment.

METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE
43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects
in the aquatic environment.

ANHYDROUS AMMONIA
10 Flammable.
23 Toxic by inhalation.
34 Causes burns.
50 Very toxic to aquatic organisms.
Department issuing safety data sheet

Product safety.

Contact person
Dipl.-Chem. G. Heller or Dipl.-Ing. U. Voetter.

The instructions are based on today's information and knowledge. The safety data sheet describes products in relation to safety requirements. These instructions do not assure application technological properties of the product.
1.) **Identification of the substance/preparation and of the company/undertaking**

**Identification of the substance or preparation**

**Trade name**
CLEARSHIELD MATTE

**Use of the substance/preparation**
Liquid laminate

**Company/undertaking identification**

**Address**
Marabu North America LP
PO Box 40397
USA Charleston, SC 29423-0397
Telephone no. ++1-843-886-0094
Fax no. ++1-843-886-3701

**E-mail address of person responsible for this SDS**
PRSI@marabu.de

**Information provided by / telephone**
Product safety (+49) (0)7141/691-116 or 232

**Emergency telephone**
Transportation Emergencies: Chemtrec
International: 1703 527 3887
U.S. Domestic: 1-800-424-9300

Other Emergencies: 1-843-886-0094

2.) **Hazards possibilities**

**Classification**
R52/53

**R phrases**
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Specific hazards to man and the environment**
The product is water polluting.

3.) **Composition / information on ingredients**

**Chemical characterization**
Liquid laminate containing water, based on polyurethane

**Hazardous ingredients**

(2-METHOXYMETHYLETHOXY)PROPANOL
CAS no. 34590-94-8
EINECS no. 252-104-2
Concentration >= 1 < 5 %-%-b.w.

N-METHYL-2-PYRROLIDONE
CAS no. 872-50-4
EINECS no. 212-828-1
Concentration >= 1 < 5 %-%-b.w.
Classification Xi;R36/38
Repr.Cat. 2:R61
2-ETHYLHEXYL DIPHENYL PHOSPHATE
CAS no. 1241-94-7
EINECS no. 214-987-2
Concentration >= 1 < 5 %-%bw.
Classification N;R50/53

1-METHOXY-2-PROPANOL
CAS no. 107-98-2
EINECS no. 203-539-1
Concentration >= 1 < 5 %-%bw.
Classification R10

MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE)
ELINCS number 400-830-7
Concentration >= 0,5 < 1 %-%bw.
Classification Xi;R43
N;R51/53

SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.
CAS no. 64742-95-6
EINECS no. 265-199-0
Concentration >= 0,5 < 1 %-%bw.
Classification Xn;R65
Xi;R37
N;R51/53
R10
R66
R67

BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE
CAS no. 41556-26-7
EINECS no. 255-437-1
Concentration < 0,5 %-%bw.
Classification R43
N;R50/53

TELOMER B MONOETHER WITH POLYETHYLENE GLYCOL
CAS no. 65545-80-4
Concentration < 0,5 %-%bw.
Classification N;R51/53

1,2,4-TRIMETHYLBENZENE
CAS no. 95-63-6
EINECS no. 202-436-9
Concentration < 0,5 %-%bw.
Classification R10
Xn;R20
Xi;R36/37/38
N;R51/53
METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE
CAS no. 82919-37-7
EINECS no. 280-060-4
Concentration < 0,5 %-% b.w.
Classification R43
N; R50/53

4.) First aid measures

General information
Immediately remove all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical attention. Unconsciousness: lateral position - call a physician.

After inhalation
Take the casualty into the fresh air and keep warm. Irregular breathing/no breathing: artificial respiration. Call a physician.

After skin contact
Wash away with soap and water and rinse. Do NOT use solvents or thinners!

After eye contact
Flush with plenty of water (10 - 15 min.).

After ingestion
Call a physician. Keep at rest. Do not induce vomiting.

5.) Fire-fighting measures

Suitable extinguishing media
Carbon dioxide, foam, sand, water.

Special exposure hazards arising from the substance or preparation itself, its combustion products or from resulting gases
Material supports the burning only after evaporation of the watery content. In this case, dangerous smoke gases such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced. Therefore, take suitable precautionary measures for fire fighting. Residues remaining after a fire have to be disposed of appropriately.

Special protective equipment for fire-fighting
Breathing apparatus with an independent source of air may be required.

Other information
Cool endangered containers with water in case of fire.

6.) Accidental release measures

Personal precautions
Provide for good ventilation. Do not breathe vapours. Refer to protective measures listed in sections 7 and 8.

Environmental precautions
Do not empty into drains. If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations.

Methods for cleaning up
Remove by liquid absorbing material (e.g. kieselguhr) and process according to waste regulations. Clean preferably with a detergent; avoid use of solvents.

7.) Handling and storage
Handling

Advice on safe handling
Avoid vapour concentration higher than the workplace exposure limits. Do not leave containers open. Avoid contact with skin and eyes. Avoid inhalation of vapour and spray mist. When using do not eat, drink or smoke. Comply with the health and safety at work laws.

Advice on protection against fire and explosion
Material supports the burning only after evaporation of the watery content.

Storage

Requirements for storage rooms and vessels
Store in cool but frostfree conditions in frostfree containers. Keep container tightly closed. Never use pressure to empty: container is not a pressure vessel. No smoking. Prevent unauthorized access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Hints on storage assembly
Keep away from oxidizing agents, from strongly alkaline and strongly acid materials.

Further information on storage conditions
Always keep in containers of same material as the original one.

8.) Expose controls/personal protection

Exposure limit values

1-METHOXY-2-PROPANOL

<table>
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<tr>
<th></th>
<th>2000/39/EC</th>
<th>WEL (EH40/2005)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>100 ml/m³</td>
<td>150 ml/m³</td>
</tr>
<tr>
<td>STEL</td>
<td>375 mg/m³</td>
<td>568 mg/m³</td>
</tr>
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</table>

Skin resorption / sensibilisation

Value 100 ml/m³ 375 mg/m³
STEL 150 ml/m³ 560 mg/m³

N-METHYL-2-PYRROLIDONE

<table>
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<tr>
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<th>WEL (EH40/2005)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>25 ml/m³</td>
</tr>
<tr>
<td>STEL</td>
<td>75 ml/m³</td>
</tr>
</tbody>
</table>

Skin resorption / sensibilisation

Value 100 ml/m³ 375 mg/m³
STEL 150 ml/m³ 560 mg/m³

1,2,4-TRIMETHYLBENZENE

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Value</td>
<td>20 ml/m³</td>
</tr>
<tr>
<td>WEL (EH40/2005)</td>
<td>25 ml/m³</td>
</tr>
</tbody>
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Skin resorption / sensibilisation

Value 100 ml/m³ 100 mg/m³
STEL 125 mg/m³

(2-METHOXYMETHYLETHOXY)PROPANOL

<table>
<thead>
<tr>
<th></th>
<th>2000/39/EC</th>
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<tbody>
<tr>
<td>Value</td>
<td>50 ml/m³</td>
</tr>
<tr>
<td>WEL (EH40/2005)</td>
<td>50 ml/m³</td>
</tr>
</tbody>
</table>

Skin resorption / sensibilisation

Value 308 mg/m³
STEL 308 mg/m³
Exposure controls
Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

Occupational exposure controls

Respiratory protection
Breathing protection equipment required in inadequately ventilated places and during spraying.
Respiratory filter (gas): A
Respiratory filter (part): P2

Hand protection
Chemical protection gloves are suitable, which are tested according to EN 374.

Recommendation for protection against components normally found in the products:

For short-term contact (e.g. spray protection) as well as for long-term contact (e.g. cleaning purposes):

Suitable material: LLDPE
Material thickness: 0.06 mm
Penetration time: >480 min.

Protective gloves must always be tested and confirmed with regard to suitability to each specific working environment (e.g. mechanical resistance, product compatibility, antistatic).

Follow the instructions and information from the glove manufacturer in reference to use, storage, care, and frequency of glove exchange.

Protective gloves should be immediately replaced upon being damaged or when showing first signs of wear. Preventive skin protection (skin protective cream) is recommended. Contaminated skin areas should immediately be washed (follow data sheet for skin protection M 042).

Working procedures are to be so arranged that the permanent wearing of gloves will not be necessary.

We recommend to set up a hand protection plan, which is adapted to the needs of the local business. Further information is provided in the publications of Bundesverband Handschutz (nos. 6 and 9) and BG Druck und Papierverarbeitung (528.1, 528.2, 531.X).

Eye protection
Use safety glasses.

Skin protection
All parts of the body should be washed after contact. Use re-greasing skin cream.

General protective and hygiene measures
The usual precautionary measures for the handling of chemicals have to be observed.

9.) Physical and chemical properties

General information
Form liquid
Colour milky
Odour like solvent

Important health, safety and environmental information

Changes in physical state
Type Starts to boil
Value 100 °C
Reference substance (water)
Flash point
Value not applicable

Ignition temperature
Value not applicable

Explosion limits
Remarks not applicable

Vapour pressure
Value 23 hPa
Reference temperature 20 °C
Reference substance (water)

Density
Value 1.08 g/cm³
Reference temperature 20 °C

Solubility in water
Remarks mixable

pH value
Value 8 - 9
Reference temperature 20 °C

Other information
The physical specifications are approximate values and refer to the used safety relevant component(s).

10.) Stability and reactivity

Conditions to avoid
Stable under recommended storage and handling conditions (See section 7).

Materials to avoid
Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

Hazardous decomposition products
When exposed to high temperatures, dangerous decomposition products such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced.

11.) Toxicological information

Experience in practice
Exposure to component solvents vapours concentration in excess of the stated workplace exposure limit may result in adverse health effect such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
May cause sensitization by skin contact.
Splashes in the eyes may cause mild irritation and cause the eyelids to stick together.
If swallowed, stomach complaints and irritation of the digestive organs may result.
Ingredient N-methyl-2-pyrrolidone may cause harm to the unborn child.

Other information
There are no data available on the preparation itself.
The product was classified in toxicological terms on the basis of the results of the calculation procedure outlined within General Directive on Preparations (1999/45/EEC).

12.) Ecological information

General information / ecology
There are no data available on the preparation itself. Do not empty into waters or drains.
13.) **Disposal considerations**

**Product**

- EWC waste code: 08 01 11* waste paint and varnish containing organic solvents or other dangerous substances

Dispose of or incinerate in accordance with corresponding regulations.

**Uncontaminated packaging**

Dispose of only completely emptied containers!


14.) **Transport information**

**Land transport ADR/RID**

- Label:
- Remarks: non-dangerous goods

**Marine transport IMDG/GGVSee**

- Class:
- UN number:
- EmS:
- Label:
- Remarks: The product does not constitute a hazardous substance in sea transport.

**Air transport ICAO/IATA**

- Class:
- Packing group:
- UN number:
- Label:
- Remarks: The product does not constitute a hazardous substance in air transport.

15.) **Regulatory information**

**Labelling in accordance with EC directives**

The product is classified and labelled in accordance with EC directives/GefStoff V

**R phrases**

- 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**S phrases**

- 29 Do not empty into drains.

**contains**

- BIS(1,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE; METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE; MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE); May produce an allergic reaction.

16.) **Other information**

**Other information**

According to their chemical structure, the applied raw materials do not contain any antimony, arsenic, soluble barium, lead, cadmium, chromium, mercury and selenium.
**N-METHYL-2-PYRROLIDONE**
36/37/38 Irritating to eyes, respiratory system and skin.
61 May cause harm to the unborn child.

**2-ETHYLHEXYL DIPHENYL PHOSPHATE**
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**1-METHOXY-2-PROpanol**
10 Flammable.

**MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OXYPOLY(OXYETHYLENE)**
43 May cause sensitization by skin contact.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.**
65 Harmful: may cause lung damage if swallowed.
10 Flammable.
37 Irritating to respiratory system.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
66 Repeated exposure may cause skin dryness or cracking.
67 Vapours may cause drowsiness and dizziness.

**BIS(1,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE**
43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**TELOMER B MONOETHER WITH POLYETHYLENE GLYCOL**
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**1,2,4-TRIMETHYLBENZENE**
10 Flammable.
20 Harmful by inhalation.
36/37/38 Irritating to eyes, respiratory system and skin.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**METHYL 1,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE**
43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Department issuing safety data sheet
Product safety.

Contact person
Dipl.-Chem. G. Heller or Dipl.-Ing. U. Voetter.

The instructions are based on today's information and knowledge. The safety data sheet describes products in relation to safety requirements. These instructions do not assure application technological properties of the product.
1.) Identification of the substance/preparation and of the company/undertaking

Identification of the substance or preparation

Use of the substance/preparation
Liquid laminate

Company/undertaking identification

Address
Marabu North America LP
PO Box 40397
USA Charleston, SC 29423-0397
Telephone no. ++1-843-886-0094
Fax no. ++1-843-886-3701

E-mail address of person responsible for this SDS
PRSI@marabu.de

Information provided by / telephone
Product safety (+49) (0)7141/691-116 or 232

Emergency telephone
Transportation Emergencies: Chemtrec
International: 1703 527 3887
U.S. Domestic: 1-800-424-9300

Other Emergencies: 1-843-886-0094

2.) Hazards possibilities

Classification
R52/53

R phrases
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Specific hazards to man and the environment
The product is water polluting.

3.) Composition / information on ingredients

Chemical characterization
Liquid laminate containing water, based on polyurethane

Hazardous ingredients
(2-METHOXYMETHYLETHOXY)PROPANOL
CAS no. 34590-94-8
EINECS no. 252-104-2
Concentration >= 1 < 5 %-b.w.

N-METHYL-2-PYRROLIDONE
CAS no. 872-50-4
EINECS no. 212-828-1
Concentration >= 1 < 5 %-b.w.
Classification Xi;R36/38 Repr.Cat. 2;R61
1-METHOXY-2-PROPANOL
CAS no. 107-98-2
EINECS no. 203-539-1
Concentration \(\geq 1 < 5\) %-b.w.
Classification R10

MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERN-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERN-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERN-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE)
ELINCS number 400-830-7
Concentration \(\geq 0,5 < 1\) %-b.w.
Classification Xi;R43
N;R51/53

SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.
CAS no. 64742-95-6
EINECS no. 265-199-0
Concentration \(\geq 0,5 < 1\) %-b.w.
Classification Xn;R65
Xi;R37
N;R51/53
R10
R66
R67

BIS(1,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE
CAS no. 41556-26-7
EINECS no. 255-437-1
Concentration \(< 0,5\) %-b.w.
Classification R43
N;R50/53

TELOMER B MONOETHER WITH POLYETHYLENE GLYCOL
CAS no. 65545-80-4
Concentration \(< 0,5\) %-b.w.
Classification N;R51/53

1,2,4-TRIMETHYLBENZENE
CAS no. 95-63-6
EINECS no. 202-436-9
Concentration \(< 0,5\) %-b.w.
Classification R10
Xn;R20
Xi;R36/37/38
N;R51/53

METHYL 1,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE
CAS no. 82919-37-7
EINECS no. 280-060-4
Concentration \(< 0,5\) %-b.w.
Classification R43
N;R50/53
ANHYDROUS AMMONIA
CAS no. 7664-41-7
EINECS no. 231-635-3
Concentration < 0.5 % - b.w.
Classification R10; T; R23; C; R34; N; R50

4.) First aid measures
General information
Immediately remove all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical attention. Unconsciousness: lateral position - call a physician.

After inhalation
Take the casualty into the fresh air and keep warm. Irregular breathing/no breathing: artificial respiration. Call a physician.

After skin contact
Wash away with soap and water and rinse. Do NOT use solvents or thinners!

After eye contact
Flush with plenty of water (10 - 15 min.).

After ingestion
Call a physician. Keep at rest. Do not induce vomiting.

5.) Fire-fighting measures
Suitable extinguishing media
Carbon dioxide, foam, sand, water.

Special exposure hazards arising from the substance or preparation itself, its combustion products or from resulting gases
Material supports the burning only after evaporation of the watery content. In this case, dangerous smoke gases such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced. Therefore, take suitable precautionary measures for fire fighting. Residues remaining after a fire have to be disposed of appropriately.

Special protective equipment for fire-fighting
Breathing apparatus with an independent source of air may be required.

Other information
Cool endangered containers with water in case of fire.

6.) Accidental release measures
Personal precautions
Provide for good ventilation. Do not breathe vapours. Refer to protective measures listed in sections 7 and 8.

Environmental precautions
Do not empty into drains. If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations.

Methods for cleaning up
Remove by liquid absorbing material (e.g. kieselguhr) and process according to waste regulations. Clean preferably with a detergent; avoid use of solvents.
7.) **Handling and storage**

Handling

**Advice on safe handling**
Avoid vapour concentration higher than the workplace exposure limits. Do not leave containers open. Avoid contact with skin and eyes. Avoid inhalation of vapour and spray mist. When using do not eat, drink or smoke. Comply with the health and safety at work laws.

**Advice on protection against fire and explosion**
Material supports the burning only after evaporation of the watery content.

Storage

**Requirements for storage rooms and vessels**
Store in cool but frostfree conditions in frostfree containers. Keep container tightly closed. Never use pressure to empty: container is not a pressure vessel. No smoking. Prevent unauthorized access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

**Hints on storage assembly**
Keep away from oxidizing agents, from strongly alkaline and strongly acid materials.

**Further information on storage conditions**
Always keep in containers of same material as the original one.

8.) **Expose controls/personal protection**

**Exposure limit values**

**ANHYDROUS AMMONIA**

<table>
<thead>
<tr>
<th>2000/39/EC</th>
<th>Value</th>
<th>ml/m³</th>
<th>20</th>
<th>14 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEL</td>
<td>50</td>
<td>ml/m³</td>
<td>50</td>
<td>36 mg/m³</td>
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</tbody>
</table>

**WEL (EH40/2005)**

<table>
<thead>
<tr>
<th>Value</th>
<th>ml/m³</th>
<th>25</th>
<th>18 mg/m³</th>
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</thead>
<tbody>
<tr>
<td>STEL</td>
<td>35</td>
<td>ml/m³</td>
<td>25</td>
</tr>
</tbody>
</table>

**1-METHOXY-2-PROPA NOLE**

<table>
<thead>
<tr>
<th>2000/39/EC</th>
<th>Value</th>
<th>ml/m³</th>
<th>100</th>
<th>375 mg/m³</th>
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<tbody>
<tr>
<td>STEL</td>
<td>150</td>
<td>ml/m³</td>
<td>150</td>
<td>568 mg/m³</td>
</tr>
</tbody>
</table>

**Skin resorption / sensitisation**

**WEL (EH40/2005)**

<table>
<thead>
<tr>
<th>Value</th>
<th>ml/m³</th>
<th>100</th>
<th>375 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEL</td>
<td>150</td>
<td>ml/m³</td>
<td>150</td>
</tr>
</tbody>
</table>

**N-METHYL-2-PYRRO LIDONE**

<table>
<thead>
<tr>
<th>WEL (EH40/2005)</th>
<th>Value</th>
<th>ml/m³</th>
<th>25</th>
<th>103 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>STE L</td>
<td>75</td>
<td>ml/m³</td>
<td>75</td>
<td>309 mg/m³</td>
</tr>
</tbody>
</table>

**Skin resorption / sensitisation**

**1,2,4-TRIMETHYLBENZENE**

<table>
<thead>
<tr>
<th>2000/39/EC</th>
<th>Value</th>
<th>ml/m³</th>
<th>20</th>
<th>100 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL (EH40/2005)</td>
<td>Value</td>
<td>ml/m³</td>
<td>25</td>
<td>125 mg/m³</td>
</tr>
</tbody>
</table>
(2-METHOXYMETHYLETHOXY)PROPANOL

2000/39/EC

Value 50 ml/m³ 308 mg/m³
Skin resorption / sensibilisation

WEL (EH40/2005)

Value 50 ml/m³ 308 mg/m³
Skin resorption / sensibilisation

Exposure controls
Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

Occupational exposure controls

Respiratory protection
Breathing protection equipment required in inadequately ventilated places and during spraying.
Respiratory filter (gas) : A
Respiratory filter (part) : P2

Hand protection
Chemical protection gloves are suitable, which are tested according to EN 374.

Recommendation for protection against components normally found in the products:

For short-term contact (e.g. spray protection) as well as for long-term contact (e.g. cleaning purposes):

Suitable material: LLDPE
Material thickness: 0.06 mm
Penetration time: >480 min.

Protective gloves must always be tested and confirmed with regard to suitability to each specific working environment (e.g. mechanical resistance, product compatibility, antistatic).

Follow the instructions and information from the glove manufacturer in reference to use, storage, care, and frequency of glove exchange.

Protective gloves should be immediately replaced upon being damaged or when showing first signs of wear. Preventive skin protection (skin protective cream) is recommended. Contaminated skin areas should immediately be washed (follow data sheet for skin protection M 042).

Working procedures are to be so arranged that the permanent wearing of gloves will not be necessary.

We recommend to set up a hand protection plan, which is adapted to the needs of the local business. Further information is provided in the publications of Bundesverband Handschutz (nos. 6 and 9) and BG Druck und Papierverarbeitung (528.1, 528.2, 531.X).

Eye protection
Use safety glasses.

Skin protection
All parts of the body should be washed after contact. Use re-greasing skin cream.

General protective and hygiene measures
The usual precautionary measures for the handling of chemicals have to be observed.
9.) **Physical and chemical properties**

**General information**
- **Form**: liquid
- **Colour**: milky
- **Odour**: like solvent

**Important health, safety and environmental information**

**Changes in physical state**
- **Type**: Starts to boil
- **Value**: 100 °C
- **Reference substance**: (water)

**Flash point**
- **Value**: not applicable

**Ignition temperature**
- **Value**: not applicable

**Explosion limits**
- **Remarks**: not applicable

**Vapour pressure**
- **Value**: 23 hPa
- **Reference temperature**: 20 °C
- **Reference substance**: (water)

**Density**
- **Value**: 1.03 g/cm³
- **Reference temperature**: 20 °C

**Solubility in water**
- **Remarks**: mixable

**pH value**
- **Value**: 8 - 9
- **Reference temperature**: 20 °C

**Other information**
- The physical specifications are approximate values and refer to the used safety relevant component(s).

10.) **Stability and reactivity**

**Conditions to avoid**
- Stable under recommended storage and handling conditions (See section 7).

**Materials to avoid**
- Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

**Hazardous decomposition products**
- When exposed to high temperatures, dangerous decomposition products such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced.

11.) **Toxicological information**

**Experience in practice**
- Exposure to component solvents vapours concentration in excess of the stated workplace exposure limit may result in adverse health effect such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
May cause sensitization by skin contact. Splashes in the eyes may cause mild irritation and cause the eyelids to stick together. If swallowed, stomach complaints and irritation of the digestive organs may result.
Ingredient N-methyl-2-pyrrolidone may cause harm to the unborn child.

Other information
There are no data available on the preparation itself. The product was classified in toxicological terms on the basis of the results of the calculation procedure outlined within General Directive on Preparations (1999/45/EC).

12.) Ecological information

General information / ecology
There are no data available on the preparation itself. Do not empty into waters or drains

13.) Disposal considerations

Product
EWC waste code 08 01 11* waste paint and varnish containing organic solvents or other dangerous substances
Dispose of or incinerate in accordance with corresponding regulations.

Uncontaminated packaging
Dispose of only completely emptied containers!

14.) Transport information

Land transport ADR/RID
Label - - -
Remarks non-dangerous goods

Marine transport IMDG/GGVSee
Class -
UN number -
EmS -
Label -
Remarks The product does not constitute a hazardous substance in sea transport.

Air transport ICAO/IATA
Class -
Packing group -
UN number -
Label -
Remarks The product does not constitute a hazardous substance in air transport.

15.) Regulatory information

Labelling in accordance with EC directives
The product is classified and labelled in accordance with EC directives/GefStoff V

R phrases 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S phrases 29 Do not empty into drains.
contains

BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE; METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE; MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE); May produce an allergic reaction.

16.) Other information

Other information

According to their chemical structure, the applied raw materials do not contain any antimony, arsenic, soluble barium, lead, cadmium, chromium, mercury and selenium.

- **N-METHYL-2-PYRROLIDONE**
  - 36/37/38 Irritating to eyes, respiratory system and skin.
  - 61 May cause harm to the unborn child.

- **1-METHOXY-2-PROPA NOL**
  - 10 Flammable.

- **MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE)**
  - 43 May cause sensitization by skin contact.
  - 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

- **SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.**
  - 65 Harmful: may cause lung damage if swallowed.
  - 10 Flammable.
  - 37 Irritating to respiratory system.
  - 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
  - 66 Repeated exposure may cause skin dryness or cracking.
  - 67 Vapours may cause drowsiness and dizziness.

- **BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE**
  - 43 May cause sensitization by skin contact.
  - 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

- **TELOMER B MONOETHER WITH POLYETHYLENE GLYCOL**
  - 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

- **1,2,4-TRIMETHYLBENZENE**
  - 10 Flammable.
  - 20 Harmful by inhalation.
  - 36/37/38 Irritating to eyes, respiratory system and skin.
  - 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

- **METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE**
  - 43 May cause sensitization by skin contact.
  - 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

- **ANHYDROUS AMMONIA**
  - 10 Flammable.
  - 23 Toxic by inhalation.
  - 34 Causes burns.
  - 50 Very toxic to aquatic organisms.
Contact person
Dipl.-Chem. G. Heller or Dipl.-Ing. U. Voetter.

The instructions are based on today's information and knowledge. The safety data sheet describes products in relation to safety requirements. These instructions do not assure application technological properties of the product.
1.) **Identification of the substance/preparation and of the company/undertaking**

**Identification of the substance or preparation**
- **Trade name**
  - CLEARSTAR TYPE C SATIN
- **Use of the substance/preparation**
  - Liquid laminate

**Company/undertaking identification**
- **Address**
  - Marabu North America LP
  - PO Box 40397
  - USA Charleston, SC 29423-0397
  - Telephone no. ++1-843-886-0094
  - Fax no. ++1-843-886-3701
- **E-mail address of person responsible for this SDS**
  - PRSI@marabu.de
- **Information provided by / telephone**
  - Product safety (+49) (0)7141/691-116 or 232
- **Emergency telephone**
  - Transportation Emergencies: Chemtrec International: 1703 527 3887
  - U.S. Domestic: 1-800-424-9300
  - Other Emergencies: 1-843-886-0094

2.) **Hazards possibilities**

**Classification**
- R43-52/53

**R phrases**
- 43 May cause sensitization by skin contact.
- 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Specific hazards to man and the environment**
- The product is water polluting.

3.) **Composition / information on ingredients**

**Chemical characterization**
- Liquid laminate containing water, based on polyurethane

**Hazardous ingredients**
- (METHYLPHENYL)-W-HYDROXY-POLY(OXY(METHYL-1,2-ETHANEDIYL))
  - **CAS no.** 9064-13-5
  - **Concentration** >= 1 < 5 %-%-b.w.
  - **Classification** Xi;R43
N-METHYL-2-PYRROLIDONE
CAS no. 872-50-4
EINECS no. 212-828-1
Concentration >= 1 < 5 %-b.w.
Classification Xi;R36/38
Repr.Cat. 2;R61

PROPADE-1,2-DIOL
CAS no. 57-55-6
EINECS no. 200-338-0
Concentration >= 1 < 5 %-b.w.

2-(2-BUTOXYETHOXY)ETHANOL
CAS no. 112-34-5
EINECS no. 203-961-6
Concentration >= 1 < 5 %-b.w.
Classification Xi;R36

POLYPROPYLENGLYCOLE
Concentration >= 1 < 5 %-b.w.
Classification Xn;R22

(2-METHOXY-DI-METHYLETHOXY)PROPANOLE
CAS no. 111109-77-4
ELINCS number 404-640-5
Concentration >= 1 < 5 %-b.w.

MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-tert-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-tert-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE)
ELINCS number 400-830-7
Concentration >= 0.5 < 1 %-b.w.
Classification Xi;R43
N;R51/53

BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE
CAS no. 41556-26-7
EINECS no. 255-437-1
Concentration < 0.5 %-b.w.
Classification R43
N;R50/53

METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE
CAS no. 82919-37-7
EINECS no. 280-060-4
Concentration < 0.5 %-b.w.
Classification R43
N;R50/53

4.) First aid measures

General information
Immediately remove all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical attention. Unconsciousness: lateral position - call a physician.

After inhalation
Take the casualty into the fresh air and keep warm. Irregular breathing/no breathing: artificial respiration. Call a physician.
After skin contact
Wash away with soap and water and rinse. Do NOT use solvents or thinners!

After eye contact
Flush with plenty of water (10 - 15 min.).

After ingestion
Call a physician. Keep at rest. Do not induce vomiting.

5.) Fire-fighting measures

Suitable extinguishing media
Carbon dioxide, foam, sand, water.

Special exposure hazards arising from the substance or preparation itself, its combustion products or from resulting gases
Material supports the burning only after evaporation of the watery content. In this case, dangerous smoke gases such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced. Therefore, take suitable precautionary measures for fire fighting. Residues remaining after a fire have to be disposed of appropriately.

Special protective equipment for fire-fighting
Breathing apparatus with an independent source of air may be required.

Other information
Cool endangered containers with water in case of fire.

6.) Accidental release measures

Personal precautions
Provide for good ventilation. Do not breathe vapours. Refer to protective measures listed in sections 7 and 8.

Environmental precautions
Do not empty into drains. If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations.

Methods for cleaning up
Remove by liquid absorbing material (e.g. kieselguhr) and process according to waste regulations. Clean preferably with a detergent; avoid use of solvents.

7.) Handling and storage

Handling
Advice on safe handling
Avoid vapour concentration higher than the workplace exposure limits. Do not leave containers open. Avoid contact with skin and eyes. Avoid inhalation of vapour and spray mist. When using do not eat, drink or smoke. Comply with the health and safety at work laws.

Advice on protection against fire and explosion
Material supports the burning only after evaporation of the watery content.

Storage
Requirements for storage rooms and vessels
Store in cool but frostfree conditions in frostfree containers. Keep container tightly closed. Never use pressure to empty: container is not a pressure vessel. No smoking. Prevent unauthorized access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Hints on storage assembly
Keep away from oxidizing agents, from strongly alkaline and strongly acid materials.

Further information on storage conditions
Always keep in containers of same material as the original one.
8.) **Expose controls/personal protection**

**Exposure limit values**

N-METHYL-2-PYRROLIDONE

<table>
<thead>
<tr>
<th></th>
<th>WEL (EH40/2005)</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>25 ml/m³</td>
<td>103 mg/m³</td>
</tr>
<tr>
<td>Skin resorption / sensibilisation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2-(2-BUTOXYETHOXY)ETHANOL

<table>
<thead>
<tr>
<th></th>
<th>2000/39/EC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>10 ml/m³</td>
</tr>
<tr>
<td>STEL</td>
<td>15 ml/m³</td>
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</table>

PROPANE-1,2-DIOL

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<thead>
<tr>
<th></th>
<th>WEL (EH40/2005)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>150 ml/m³</td>
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<tr>
<td>Skin resorption / sensibilisation</td>
<td></td>
</tr>
</tbody>
</table>

(2-METHOXY-DI-METHYLETHOXY)PROPANOLE

<table>
<thead>
<tr>
<th></th>
<th>Lijst van de grenswaarden voor blootstelling aan chemische agentia (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>50 ml/m³</td>
</tr>
<tr>
<td>Skin resorption / sensibilisation</td>
<td></td>
</tr>
</tbody>
</table>

**Exposure controls**

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

**Occupational exposure controls**

**Respiratory protection**

Breathing protection equipment required in inadequately ventilated places and during spraying.

Respiratory filter (gas): A

Respiratory filter (part): P2
Hand protection

Chemical protection gloves are suitable, which are tested according to EN 374.

Recommendation for protection against components normally found in the products:

For short-term contact (e.g. spray protection) as well as for long-term contact (e.g. cleaning purposes):

Suitable material: LLDPE
Material thickness: 0.06 mm
Penetration time: >480 min.

Protective gloves must always be tested and confirmed with regard to suitability to each specific working environment (e.g. mechanical resistance, product compatibility, antistatic).

Follow the instructions and information from the glove manufacturer in reference to use, storage, care, and frequency of glove exchange.

Protective gloves should be immediately replaced upon being damaged or when showing first signs of wear. Preventive skin protection (skin protective cream) is recommended. Contaminated skin areas should immediately be washed (follow data sheet for skin protection M 042).

Working procedures are to be so arranged that the permanent wearing of gloves will not be necessary.

We recommend to set up a hand protection plan, which is adapted to the needs of the local business. Further information is provided in the publications of Bundesverband Handschutz (nos. 6 and 9) and BG Druck und Papierverarbeitung (528.1, 528.2, 531.X).

Eye protection

Use safety glasses.
Skin protection
All parts of the body should be washed after contact. Use re-greasing skin cream.

General protective and hygiene measures
The usual precautionary measures for the handling of chemicals have to be observed.

9.) Physical and chemical properties

General information
- Form: liquid
- Colour: milky
- Odour: like solvent

Important health, safety and environmental information

Changes in physical state
- Type: Starts to boil
- Value: 100 °C
- Reference substance: (water)

Flash point
- Value: not applicable

Ignition temperature
- Value: not applicable

Explosion limits
- Remarks: not applicable

Vapour pressure
- Value: 23 hPa
- Reference temperature: 20 °C
- Reference substance: (water)

Density
- Value: 1.03 g/cm³
- Reference temperature: 20 °C

Solubility in water
- Remarks: mixable

pH value
- Value: 9 - 10
- Reference temperature: 20 °C

Other information
The physical specifications are approximate values and refer to the used safety relevant component(s).

10.) Stability and reactivity

Conditions to avoid
Stable under recommended storage and handling conditions (See section 7).

Materials to avoid
Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

Hazardous decomposition products
When exposed to high temperatures, dangerous decomposition products such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced.
11.) **Toxicological information**

**Experience in practice**
Exposure to component solvents vapours concentration in excess of the stated workplace exposure limit may result in adverse health effect such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
May cause sensitization by skin contact.
Splashes in the eyes may cause mild irritation and cause the eyelids to stick together.
If swallowed, stomach complaints and irritation of the digestive organs may result.
Ingredient N-methyl-2-pyrrolidone may cause harm to the unborn child.

**Other information**
There are no data available on the preparation itself.
The product was classified in toxicological terms on the basis of the results of the calculation procedure outlined within General Directive on Preparations (1999/45/EEC).

12.) **Ecological information**

**General information / ecology**
There are no data available on the preparation itself. Do not empty into waters or drains.

13.) **Disposal considerations**

**Product**

<table>
<thead>
<tr>
<th>EWC waste code</th>
<th>waste paint and varnish containing organic solvents or other dangerous substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>08 01 11*</td>
<td></td>
</tr>
</tbody>
</table>

Dispose of or incinerate in accordance with corresponding regulations.

**Uncontaminated packaging**

Dispose of only completely emptied containers!

14.) **Transport information**

**Land transport ADR/RID**

Label - - -
Remarks non-dangerous goods

**Marine transport IMDG/GGVSee**

Class -
UN number -
EmS -
Label -
Remarks The product does not constitute a hazardous substance in sea transport.

**Air transport ICAO/IATA**

Class -
Packing group -
UN number -
Label -
Remarks The product does not constitute a hazardous substance in air transport.
15.) Regulatory information

Labelling in accordance with EC directives
The product is classified and labelled in accordance with EC directives/GefStoff V

Hazard symbols
Xi Irritant

Hazardous component(s) to be indicated on label
(METHYLPHENYL)-W-HYDROXY-POLY(OXY(METHYL-1,2-ETHANEDIYL))

R phrases
43 May cause sensitization by skin contact.
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S phrases
28.2 After contact with skin, wash immediately with plenty of water and soap.
29 Do not empty into drains.
37/39 Wear suitable gloves and eye/face protection.

16.) Other information

Other information
According to their chemical structure, the applied raw materials do not contain any antimony, arsenic, soluble barium, lead, cadmium, chromium, mercury and selenium.

(METHYLPHENYL)-W-HYDROXY-POLY(OXY(METHYL-1,2-ETHANEDIYL))
43 May cause sensitization by skin contact.

N-METHYL-2-PYRROLIDONE
36/37/38 Irritating to eyes, respiratory system and skin.
61 May cause harm to the unborn child.

2-(2-BUTOXYETHOXY)ETHANOL
36 Irritating to eyes.

POLYPROPYLENGLYCOLE
22 Harmful if swallowed.

MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE)
43 May cause sensitization by skin contact.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE
43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE
43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Department issuing safety data sheet
Product safety.
Contact person
Dipl.-Chem. G. Heller or Dipl.-Ing. U. Voetter.

The instructions are based on today's information and knowledge. The safety data sheet describes products in relation to safety requirements. These instructions do not assure application technological properties of the product.
1.) **Identification of the substance/preparation and of the company/undertaking**

**Identification of the substance or preparation**
- **Trade name**: CLEARSHIELD TYPE C GLOSS
- **Use of the substance/preparation**: Liquid laminate

**Company/undertaking identification**
- **Address**: Marabu North America LP
  - PO Box 40397
  - USA Charleston, SC 29423-0397
  - Telephone no.: +1-843-886-0094
  - Fax no.: +1-843-886-3701
- **E-mail address of person responsible for this SDS**: PRSI@marabu.de
- **Information provided by / telephone**: Product safety (+49) (0)7141/691-116 or 232
- **Emergency telephone**: Transportation Emergencies: Chemtrec
  - International: 1703 527 3887
  - U.S. Domestic: 1-800-424-9300
  - Other Emergencies: 1-843-886-0094

2.) **Hazards possibilities**

**Classification**
- R43-52/53

**R phrases**
- 43: May cause sensitization by skin contact.
- 52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Specific hazards to man and the environment**
The product is water polluting.

3.) **Composition / information on ingredients**

**Chemical characterization**
- Liquid laminate containing water, based on polyurethane

**Hazardous ingredients**
- **(METHYLPHENYL)-W-HYDROXY-POLY(OXY(METHYL-1,2-ETHANEDIYL))**
  - **CAS no.**: 9064-13-5
  - **Concentration**: >= 1 < 5 %-%-b.w.
  - **Classification**: Xi;R43
4.) First aid measures

General information
Immediately remove all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical attention. Unconsciousness: lateral position - call a physician.

After inhalation
Take the casualty into the fresh air and keep warm. Irregular breathing/no breathing: artificial respiration. Call a physician.
After skin contact
Wash away with soap and water and rinse. Do NOT use solvents or thinners!

After eye contact
Flush with plenty of water (10 - 15 min.).

After ingestion
Call a physician. Keep at rest. Do not induce vomiting.

5.) **Fire-fighting measures**

Suitable extinguishing media
Carbon dioxide, foam, sand, water.

Special exposure hazards arising from the substance or preparation itself, its combustion products or from resulting gases
Material supports the burning only after evaporation of the watery content. In this case, dangerous smoke gases such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced. Therefore, take suitable precautionary measures for fire fighting. Residues remaining after a fire have to be disposed of appropriately.

Special protective equipment for fire-fighting
Breathing apparatus with an independent source of air may be required.

Other information
Cool endangered containers with water in case of fire.

6.) **Accidental release measures**

Personal precautions
Provide for good ventilation. Do not breathe vapours. Refer to protective measures listed in sections 7 and 8.

Environmental precautions
Do not empty into drains. If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations.

Methods for cleaning up
Remove by liquid absorbing material (e.g. kieselguhr) and process according to waste regulations. Clean preferably with a detergent; avoid use of solvents.

7.) **Handling and storage**

Handling
Advice on safe handling
Avoid vapour concentration higher than the workplace exposure limits. Do not leave containers open. Avoid contact with skin and eyes. Avoid inhalation of vapour and spray mist. When using do not eat, drink or smoke. Comply with the health and safety at work laws.

Advice on protection against fire and explosion
Material supports the burning only after evaporation of the watery content.

Storage
Requirements for storage rooms and vessels
Store in cool but frostfree conditions in frostfree containers. Keep container tightly closed. Never use pressure to empty: container is not a pressure vessel. No smoking. Prevent unauthorized access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Hints on storage assembly
Keep away from oxidizing agents, from strongly alkaline and strongly acid materials.

Further information on storage conditions
Always keep in containers of same material as the original one.
8.) **Expose controls/personal protection**

Exposure limit values

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Exposure limit values</th>
<th>STEL</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N-METHYL-2-PYRROLIDONE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEL (EH40/2005)</td>
<td>Value: 25 ml/m³</td>
<td>103</td>
<td>mg/m³</td>
</tr>
<tr>
<td></td>
<td>STEL: 75 ml/m³</td>
<td>309</td>
<td>mg/m³</td>
</tr>
<tr>
<td>Skin resorption /</td>
<td>Sk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sensibilisation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2-(2-BUTOXYETHOXY)ETHANOL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000/39/EC</td>
<td>Value: 10 ml/m³</td>
<td>67.5</td>
<td>mg/m³</td>
</tr>
<tr>
<td></td>
<td>STEL: 15 ml/m³</td>
<td>101.2</td>
<td>mg/m³</td>
</tr>
<tr>
<td><strong>PROPANE-1,2-DIOL</strong></td>
<td>total vapour and particulates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEL (EH40/2005)</td>
<td>Value: 150 ml/m³</td>
<td>474</td>
<td>mg/m³</td>
</tr>
<tr>
<td>(2-METHOXY-DI-METHYLETHOXY)PROPANOLE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lijst van de grenswaarden voor blootstelling aan chemische agentia (B)</td>
<td>Value: 50 ml/m³</td>
<td>308</td>
<td>mg/m³</td>
</tr>
<tr>
<td>Skin resorption /</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sensibilisation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEL (EH40/2005)</td>
<td>Value: 50 ml/m³</td>
<td>308</td>
<td>mg/m³</td>
</tr>
<tr>
<td>Skin resorption /</td>
<td>Sk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sensibilisation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Exposure controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

**Occupational exposure controls**

Respiratory protection

Breathing protection equipment required in inadequately ventilated places and during spraying.

Respiratory filter (gas): A

Respiratory filter (part): P2
Hand protection
Chemical protection gloves are suitable, which are tested according to EN 374.

Recommendation for protection against components normally found in the products:

For short-term contact (e.g. spray protection) as well as for long-term contact (e.g. cleaning purposes):

Suitable material: LLDPE
Material thickness: 0.06 mm
Penetration time: >480 min.

Protective gloves must always be tested and confirmed with regard to suitability to each specific working environment (e.g. mechanical resistance, product compatibility, antistatic).

Follow the instructions and information from the glove manufacturer in reference to use, storage, care, and frequency of glove exchange.

Protective gloves should be immediately replaced upon being damaged or when showing first signs of wear. Preventive skin protection (skin protective cream) is recommended. Contaminated skin areas should immediately be washed (follow data sheet for skin protection M 042).

Working procedures are to be so arranged that the permanent wearing of gloves will not be necessary.

We recommend to set up a hand protection plan, which is adapted to the needs of the local business. Further information is provided in the publications of Bundesverband Handschutz (nos. 6 and 9) and BG Druck und Papierverarbeitung (528.1, 528.2, 531.X).

Eye protection
Use safety glasses.

Skin protection
All parts of the body should be washed after contact. Use re-greasing skin cream.

General protective and hygiene measures
The usual precautionary measures for the handling of chemicals have to be observed.

9.) Physical and chemical properties

General information
Form
Colour
Odour
liquid
milky
like solvent

Important health, safety and environmental information

Changes in physical state
Type
Value
Reference substance
Starts to boil
100
° C
(water)

Flash point
Value
not applicable

Ignition temperature
Value
not applicable

Explosion limits
Remarks
not applicable

Vapour pressure
Value
23
hPa
Reference temperature
20
° C
Reference substance
(water)
Density

Value: 1.03  g/cm³
Reference temperature: 20 °C

Solubility in water

Remarks: mixable

pH value

Value: 9 - 10
Reference temperature: 20 °C

Other information

The physical specifications are approximate values and refer to the used safety relevant component(s).

10.) Stability and reactivity

Conditions to avoid
Stable under recommended storage and handling conditions (See section 7).

Materials to avoid
Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

Hazardous decomposition products
When exposed to high temperatures, dangerous decomposition products such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced.

11.) Toxicological information

Experience in practice
Exposure to component solvents vapours concentration in excess of the stated workplace exposure limit may result in adverse health effect such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
May cause sensitization by skin contact.
Splashes in the eyes may cause mild irritation and cause the eyelids to stick together.
If swallowed, stomach complaints and irritation of the digestive organs may result.
Ingredient N-methyl-2-pyrrolidone may cause harm to the unborn child.

Other information
There are no data available on the preparation itself.
The product was classified in toxicological terms on the basis of the results of the calculation procedure outlined within General Directive on Preparations (1999/45/EEC).

12.) Ecological information

General information / ecology
There are no data available on the preparation itself. Do not empty into waters or drains

13.) Disposal considerations

Product
EWC waste code: 08 01 11* waste paint and varnish containing organic solvents or other dangerous substances
Dispose of or incinerate in accordance with corresponding regulations.

Uncontaminated packaging
Dispose of only completely emptied containers!

14.) **Transport information**

**Land transport ADR/RID**
- Label: -
- Remarks: non-dangerous goods

**Marine transport IMDG/GGVSee**
- Class: -
- UN number: -
- EmS: -
- Label: -
- Remarks: The product does not constitute a hazardous substance in sea transport.

**Air transport ICAO/IATA**
- Class: -
- Packing group: -
- UN number: -
- Label: -
- Remarks: The product does not constitute a hazardous substance in air transport.

15.) **Regulatory information**

**Labelling in accordance with EC directives**
The product is classified and labelled in accordance with EC directives/GefStoff V

**Hazard symbols**
- Xi: Irritant

**Hazardous component(s) to be indicated on label**
(METHYLPHENYL)-W-HYDROXY-POLY(OXY(METHYL-1,2-ETHANEDIYL))

**R phrases**
- 43: May cause sensitization by skin contact.
- 52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**S phrases**
- 28.2: After contact with skin, wash immediately with plenty of water and soap.
- 29: Do not empty into drains.
- 37/39: Wear suitable gloves and eye/face protection.

16.) **Other information**

**Other information**
According to their chemical structure, the applied raw materials do not contain any antimony, arsenic, soluble barium, lead, cadmium, chromium, mercury and selenium.
(METHYLPHENYL)-W-HYDROXY-POLY(OXY(METHYL-1,2-ETHANEDIYL))
- 43: May cause sensitization by skin contact.

**N-METHYL-2-PYRROLIDONE**
- 36/37/38: Irritating to eyes, respiratory system and skin.
- 61: May cause harm to the unborn child.

**2-(2-BUTOXYETHOXY)ETHANOL**
- 36: Irritating to eyes.

**POLYPROPYLENGLYCOLE**
- 22: Harmful if swallowed.
MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-
HYDROXY-PHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-
BENZOTRIAZOL-2-YL)-
5-TERT-BUTYL-4-HYDROXY-PHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-
BUTYL-4-HYDROXY-PHENYL)PROPIONYLOXYPOLY(OXYETHYLENE)

43 May cause sensitization by skin contact.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE

43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE

43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Department issuing safety data sheet

Product safety.
Contact person
Dipl.-Chem. G. Heller or Dipl.-Ing. U. Voetter.

The instructions are based on today's information and knowledge. The safety data sheet describes products in relation to safety requirements. These instructions do not assure application technological properties of the product.
1.) **Identification of the substance/preparation and of the company/undertaking**

**Identification of the substance or preparation**
- **Trade name**: CLEARSHIELD TYPE C SEMI-GLOSS
- **Use of the substance/preparation**: Liquid laminate

**Company/undertaking identification**
- **Address**: Marabu North America LP
  - PO Box 40397
  - USA Charleston, SC 29423-0397
- **Telephone no.**: ++1-843-886-0094
- **Fax no.**: ++1-843-886-3701

**E-mail address of person responsible for this SDS**
- PRSI@marabu.de

**Information provided by / telephone**
- Product safety (+49) (0)7141/691-116 or 232

**Emergency telephone**
- Transportation Emergencies: Chemtrec
  - International: 1703 527 3887
  - U.S. Domestic: 1-800-424-9300
- Other Emergencies: 1-843-886-0094

2.) **Hazards possibilities**

**Classification**
- R43-52/53

**R phrases**
- 43 May cause sensitization by skin contact.
- 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Specific hazards to man and the environment**
- The product is water polluting.

3.) **Composition / information on ingredients**

**Chemical characterization**
- Liquid laminate containing water, based on polyurethane

**Hazardous ingredients**
- **(METHYLPHENYL)-W-HYDROXY-POLY(OXY(METHYL-1,2-ETHANEDIYL))**
  - **CAS no.**: 9064-13-5
  - **Concentration**: >= 1 < 5 %-%-b.w.
  - **Classification**: Xi;R43
4.) First aid measures

General information
Immediately remove all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical attention. Unconsciousness: lateral position - call a physician.

After inhalation
Take the casualty into the fresh air and keep warm. Irregular breathing/no breathing: artificial respiration. Call a physician.

After skin contact
Wash away with soap and water and rinse. Do NOT use solvents or thinners!

After eye contact
Flush with plenty of water (10 - 15 min.).
5.) Fire-fighting measures

Suitable extinguishing media
Carbon dioxide, foam, sand, water.

Special exposure hazards arising from the substance or preparation itself, its combustion products or from resulting gases
Material supports the burning only after evaporation of the watery content. In this case, dangerous smoke gases such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced. Therefore, take suitable precautionary measures for fire fighting. Residues remaining after a fire have to be disposed of appropriately.

Special protective equipment for fire-fighting
Breathing apparatus with an independent source of air may be required.

6.) Accidental release measures

Personal precautions
Provide for good ventilation. Do not breathe vapours. Refer to protective measures listed in sections 7 and 8.

Environmental precautions
Do not empty into drains. If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations.

Methods for cleaning up
Remove by liquid absorbing material (e.g. kieselguhr) and process according to waste regulations. Clean preferably with a detergent; avoid use of solvents.

7.) Handling and storage

Handling
Advice on safe handling
Avoid vapour concentration higher than the workplace exposure limits. Do not leave containers open. Avoid contact with skin and eyes. Avoid inhalation of vapour and spray mist. When using do not eat, drink or smoke. Comply with the health and safety at work laws.

Advice on protection against fire and explosion
Material supports the burning only after evaporation of the watery content.

Storage
Requirements for storage rooms and vessels
Store in cool but frostfree conditions in frostfree containers. Keep container tightly closed. Never use pressure to empty; container is not a pressure vessel. No smoking. Prevent unauthorized access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Hints on storage assembly
Keep away from oxidizing agents, from strongly alkaline and strongly acid materials.

Further information on storage conditions
Always keep in containers of same material as the original one.
8.) **Expose controls/personal protection**

**Exposure limit values**

**N-METHYL-2-PYRROLIDONE**

<table>
<thead>
<tr>
<th>Component</th>
<th>WEL (EH40/2005) Value</th>
<th>STEL Value</th>
<th>Skin resorption / sensibilisation Sk</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-METHYL-2-PYRROLIDONE</td>
<td>25 ml/m³ 103 mg/m³</td>
<td>75 ml/m³ 309 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

**2-(2-BUTOXYETHOXY)ETHANOL**

<table>
<thead>
<tr>
<th>Component</th>
<th>2000/39/EC Value</th>
<th>STEL Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-(2-BUTOXYETHOXY)ETHANOL</td>
<td>10 ml/m³ 67,5 mg/m³</td>
<td>15 ml/m³ 101,2 mg/m³</td>
</tr>
</tbody>
</table>

**PROPANE-1,2-DIOL**

<table>
<thead>
<tr>
<th>Component</th>
<th>WEL (EH40/2005) total vapour and particulates Value</th>
<th>STEL Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROPANE-1,2-DIOL</td>
<td>150 ml/m³ 474 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

**Exposure controls**

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

**Occupational exposure controls**

**Respiratory protection**

Breathing protection equipment required in inadequately ventilated places and during spraying.
- Respiratory filter (gas): A
- Respiratory filter (part): P2

**Hand protection**

Chemical protection gloves are suitable, which are tested according to EN 374.

Recommendation for protection against components normally found in the products:

For short-term contact (e.g. spray protection) as well as for long-term contact (e.g. cleaning purposes):

- Suitable material: LLDPE
- Material thickness: 0.06 mm
- Penetration time: >480 min.

Protective gloves must always be tested and confirmed with regard to suitability to each specific working environment (e.g. mechanical resistance, product compatibility, antistatic).

Follow the instructions and information from the glove manufacturer in reference to use, storage, care, and frequency of glove exchange.

Protective gloves should be immediately replaced upon being damaged or when showing first signs of wear. Preventive skin protection (skin protective cream) is recommended. Contaminated skin areas should immediately be washed (follow data sheet for skin protection M 042).

Working procedures are to be so arranged that the permanent wearing of gloves will not be necessary.

We recommend to set up a hand protection plan, which is adapted to the needs of the local business. Further information is provided in the publications of Bundesverband Handschutz (nos. 6 and 9) and BG Druck und Papierverarbeitung (528.1, 528.2, 531.X).

**Eye protection**

Use safety glasses.
Skin protection  
All parts of the body should be washed after contact. Use re-greasing skin cream.

General protective and hygiene measures  
The usual precautionary measures for the handling of chemicals have to be observed.

9.) Physical and chemical properties

General information
Form liquid  
Colour milky  
Odour like solvent

Important health, safety and environmental information

Changes in physical state
Type Starts to boil  
Value 100 °C  
Reference substance (water)

Flash point
Value not applicable

Ignition temperature
Value not applicable

Explosion limits
Remarks not applicable

Vapour pressure
Value 23 hPa  
Reference temperature 20 °C  
Reference substance (water)

Density
Value 1.03 g/cm³  
Reference temperature 20 °C

Solubility in water
Remarks mixable

pH value
Value 9 - 10  
Reference temperature 20 °C

Other information
The physical specifications are approximate values and refer to the used safety relevant component(s).

10.) Stability and reactivity

Conditions to avoid
Stable under recommended storage and handling conditions (See section 7).

Materials to avoid
Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

Hazardous decomposition products
When exposed to high temperatures, dangerous decomposition products such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced.
11.) **Toxicological information**

**Experience in practice**
Exposure to component solvents vapours concentration in excess of the stated workplace exposure limit may result in adverse health effect such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

May cause sensitization by skin contact.
Splashes in the eyes may cause mild irritation and cause the eyelids to stick together.
If swallowed, stomach complaints and irritation of the digestive organs may result.
Ingredient N-methyl-2-pyrrolidone may cause harm to the unborn child.

**Other information**
There are no data available on the preparation itself.
The product was classified in toxicological terms on the basis of the results of the calculation procedure outlined within General Directive on Preparations (1999/45/EEC).

12.) **Ecological information**

**General information / ecology**
There are no data available on the preparation itself. Do not empty into waters or drains.

13.) **Disposal considerations**

**Product**

<table>
<thead>
<tr>
<th>EWC waste code</th>
<th>08 01 11*</th>
<th>waste paint and varnish containing organic solvents or other dangerous substances</th>
</tr>
</thead>
</table>

Dispose of or incinerate in accordance with corresponding regulations.

**Uncontaminated packaging**
Dispose of only completely emptied containers!


14.) **Transport information**

**Land transport ADR/RID**

| Label | - - - |
| Remarks | non-dangerous goods |

**Marine transport IMDG/GGVSee**

| Class | - |
| UN number | - |
| EmS | - |
| Label | - |
| Remarks | The product does not constitute a hazardous substance in sea transport. |

**Air transport ICAO/IATA**

| Class | - |
| Packing group | - |
| UN number | - |
| Label | - |
| Remarks | The product does not constitute a hazardous substance in air transport. |
15.) Regulatory information

Labelling in accordance with EC directives
The product is classified and labelled in accordance with EC directives/GefStoff V

Hazard symbols
Xi Irritant

Hazardous component(s) to be indicated on label
(METHYLPHENYL)-W-HYDROXY-POLY(OXY(METHYL-1,2-ETHANEDIYL))

R phrases
43 May cause sensitization by skin contact.
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S phrases
28.2 After contact with skin, wash immediately with plenty of water and soap.
29 Do not empty into drains.
37/39 Wear suitable gloves and eye/face protection.

16.) Other information

Other information
According to their chemical structure, the applied raw materials do not contain any antimony, arsenic, soluble barium, lead, cadmium, chromium, mercury and selenium.

(METHYLPHENYL)-W-HYDROXY-POLY(OXY(METHYL-1,2-ETHANEDIYL))
43 May cause sensitization by skin contact.

N-METHYL-2-PYRROLIDONE
36/37/38 Irritating to eyes, respiratory system and skin.
61 May cause harm to the unborn child.

2-(2-BUTOXYETHOXY)ETHANOL
36 Irritating to eyes.

POLYPROPYLENGLYCOLE
22 Harmful if swallowed.

MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE)
43 May cause sensitization by skin contact.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE
43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE
43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Department issuing safety data sheet
Product safety.
Safety data sheet in accordance with regulation (EC) No 1907/2006

Trade name: CLEARSHIELD TYPE C SEMI-GLOSS  
Product no.: WBCSGCAN  
Version : 2 / GB  
Date of printing : 14.01.2011

Contact person
Dipl.-Chem. G. Heller or Dipl.-Ing. U. Voetter.

The instructions are based on today's information and knowledge. The safety data sheet describes products in relation to safety requirements. These instructions do not assure application technological properties of the product.
1.) Identification of the substance/preparation and of the company/undertaking

Identification of the substance or preparation

Trade name
CLEARSHIELD ORG LL 20° SATIN

Use of the substance/preparation
Liquid laminate

Company/undertaking identification

Address
Marabu North America LP
PO Box 40397
USA  Charleston, SC 29423-0397
Telephone no. ++1-843-886-0094
Fax no. ++1-843-886-3701

E-mail address of person responsible for this SDS
PRSI@marabu.de

Information provided by / telephone
Product safety  (+49) (0)7141/691-116 or 232

Emergency telephone
Transportation Emergencies: Chemtrec
International: 1703 527 3887
U.S. Domestic: 1-800-424-9300

Other Emergencies: 1-843-886-0094

2.) Hazards possibilities

Classification
R52/53

R phrases
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Specific hazards to man and the environment
The product is water polluting.

3.) Composition / information on ingredients

Chemical characterization
Liquid laminate containing water, based on polyurethane

Hazardous ingredients

(2-METHOXYMETHYLETHOXY)PROPANOL
CAS no.  34590-94-8
EINECS no.  252-104-2
Concentration  \( >= 1 < 5 \) %-b.w.

N-METHYL-2-PYRROLIDONE
CAS no.  872-50-4
EINECS no.  212-828-1
Concentration  \( >= 1 < 5 \) %-b.w.
Classification  Xi;R36/38
Repr.Cat. 2;R61
1-METHOXY-2-PROPANOL
CAS no. 107-98-2
EINECS no. 203-539-1
Concentration \( \geq 1 \) < 5 %-b.w.
Classification R10

MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-Omega-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-Omega-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE)
ELINCS number 400-830-7
Concentration \( \geq 0,5 \) < 1 %-b.w.
Classification Xi;R43
N;R51/53

SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.
CAS no. 64742-95-6
EINECS no. 265-199-0
Concentration \( \geq 0,5 \) < 1 %-b.w.
Classification Xn;R65
Xi;R37
N;R51/53
R10
R66
R67

BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE
CAS no. 41556-26-7
EINECS no. 255-437-1
Concentration < 0,5 %-b.w.
Classification R43
N;R50/53

TELOMER B MONOETHER WITH POLYETHYLENE GLYCOL
CAS no. 65545-80-4
Concentration < 0,5 %-b.w.
Classification N;R51/53

1,2,4-TRIMETHYLBENZENE
CAS no. 95-63-6
EINECS no. 202-436-9
Concentration < 0,5 %-b.w.
Classification R10
Xn;R20
Xi;R36/37/38
N;R51/53

METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE
CAS no. 82919-37-7
EINECS no. 280-060-4
Concentration < 0,5 %-b.w.
Classification R43
N;R50/53
ANHYDROUS AMMONIA
CAS no. 7664-41-7
EINECS no. 231-635-3
Concentration < 0,5 %-%b.w.
Classification R10
T;R23
C;R34
N;R50

4.) First aid measures

General information
Immediately remove all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical attention. Unconsciousness: lateral position - call a physician.

After inhalation
Take the casualty into the fresh air and keep warm. Irregular breathing/no breathing: artificial respiration. Call a physician.

After skin contact
Wash away with soap and water and rinse. Do NOT use solvents or thinners!

After eye contact
Flush with plenty of water (10 - 15 min.).

After ingestion
Call a physician. Keep at rest. Do not induce vomiting.

5.) Fire-fighting measures

Suitable extinguishing media
Carbon dioxide, foam, sand, water.

Special exposure hazards arising from the substance or preparation itself, its combustion products or from resulting gases
Material supports the burning only after evaporation of the watery content. In this case, dangerous smoke gases such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced. Therefore, take suitable precautionary measures for fire fighting. Residues remaining after a fire have to be disposed of appropriately.

Special protective equipment for fire-fighting
Breathing apparatus with an independent source of air may be required.

Other information
Cool endangered containers with water in case of fire.

6.) Accidental release measures

Personal precautions
Provide for good ventilation. Do not breathe vapours. Refer to protective measures listed in sections 7 and 8.

Environmental precautions
Do not empty into drains. If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations.

Methods for cleaning up
Remove by liquid absorbing material (e.g. kieselguhr) and process according to waste regulations. Clean preferably with a detergent; avoid use of solvents.
7.) **Handling and storage**

**Handling**

*Advice on safe handling*
Avoid vapour concentration higher than the workplace exposure limits. Do not leave containers open. Avoid contact with skin and eyes. Avoid inhalation of vapour and spray mist. When using do not eat, drink or smoke. Comply with the health and safety at work laws.

*Advice on protection against fire and explosion*
Material supports the burning only after evaporation of the watery content.

**Storage**

*Requirements for storage rooms and vessels*
Store in cool but frostfree conditions in frostfree containers. Keep container tightly closed. Never use pressure to empty: container is not a pressure vessel. No smoking. Prevent unauthorized access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

*Hints on storage assembly*
Keep away from oxidizing agents, from strongly alkaline and strongly acid materials.

*Further information on storage conditions*
Always keep in containers of same material as the original one.

8.) **Exposure controls/personal protection**

**Exposure limit values**

*ANHYDROUS AMMONIA*

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<tr>
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<th>2000/39/EC</th>
<th>WEL (EH40/2005)</th>
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<tbody>
<tr>
<td>Value</td>
<td>20 ml/m³</td>
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<td>50 ml/m³</td>
<td>35 ml/m³</td>
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*1-METHOXY-2-PROPANOL*

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<td>150 ml/m³</td>
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<tr>
<td>Skin resorption / sensibilisation</td>
<td>skin</td>
<td>Sk</td>
</tr>
<tr>
<td>Value</td>
<td>100 ml/m³</td>
<td>100 ml/m³</td>
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<tr>
<td>STEL</td>
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<tr>
<td>Skin resorption / sensibilisation</td>
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*N-METHYL-2-PYRROLIDONE*

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<td>STEL</td>
<td>75 ml/m³</td>
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*1,2,4-TRIMETHYLBENZENE*

<table>
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<tr>
<td>Value</td>
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<tr>
<td>STEL</td>
<td>75 ml/m³</td>
<td>125 ml/m³</td>
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</table>
(2-METHOXYMETHYLETHOXY)PROPANOL

2000/39/EC
Value: 50 ml/m³ 308 mg/m³
Skin resorption / sensibilisation

WEL (EH40/2005)
Value: 50 ml/m³ 308 mg/m³
Skin resorption / sensibilisation

Exposure controls
Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

Occupational exposure controls

Respiratory protection
Breathing protection equipment required in inadequately ventilated places and during spraying.
Respiratory filter (gas): A
Respiratory filter (part): P2

Hand protection
Chemical protection gloves are suitable, which are tested according to EN 374.
Recommendation for protection against components normally found in the products:
For short-term contact (e.g. spray protection) as well as for long-term contact (e.g. cleaning purposes):
Suitable material: LLDPE
Material thickness: 0.06 mm
Penetration time: >480 min.

Protective gloves must always be tested and confirmed with regard to suitability to each specific working environment (e.g. mechanical resistance, product compatibility, antistatic).

Follow the instructions and information from the glove manufacturer in reference to use, storage, care, and frequency of glove exchange.

Protective gloves should be immediately replaced upon being damaged or when showing first signs of wear. Preventive skin protection (skin protective cream) is recommended. Contaminated skin areas should immediately be washed (follow data sheet for skin protection M 042).

Working procedures are to be so arranged that the permanent wearing of gloves will not be necessary.

We recommend to set up a hand protection plan, which is adapted to the needs of the local business. Further information is provided in the publications of Bundesverband Handschutz (nos. 6 and 9) and BG Druck und Papierverarbeitung (528.1, 528.2, 531.X).

Eye protection
Use safety glasses.

Skin protection
All parts of the body should be washed after contact. Use re-greasing skin cream.

General protective and hygiene measures
The usual precautionary measures for the handling of chemicals have to be observed.
9.) **Physical and chemical properties**

### General information
- **Form**: liquid
- **Colour**: milky
- **Odour**: like solvent

### Important health, safety and environmental information

#### Changes in physical state
- **Type**: Starts to boil
- **Value**: 100 °C

<table>
<thead>
<tr>
<th>Reference substance</th>
<th>(water)</th>
</tr>
</thead>
</table>

#### Flash point
- **Value**: not applicable

#### Ignition temperature
- **Value**: not applicable

#### Explosion limits
- **Remarks**: not applicable

#### Vapour pressure
- **Value**: 23 hPa
- **Reference temperature**: 20 °C

<table>
<thead>
<tr>
<th>Reference substance</th>
<th>(water)</th>
</tr>
</thead>
</table>

#### Density
- **Value**: 1,03 g/cm³
- **Reference temperature**: 20 °C

#### Solubility in water
- **Remarks**: mixable

#### pH value
- **Value**: 8 - 9
- **Reference temperature**: 20 °C

### Other information
The physical specifications are approximate values and refer to the used safety relevant component(s).

10.) **Stability and reactivity**

#### Conditions to avoid
- Stable under recommended storage and handling conditions (See section 7).

#### Materials to avoid
- Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

#### Hazardous decomposition products
- When exposed to high temperatures, dangerous decomposition products such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced.

11.) **Toxicological information**

#### Experience in practice
- Exposure to component solvents vapours concentration in excess of the stated workplace exposure limit may result in adverse health effect such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
May cause sensitization by skin contact.
Splashes in the eyes may cause mild irritation and cause the eyelids to stick together.
If swallowed, stomach complaints and irritation of the digestive organs may result.
Ingredient N-methyl-2-pyrrolidone may cause harm to the unborn child.

Other information
There are no data available on the preparation itself.
The product was classified in toxicological terms on the basis of the results of the calculation procedure outlined within General Directive on Preparations (1999/45/EEC).

12.) Ecological information

General information / ecology
There are no data available on the preparation itself. Do not empty into waters or drains

13.) Disposal considerations

Product
EWC waste code 08 01 11* waste paint and varnish containing organic solvents or other
dangerous substances

Dispose of or incinerate in accordance with corresponding regulations.

Uncontaminated packaging
Dispose of only completely emptied containers!
absorbents, wiping cloths, filter materials and protective clothing not otherwise specified - packaging
(including separately collected municipal packaging waste) - plastic packaging).

14.) Transport information

Land transport ADR/RID
Label - - -
Remarks non-dangerous goods

Marine transport IMDG/GGVSee
Class -
UN number -
EmS -
Label -
Remarks The product does not constitute a hazardous substance in sea transport.

Air transport ICAO/IATA
Class -
Packing group -
UN number -
Label -
Remarks The product does not constitute a hazardous substance in air transport.

15.) Regulatory information

Labelling in accordance with EC directives
The product is classified and labelled in accordance with EC directives/GefStoff V

R phrases
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S phrases
29 Do not empty into drains.
16.) **Other information**

Other information
According to their chemical structure, the applied raw materials do not contain any antimony, arsenic, soluble barium, lead, cadmium, chromium, mercury and selenium.

**N-METHYL-2-PYRROLIDONE**
36/37/38 Irritating to eyes, respiratory system and skin.
61 May cause harm to the unborn child.

**1-METHOXY-2-PROPANOL**
10 Flammable.

**MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE)**
43 May cause sensitization by skin contact.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.**
65 Harmful: may cause lung damage if swallowed.
10 Flammable.
37 Irritating to respiratory system.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
66 Repeated exposure may cause skin dryness or cracking.
67 Vapours may cause drowsiness and dizziness.

**BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE**
43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**TELOMER B MONOETHER WITH POLYETHYLENE GLYCOL**
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**1,2,4-TRIMETHYLBENZENE**
10 Flammable.
20 Harmful by inhalation.
36/37/38 Irritating to eyes, respiratory system and skin.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE**
43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**ANHYDROUS AMMONIA**
10 Flammable.
23 Toxic by inhalation.
34 Causes burns.
50 Very toxic to aquatic organisms.
Contact person
Dipl.-Chem. G. Heller or Dipl.-Ing. U. Voetter.

The instructions are based on today's information and knowledge. The safety data sheet describes products in relation to safety requirements. These instructions do not assure application technological properties of the product.
1.) Identification of the substance/preparation and of the company/undertaking

Identification of the substance or preparation

Trade name
CLEARSHIELD ORG LL

Use of the substance/preparation
Liquid laminate

Company/undertaking identification

Address
Marabu North America LP
PO Box 40397
USA Charleston, SC 29423-0397
Telephone no. ++1-843-886-0094
Fax no. ++1-843-886-3701

E-mail address of person responsible for this SDS
PRSI@marabu.de

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2.) Hazards possibilities

Classification
R52/53

R phrases
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Specific hazards to man and the environment
The product is water polluting.

3.) Composition / information on ingredients

Chemical characterization
Liquid laminate containing water, based on polyurethane

Hazardous ingredients

(2-METHOXYMETHYLETHOXY)PROPANOL
CAS no. 34590-94-8
EINECS no. 252-104-2
Concentration >= 1 < 5 %-b.w.

N-METHYL-2-PYRROLIDONE
CAS no. 872-50-4
EINECS no. 212-828-1
Concentration >= 1 < 5 %-b.w.
Classification Xi;R36/38
Repr.Cat. 2;R61
1-METHOXY-2-PROPANOL
CAS no. 107-98-2
EINECS no. 203-539-1
Concentration >= 1 < 5 %-b.w.
Classification R10

MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-
HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-
BENZOTRIAZOL-2-YL)-
5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-
BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE)
ELINCS number 400-830-7
Concentration >= 0,5 < 1 %-b.w.
Classification Xi;R43
N;R51/53

SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.
CAS no. 64742-95-6
EINECS no. 265-199-0
Concentration >= 0,5 < 1 %-b.w.
Classification Xn;R65
Xi;R37
R10
R66
R67

BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE
CAS no. 41556-26-7
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CAS no. 65545-80-4
Concentration < 0,5 %-b.w.
Classification N;R51/53

1,2,4-TRIMETHYLBENZENE
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Concentration < 0,5 %-b.w.
Classification R10
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Concentration < 0,5 %-b.w.
Classification R43
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ANHYDROUS AMMONIA
CAS no. 7664-41-7
EINECS no. 231-635-3
Concentration < 0,5 %-%-b.w.
Classification T;R23
C;R34
N;R50

4.) First aid measures

General information
Immediately remove all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical attention. Unconsciousness: lateral position - call a physician.

After inhalation
Take the casualty into the fresh air and keep warm. Irregular breathing/no breathing: artificial respiration. Call a physician.

After skin contact
Wash away with soap and water and rinse. Do NOT use solvents or thinners!

After eye contact
Flush with plenty of water (10 - 15 min.).

After ingestion
Call a physician. Keep at rest. Do not induce vomiting.

5.) Fire-fighting measures

Suitable extinguishing media
Carbon dioxide, foam, sand, water.

Special exposure hazards arising from the substance or preparation itself, its combustion products or from resulting gases
Material supports the burning only after evaporation of the watery content. In this case, dangerous smoke gases such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced. Therefore, take suitable precautionary measures for fire fighting. Residues remaining after a fire have to be disposed of appropriately.

Special protective equipment for fire-fighting
Breathing apparatus with an independent source of air may be required.

Other information
Cool endangered containers with water in case of fire.

6.) Accidental release measures

Personal precautions
Provide for good ventilation. Do not breathe vapours. Refer to protective measures listed in sections 7 and 8.

Environmental precautions
Do not empty into drains. If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations.

Methods for cleaning up
Remove by liquid absorbing material (e.g. kieselguhr) and process according to waste regulations. Clean preferably with a detergent; avoid use of solvents.
7.) **Handling and storage**

**Handling**

**Advice on safe handling**
Avoid vapour concentration higher than the workplace exposure limits. Do not leave containers open.
Avoid contact with skin and eyes. Avoid inhalation of vapour and spray mist. When using do not eat, drink or smoke. Comply with the health and safety at work laws.

**Advice on protection against fire and explosion**
Material supports the burning only after evaporation of the watery content.

**Storage**

**Requirements for storage rooms and vessels**
Store in cool but frostfree conditions in frostfree containers. Keep container tightly closed. Never use pressure to empty: container is not a pressure vessel. No smoking. Prevent unauthorized access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

**Hints on storage assembly**
Keep away from oxidizing agents, from strongly alkaline and strongly acid materials.

**Further information on storage conditions**
Always keep in containers of same material as the original one.

8.) **Expose controls/personal protection**

**Exposure limit values**

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<td></td>
</tr>
<tr>
<td>Value</td>
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<tr>
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<td>STEL</td>
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<td>Skin resorption / sensibilisation</td>
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<td></td>
</tr>
<tr>
<td><strong>1,2,4-TRIMETHYLBENZENE</strong></td>
<td>WEL (EH40/2005)</td>
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</tr>
<tr>
<td>Value</td>
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<td>20</td>
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<tr>
<td>WEL (EH40/2005)</td>
<td>100</td>
<td>100</td>
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</tbody>
</table>
(2-METHOXYMETHYLETHOXY)PROPANOL

2000/39/EC

Value 50 ml/m³ 308 mg/m³
Skin resorption / skin sensitisation

WEL (EH40/2005)

Value 50 ml/m³ 308 mg/m³
Skin resorption / Sk sensitisation

Exposure controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

Occupational exposure controls

Respiratory protection
Breathing protection equipment required in inadequately ventilated places and during spraying.
Respiratory filter (gas) : A
Respiratory filter (part): P2

Hand protection
Chemical protection gloves are suitable, which are tested according to EN 374.

Recommendation for protection against components normally found in the products:

For short-term contact (e.g. spray protection) as well as for long-term contact (e.g. cleaning purposes):

Suitable material: LLDPE
Material thickness: 0.06 mm
Penetration time: >480 min.

Protective gloves must always be tested and confirmed with regard to suitability to each specific working environment (e.g. mechanical resistance, product compatibility, antistatic).

Follow the instructions and information from the glove manufacturer in reference to use, storage, care, and frequency of glove exchange.

Protective gloves should be immediately replaced upon being damaged or when showing first signs of wear. Preventive skin protection (skin protective cream) is recommended. Contaminated skin areas should immediately be washed (follow data sheet for skin protection M 042).

Working procedures are to be so arranged that the permanent wearing of gloves will not be necessary.

We recommend to set up a hand protection plan, which is adapted to the needs of the local business. Further information is provided in the publications of Bundesverband Handschutz (nos. 6 and 9) and BG Druck und Papierverarbeitung (528.1, 528.2, 531.X).

Eye protection
Use safety glasses.

Skin protection
All parts of the body should be washed after contact. Use re-greasing skin cream.

General protective and hygiene measures
The usual precautionary measures for the handling of chemicals have to be observed.
9.) **Physical and chemical properties**

**General information**
- **Form**: liquid
- **Colour**: milky
- **Odour**: like solvent

**Important health, safety and environmental information**

**Changes in physical state**
- **Type**: Starts to boil
- **Value**: 100 °C
- **Reference substance**: (water)

**Flash point**
- **Value**: not applicable

**Ignition temperature**
- **Value**: not applicable

**Explosion limits**
- **Remarks**: not applicable

**Vapour pressure**
- **Value**: 23 hPa
- **Reference temperature**: 20 °C
- **Reference substance**: (water)

**Density**
- **Value**: 1.03 g/cm³
- **Reference temperature**: 20 °C

**Solubility in water**
- **Remarks**: mixable

**pH value**
- **Value**: 8 - 9
- **Reference temperature**: 20 °C

**Other information**
The physical specifications are approximate values and refer to the used safety relevant component(s).

10.) **Stability and reactivity**

**Conditions to avoid**
- Stable under recommended storage and handling conditions (See section 7).

**Materials to avoid**
- Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

**Hazardous decomposition products**
- When exposed to high temperatures, dangerous decomposition products such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced.

11.) **Toxicological information**

**Experience in practice**
- Exposure to component solvents vapours concentration in excess of the stated workplace exposure limit may result in adverse health effect such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
May cause sensitization by skin contact.
Splashes in the eyes may cause mild irritation and cause the eyelids to stick together.
If swallowed, stomach complaints and irritation of the digestive organs may result.
Ingredient N-methyl-2-pyrrolidone may cause harm to the unborn child.

Other information
There are no data available on the preparation itself.
The product was classified in toxicological terms on the basis of the results of the calculation procedure outlined within General Directive on Preparations (1999/45/EEC).

12.) Ecological information

General information / ecology
There are no data available on the preparation itself. Do not empty into waters or drains

13.) Disposal considerations
Product
EWC waste code 08 01 11* waste paint and varnish containing organic solvents or other dangerous substances
Dispose of or incinerate in accordance with corresponding regulations.

Uncontaminated packaging
Dispose of only completely emptied containers!

14.) Transport information
Land transport ADR/RID
Label -
Remarks non-dangerous goods

Marine transport IMDG/GGVSee
Class -
UN number -
EmS -
Label -
Remarks The product does not constitute a hazardous substance in sea transport.

Air transport ICAO/IATA
Class -
Packing group -
UN number -
Label -
Remarks The product does not constitute a hazardous substance in air transport.

15.) Regulatory information
Labelling in accordance with EC directives
The product is classified and labelled in accordance with EC directives/GefStoff V

R phrases
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S phrases
29 Do not empty into drains.
contains
BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE; METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE; MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5- TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-Omega-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-Omega-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE); May produce an allergic reaction.

16.) **Other information**

**Other information**
According to their chemical structure, the applied raw materials do not contain any antimony, arsenic, soluble barium, lead, cadmium, chromium, mercury and selenium.

**N-METHYL-2-PYRROLIDONE**
36/37/38 Irritating to eyes, respiratory system and skin.
61 May cause harm to the unborn child.

**1-METHOXY-2-PROPANOL**
10 Flammable.

**MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-Omega-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-Omega-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE)**
43 May cause sensitization by skin contact.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.**
65 Harmful: may cause lung damage if swallowed.
10 Flammable.
37 Irritating to respiratory system.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
66 Repeated exposure may cause skin dryness or cracking.
67 Vapours may cause drowsiness and dizziness.

**BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE**
43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**TELOMER B MONOETHER WITH POLYETHYLENE GLYCOL**
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**1,2,4-TRIMETHYLBENZENE**
10 Flammable.
20 Harmful by inhalation.
36/37/38 Irritating to eyes, respiratory system and skin.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE**
43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**ANHYDROUS AMMONIA**
10 Flammable.
23 Toxic by inhalation.
34 Causes burns.
50 Very toxic to aquatic organisms.
Department issuing safety data sheet

Product safety.

Contact person

Dipl.-Chem. G. Heller or Dipl.-Ing. U. Voetter.

The instructions are based on today's information and knowledge. The safety data sheet describes products in relation to safety requirements. These instructions do not assure application technological properties of the product.
1.) Identification of the substance/preparation and of the company/undertaking

Identification of the substance or preparation

- Trade name: CLEARSHIELD MATTE
- Use of the substance/preparation: Liquid laminate

Company/undertaking identification

- Address: Marabu North America LP, PO Box 40397, USA, Charleston, SC 29423-0397
- Telephone no.: ++1-843-886-0094
- Fax no.: ++1-843-886-3701
- E-mail address of person responsible for this SDS: PRS1@marabu.de

Information provided by / telephone

- Product safety (+49) (0)7141/691-116 or 232

Emergency telephone

- Transportation Emergencies: Chemtrec
  International: 1703 527 3887
  U.S. Domestic: 1-800-424-9300
- Other Emergencies: 1-843-886-0094

2.) Hazards possibilities

Classification

R52/53

R phrases

52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Specific hazards to man and the environment

The product is water polluting.

3.) Composition / information on ingredients

Chemical characterization

Liquid laminate containing water, based on polyurethane

Hazardous ingredients

(2-METHOXYMETHYLETHOXY)PROPANOL
  CAS no.: 34590-94-8
  EINECS no.: 252-104-2
  Concentration: >= 1 < 5 % - b.w.

N-METHYL-2-PYRROLIDONE
  CAS no.: 872-50-4
  EINECS no.: 212-828-1
  Concentration: >= 1 < 5 % - b.w.
  Classification: Xi;R36/38
  Repr.Cat. 2:R61
2-ETHYLBENZYL DIPHENYL PHOSPHATE
CAS no. 1241-94-7
EINECS no. 214-987-2
Concentration >= 1 < 5 %-%b.w.
Classification N;R50/53

1-METHOXY-2-PROPANOL
CAS no. 107-98-2
EINECS no. 203-539-1
Concentration >= 1 < 5 %-%b.w.
Classification R10

MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYOXYPOLY(OXYETHYLENE)
ELINCS number 400-830-7
Concentration >= 0,5 < 1 %-%b.w.
Classification Xi;R43

SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.
CAS no. 64742-95-6
EINECS no. 265-199-0
Concentration >= 0,5 < 1 %-%b.w.
Classification Xn;R65

BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE
CAS no. 41556-26-7
EINECS no. 255-437-1
Concentration < 0,5 %-%b.w.
Classification R43

TELOMER B MONOETHER WITH POLYETHYLENE GLYCOL
CAS no. 65545-80-4
Concentration < 0,5 %-%b.w.
Classification N;R51/53

1,2,4-TRIMETHYL Benzoe
CAS no. 95-63-6
EINECS no. 202-436-9
Concentration < 0,5 %-%b.w.
Classification R10

4.) First aid measures

General information
Immediately remove all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical attention. Unconsciousness: lateral position - call a physician.

After inhalation
Take the casualty into the fresh air and keep warm. Irregular breathing/no breathing: artificial respiration. Call a physician.

After skin contact
Wash away with soap and water and rinse. Do NOT use solvents or thinners!

After eye contact
Flush with plenty of water (10 - 15 min.).

After ingestion
Call a physician. Keep at rest. Do not induce vomiting.

5.) Fire-fighting measures

Suitable extinguishing media
Carbon dioxide, foam, sand, water.

Special exposure hazards arising from the substance or preparation itself, its combustion products or from resulting gases
Material supports the burning only after evaporation of the watery content. In this case, dangerous smoke gases such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced. Therefore, take suitable precautionary measures for fire fighting. Residues remaining after a fire have to be disposed of appropriately.

Special protective equipment for fire-fighting
Breathing apparatus with an independent source of air may be required.

Other information
Cool endangered containers with water in case of fire.

6.) Accidental release measures

Personal precautions
Provide for good ventilation. Do not breathe vapours. Refer to protective measures listed in sections 7 and 8.

Environmental precautions
Do not empty into drains. If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations.

Methods for cleaning up
Remove by liquid absorbing material (e.g. kieselguhr) and process according to waste regulations. Clean preferably with a detergent; avoid use of solvents.

7.) Handling and storage
Handling

Advice on safe handling
Avoid vapour concentration higher than the workplace exposure limits. Do not leave containers open.
Avoid contact with skin and eyes. Avoid inhalation of vapour and spray mist. When using do not eat,
drink or smoke. Comply with the health and safety at work laws.

Advice on protection against fire and explosion
Material supports the burning only after evaporation of the watery content.

Storage

Requirements for storage rooms and vessels
Store in cool but frostfree conditions in frostfree containers. Keep container tightly closed. Never use
pressure to empty: container is not a pressure vessel. No smoking. Prevent unauthorized access.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Hints on storage assembly
Keep away from oxidizing agents, from strongly alkaline and strongly acid materials.

Further information on storage conditions
Always keep in containers of same material as the original one.

8.) Expose controls/personal protection

Exposure limit values

1-METHOXY-2-PROPANOL

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>STEL</th>
<th>Skin resorption</th>
<th>Sensibilisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000/39/EC</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Value</td>
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N-METHYL-2-PYRROLIDONE

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<th>Skin resorption</th>
<th>Sensibilisation</th>
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<td></td>
</tr>
<tr>
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<td>skin</td>
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</tbody>
</table>

1,2,4-TRIMETHYLBENZENE

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<th>Sensibilisation</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value</td>
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<td>25</td>
<td>skin</td>
<td></td>
</tr>
<tr>
<td>STEL</td>
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<td>125</td>
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</tr>
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</table>

(2-METHOXYMETHYLETHOXY)PROPANOL

<table>
<thead>
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<th>Skin resorption</th>
<th>Sensibilisation</th>
</tr>
</thead>
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<tr>
<td>2000/39/EC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value</td>
<td>50</td>
<td></td>
<td>skin</td>
<td></td>
</tr>
<tr>
<td>STEL</td>
<td>308</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Exposure controls
Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

Occupational exposure controls

Respiratory protection
Breathing protection equipment required in inadequately ventilated places and during spraying.
Respiratory filter (gas): A
Respiratory filter (part): P2

Hand protection
Chemical protection gloves are suitable, which are tested according to EN 374.

Recommendation for protection against components normally found in the products:

For short-term contact (e.g. spray protection) as well as for long-term contact (e.g. cleaning purposes):

Suitable material: LLDPE
Material thickness: 0.06 mm
Penetration time: >480 min.

Protective gloves must always be tested and confirmed with regard to suitability to each specific working environment (e.g. mechanical resistance, product compatibility, antistatic).

Follow the instructions and information from the glove manufacturer in reference to use, storage, care, and frequency of glove exchange.

Protective gloves should be immediately replaced upon being damaged or when showing first signs of wear. Preventive skin protection (skin protective cream) is recommended. Contaminated skin areas should immediately be washed (follow data sheet for skin protection M 042).

Working procedures are to be so arranged that the permanent wearing of gloves will not be necessary.

We recommend to set up a hand protection plan, which is adapted to the needs of the local business. Further information is provided in the publications of Bundesverband Handschutz (nos. 6 and 9) and BG Druck und Papierverarbeitung (528.1, 528.2, 531.X).

Eye protection
Use safety glasses.

Skin protection
All parts of the body should be washed after contact. Use re-greasing skin cream.

General protective and hygiene measures
The usual precautionary measures for the handling of chemicals have to be observed.

9.) Physical and chemical properties

General information
Form liquid
Colour milky
Odour like solvent

Important health, safety and environmental information

Changes in physical state
Type Starts to boil
Value 100 °C
Reference substance (water)
Flash point
Value not applicable

Ignition temperature
Value not applicable

Explosion limits
Remarks not applicable

Vapour pressure
Value 23 hPa
Reference temperature 20 °C
Reference substance (water)

Density
Value 1.08 g/cm³
Reference temperature 20 °C

Solubility in water
Remarks mixable

pH value
Value 8 - 9
Reference temperature 20 °C

Other information
The physical specifications are approximate values and refer to the used safety relevant component(s).

10.) Stability and reactivity

Conditions to avoid
Stable under recommended storage and handling conditions (See section 7).

Materials to avoid
Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

Hazardous decomposition products
When exposed to high temperatures, dangerous decomposition products such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced.

11.) Toxicological information

Experience in practice
Exposure to component solvents vapours concentration in excess of the stated workplace exposure limit may result in adverse health effect such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
May cause sensitization by skin contact.
Splashes in the eyes may cause mild irritation and cause the eyelids to stick together.
If swallowed, stomach complaints and irritation of the digestive organs may result.
Ingredient N-methyl-2-pyrrolidone may cause harm to the unborn child.

Other information
There are no data available on the preparation itself.
The product was classified in toxicological terms on the basis of the results of the calculation procedure outlined within General Directive on Preparations (1999/45/EEC).

12.) Ecological information

General information / ecology
There are no data available on the preparation itself. Do not empty into waters or drains.
13.) **Disposal considerations**

**Product**
- EWC waste code: 08 01 11* waste paint and varnish containing organic solvents or other dangerous substances

Dispose of or incinerate in accordance with corresponding regulations.

**Uncontaminated packaging**
- Dispose of only completely emptied containers!

14.) **Transport information**

**Land transport ADR/RID**
- Label: -, -, -
- Remarks: non-dangerous goods

**Marine transport IMDG/GGVSee**
- Class: -
- UN number: -
- EmS: -
- Label: -
- Remarks: The product does not constitute a hazardous substance in sea transport.

**Air transport ICAO/IATA**
- Class: -
- Packing group: -
- UN number: -
- Label: -
- Remarks: The product does not constitute a hazardous substance in air transport.

15.) **Regulatory information**

**Labelling in accordance with EC directives**
- The product is classified and labelled in accordance with EC directives/GefStoff V

**R phrases**
- 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**S phrases**
- 29 Do not empty into drains.

**contains**
- BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEbacate; METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEbacate; MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE); May produce an allergic reaction.

16.) **Other information**

**Other information**
- According to their chemical structure, the applied raw materials do not contain any antimony, arsenic, soluble barium, lead, cadmium, chromium, mercury and selenium.
<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-METHYL-2-PYRROLIDONE</td>
<td>36/37/38 Irritating to eyes, respiratory system and skin. 61 May cause harm to the unborn child.</td>
</tr>
<tr>
<td>2-ETHYLHEXYL DIPHENYL PHOSPHATE</td>
<td>50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.</td>
</tr>
<tr>
<td>1-METHOXY-2-PROPAOL</td>
<td>10 Flammable.</td>
</tr>
<tr>
<td>MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPYLONYL-OXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPYLONYLOXYPOLY(OXYETHYLENE)</td>
<td>43 May cause sensitization by skin contact. 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.</td>
</tr>
<tr>
<td>SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.</td>
<td>65 Harmful: may cause lung damage if swallowed. 10 Flammable. 37 Irritating to respiratory system. 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.</td>
</tr>
<tr>
<td>BIS(1,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE</td>
<td>43 May cause sensitization by skin contact. 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.</td>
</tr>
<tr>
<td>TELOMER B MONOETHER WITH POLYETHYLENE GLYCOL</td>
<td>51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.</td>
</tr>
<tr>
<td>1,2,4-TRIMETHYLBENZENE</td>
<td>10 Flammable. 20 Harmful by inhalation. 36/37/38 Irritating to eyes, respiratory system and skin. 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.</td>
</tr>
<tr>
<td>METHYL 1,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE</td>
<td>43 May cause sensitization by skin contact. 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.</td>
</tr>
</tbody>
</table>

Department issuing safety data sheet

Product safety.

Contact person

Dipl.-Chem. G. Heller or Dipl.-Ing. U. Voetter.

The instructions are based on today’s information and knowledge. The safety data sheet describes products in relation to safety requirements. These instructions do not assure application technological properties of the product.
1.) **Identification of the substance/preparation and of the company/undertaking**

Identification of the substance or preparation

**Trade name**
CLEARSHIELD ORG LL SEMI-GLOSS

**Use of the substance/preparation**
Liquid laminate

Company/undertaking identification

**Address**
Marabu North America LP
PO Box 40397
USA Charleston, SC 29423-0397
Telephone no. ++1-843-886-0094
Fax no. ++1-843-886-3701

E-mail address of person responsible for this SDS
PRSI@marabu.de

Information provided by / telephone
Product safety (+49) (0)7141/691-116 or 232

Emergency telephone
Transportation Emergencies: Chemtrec
International: 1703 527 3887
U.S. Domestic: 1-800-424-9300
Other Emergencies: 1-843-886-0094

2.) **Hazards possibilities**

Classification
R52/53

**R phrases**
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Specific hazards to man and the environment
The product is water polluting.

3.) **Composition / information on ingredients**

Chemical characterization
Liquid laminate containing water, based on polyurethane

Hazardous ingredients

**(2-METHOXYMETHYLETHOXY)PROPANOL**
CAS no. 34590-94-8
EINECS no. 252-104-2
Concentration >= 1 < 5 %-%-b.w.

**N-METHYL-2-PYRROLIDONE**
CAS no. 872-50-4
EINECS no. 212-828-1
Concentration >= 1 < 5 %-%-b.w.
Classification Xi;R36/38 Repr.Cat. 2;R61
### 1-METHOXY-2-PROPANOL

- **CAS no.:** 107-98-2
- **EINECS no.:** 203-539-1
- **Concentration:** $\geq 1 < 5\%$-%-b.w.
- **Classification:** R10

### MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE)

- **ELINCS number:** 400-830-7
- **Concentration:** $\geq 0.5 < 1\%$-%-b.w.
- **Classification:** Xi;R43
  - N;R51/53

### SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.

- **CAS no.:** 64742-95-6
- **EINECS no.:** 265-199-0
- **Concentration:** $\geq 0.5 < 1\%$-%-b.w.
- **Classification:** Xn;R65
  - Xi;R37
  - N;R51/53
  - R10
  - R66
  - R67

### BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE

- **CAS no.:** 41556-26-7
- **EINECS no.:** 255-437-1
- **Concentration:** $< 0.5\%$-%-b.w.
- **Classification:** R43
  - N;R50/53

### TELOMER B MONOETHER WITH POLYETHYLENE GLYCOL

- **CAS no.:** 65545-80-4
- **Concentration:** $< 0.5\%$-%-b.w.
- **Classification:** N;R51/53

### 1,2,4-TRIMETHYLBENZENE

- **CAS no.:** 95-63-6
- **EINECS no.:** 202-436-9
- **Concentration:** $< 0.5\%$-%-b.w.
- **Classification:** R10
  - Xn;R20
  - Xi;R36/37/38
  - N;R51/53

### METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE

- **CAS no.:** 82919-37-7
- **EINECS no.:** 280-060-4
- **Concentration:** $< 0.5\%$-%-b.w.
- **Classification:** R43
  - N;R50/53
4.) First aid measures

General information
Immediately remove all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical attention. Unconsciousness: lateral position - call a physician.

After inhalation
Take the casualty into the fresh air and keep warm. Irregular breathing/no breathing: artificial respiration. Call a physician.

After skin contact
Wash away with soap and water and rinse. Do NOT use solvents or thinners!

After eye contact
Flush with plenty of water (10 - 15 min.).

After ingestion
Call a physician. Keep at rest. Do not induce vomiting.

5.) Fire-fighting measures

Suitable extinguishing media
Carbon dioxide, foam, sand, water.

Special exposure hazards arising from the substance or preparation itself, its combustion products or from resulting gases
Material supports the burning only after evaporation of the watery content. In this case, dangerous smoke gases such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced. Therefore, take suitable precautionary measures for fire fighting. Residues remaining after a fire have to be disposed of appropriately.

Special protective equipment for fire-fighting
Breathing apparatus with an independent source of air may be required.

Other information
Cool endangered containers with water in case of fire.

6.) Accidental release measures

Personal precautions
Provide for good ventilation. Do not breathe vapours. Refer to protective measures listed in sections 7 and 8.

Environmental precautions
Do not empty into drains. If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations.

Methods for cleaning up
Remove by liquid absorbing material (e.g. kieselguhr) and process according to waste regulations. Clean preferably with a detergent; avoid use of solvents.
7.) **Handling and storage**

**Handling**

**Advice on safe handling**
Avoid vapour concentration higher than the workplace exposure limits. Do not leave containers open.
Avoid contact with skin and eyes. Avoid inhalation of vapour and spray mist. When using do not eat, drink or smoke. Comply with the health and safety at work laws.

**Advice on protection against fire and explosion**
Material supports the burning only after evaporation of the watery content.

**Storage**

**Requirements for storage rooms and vessels**
Store in cool but frostfree conditions in frostfree containers. Keep container tightly closed. Never use pressure to empty; container is not a pressure vessel. No smoking. Prevent unauthorized access.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.

**Hints on storage assembly**
Keep away from oxidizing agents, from strongly alkaline and strongly acid materials.

**Further information on storage conditions**
Always keep in containers of same material as the original one.

8.) **Expose controls/personal protection**

**Exposure limit values**

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### (2-METHOXYMETHYLETHOXY)PROPANOL

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<td>Skin resorption / sensibilisation</td>
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</table>

#### Exposure controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

#### Occupational exposure controls

##### Respiratory protection

Breathing protection equipment required in inadequately ventilated places and during spraying.

- Respiratory filter (gas): A
- Respiratory filter (part): P2

##### Hand protection

Chemical protection gloves are suitable, which are tested according to EN 374.

Recommendation for protection against components normally found in the products:

For short-term contact (e.g. spray protection) as well as for long-term contact (e.g. cleaning purposes):

- Suitable material: LLDPE
- Material thickness: 0.06 mm
- Penetration time: >480 min.

Protective gloves must always be tested and confirmed with regard to suitability to each specific working environment (e.g. mechanical resistance, product compatibility, antistatic).

Follow the instructions and information from the glove manufacturer in reference to use, storage, care, and frequency of glove exchange.

Protective gloves should be immediately replaced upon being damaged or when showing first signs of wear. Preventive skin protection (skin protective cream) is recommended. Contaminated skin areas should immediately be washed (follow data sheet for skin protection M 042).

Working procedures are to be so arranged that the permanent wearing of gloves will not be necessary.

We recommend to set up a hand protection plan, which is adapted to the needs of the local business. Further information is provided in the publications of Bundesverband Handschutz (nos. 6 and 9) and BG Druck und Papierverarbeitung (528.1, 528.2, 531.X).

##### Eye protection

Use safety glasses.

##### Skin protection

All parts of the body should be washed after contact. Use re-greasing skin cream.

##### General protective and hygiene measures

The usual precautionary measures for the handling of chemicals have to be observed.
9.) **Physical and chemical properties**

**General information**
- Form: liquid
- Colour: milky
- Odour: like solvent

**Important health, safety and environmental information**

**Changes in physical state**
- **Type:** Starts to boil
- **Value:** 100 °C
- **Reference substance:** (water)

**Flash point**
- **Value:** not applicable

**Ignition temperature**
- **Value:** not applicable

**Explosion limits**
- **Remarks:** not applicable

**Vapour pressure**
- **Value:** 23 hPa
- **Reference temperature:** 20 °C
- **Reference substance:** (water)

**Density**
- **Value:** 1.03 g/cm³
- **Reference temperature:** 20 °C

**Solubility in water**
- **Remarks:** mixable

**pH value**
- **Value:** 8 - 9
- **Reference temperature:** 20 °C

**Other information**
- The physical specifications are approximate values and refer to the used safety relevant component(s).

10.) **Stability and reactivity**

**Conditions to avoid**
- Stable under recommended storage and handling conditions (See section 7).

**Materials to avoid**
- Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

**Hazardous decomposition products**
- When exposed to high temperatures, dangerous decomposition products such as carbon dioxide, carbon monoxide, soot and nitrogen oxides can be produced.

11.) **Toxicological information**

**Experience in practice**
- Exposure to component solvents vapours concentration in excess of the stated workplace exposure limit may result in adverse health effect such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
May cause sensitization by skin contact. Splashes in the eyes may cause mild irritation and cause the eyelids to stick together. If swallowed, stomach complaints and irritation of the digestive organs may result. Ingredient N-methyl-2-pyrrolidone may cause harm to the unborn child.

**Other information**

There are no data available on the preparation itself. The product was classified in toxicological terms on the basis of the results of the calculation procedure outlined within General Directive on Preparations (1999/45/EEC).

### 12. Ecological information

**General information / ecology**

There are no data available on the preparation itself. Do not empty into waters or drains.

### 13. Disposal considerations

**Product**

<table>
<thead>
<tr>
<th>EWC waste code</th>
<th>08 01 11*</th>
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</thead>
<tbody>
<tr>
<td>waste paint and varnish containing organic solvents or other dangerous substances</td>
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</tr>
</tbody>
</table>

Dispose of or incinerate in accordance with corresponding regulations.

**Uncontaminated packaging**

Dispose of only completely emptied containers!


### 14. Transport information

**Land transport ADR/RID**

- Label: -
- Remarks: non-dangerous goods

**Marine transport IMDG/GGVSee**

- Class: -
- UN number: -
- EmS: -
- Label: -
- Remarks: The product does not constitute a hazardous substance in sea transport.

**Air transport ICAO/IATA**

- Class: -
- Packing group: -
- UN number: -
- Label: -
- Remarks: The product does not constitute a hazardous substance in air transport.

### 15. Regulatory information

**Labelling in accordance with EC directives**

The product is classified and labelled in accordance with EC directives/GefStoff V

**R phrases**

- 52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**S phrases**

- 29: Do not empty into drains.
contains

BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE; METHYL 1,2,2,6,6-PENTAMETHYL-4-
PIPERIDYL SEBACATE; MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-
HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-
BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-
5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-
TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE); May produce an
allergic reaction.

16.) Other information

Other information
According to their chemical structure, the applied raw materials do not contain any antimony, arsenic,
soluble barium, lead, cadmium, chromium, mercury and selenium.

N-METHYL-2-PYRROLIDONE
36/37/38 Irritating to eyes, respiratory system and skin.
61 May cause harm to the unborn child.

1-METHOXY-2-PROPANOL
10 Flammable.

MIXTURE OF ALPHA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-
HYDROXYPHENYL)PROPIONYL-OMEGA-HYDROXYPOLY(OXYETHYLENE) AND ALPHA-3-(3-(2H-
BENZOTRIAZOL-2-YL)-5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-
5-TERT-BUTYL-4-HYDROXYPHENYL)PROPIONYL-OMEGA-3-(3-(2H-BENZOTRIAZOL-2-YL)-5-TERT-
BUTYL-4-HYDROXYPHENYL)PROPIONYLOXYPOLY(OXYETHYLENE)
43 May cause sensitization by skin contact.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the
aquatic environment.

SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.
65 Harmful: may cause lung damage if swallowed.
10 Flammable.
37 Irritating to respiratory system.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the
aquatic environment.
66 Repeated exposure may cause skin dryness or cracking.
67 Vapours may cause drowsiness and dizziness.

BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL) SEBACATE
43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects
in the aquatic environment.

TELOMER B MONOETHER WITH POLYETHYLENE GLYCOL
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the
aquatic environment.

1,2,4-TRIMETHYLBENZENE
10 Flammable.
20 Harmful by inhalation.
36/37/38 Irritating to eyes, respiratory system and skin.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the
aquatic environment.

METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE
43 May cause sensitization by skin contact.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects
in the aquatic environment.

ANHYDROUS AMMONIA
10 Flammable.
23 Toxic by inhalation.
34 Causes burns.
50 Very toxic to aquatic organisms.

Department issuing safety data sheet
Product safety.
Contact person
Dipl.-Chem. G. Heller or Dipl.-Ing. U. Voetter.

The instructions are based on today's information and knowledge. The safety data sheet describes products in relation to safety requirements. These instructions do not assure application technological properties of the product.