SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Mablex 4xx FR series NAT

Further trade names

Mablex 451, 470, 478E

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

Use of the substance/mixture

Manufacturing of plastic articles and goods including compounding and conversion, eventually recycling.

1.3. Details of the supplier of the safety data sheet

Ravago Distribution Center NV

Company name: Ravago Distribution Center NV
Street: Moerenstraat 85 A
Place: B 2370 Arendonk
Telephone: +32 (0) 14672511
Telefax: +32 (0) 14672012
e-mail: sdsinfo@ravago.com
Internet: www.ravago.com

1.4. Emergency telephone number

+32(0)14672511

Type of use: Injection moulding. blow moulding. Extrusion. Compression moulding.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:

Hazardous to the aquatic environment: Aquatic Chronic 3
Hazard Statements:

Harmful to aquatic life with long lasting effects.

2.2. Label elements

Additional advice on labelling

For this product, a hazard label is not required according to section 1.3.4 of Annex I of the CLP regulation.

2.3. Other hazards

The hazards of this product are mainly associated with its processing
See section 11 for more detailed information on health effects and symptoms

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Thermoplastic polymer (PC/ABS)

Hazardous components

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC No</td>
<td>Index No</td>
<td>REACH No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>115-86-6</td>
<td>Triphenyl phosphate</td>
<td>0-10 %</td>
</tr>
<tr>
<td>204-112-2</td>
<td>Aquatic Acute 1, Aquatic Chronic 2; H400 H411</td>
<td>01-2119457432-41</td>
</tr>
</tbody>
</table>

Full text of H and EUH statements: see section 16.
**SECTION 4: First aid measures**

4.1. Description of first aid measures

**General information**
First aider: Pay attention to self-protection!
Provide adequate ventilation.

**After inhalation**
Provide adequate ventilation.
In case of inhalation of decomposition products, affected person should be moved into fresh air and kept still.
Consult physician.

**After contact with skin**
The melted product can cause severe burns.
Do not use force or solvents to remove product incrustations from affected skin areas.
After contact with molten product, cool skin area rapidly with cold water.
Consult physician.

**After contact with eyes**
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**After ingestion**
Consult physician.

**SECTION 5: Firefighting measures**

5.1. Extinguishing media

**Suitable extinguishing media**
- Water.
- Foam.
- Carbon dioxide (CO2).
- Extinguishing powder.
- Alcohol resistant foam.
- Sand.

5.2. Special hazards arising from the substance or mixture
- Carbon dioxide.
- Carbon monoxide.
- Hydrocarbons.
- HF

5.3. Advice for firefighters
- In case of fire: Wear self-contained breathing apparatus. Protective clothing.

**SECTION 6: Accidental release measures**

6.1. Personal precautions, protective equipment and emergency procedures
- High slip hazard because of leaking or spilled product. (Granulate)

6.2. Environmental precautions
- No special environmental protection measures are necessary.

6.3. Methods and material for containment and cleaning up
- Take up mechanically. Treat the recovered material as prescribed in the section on waste disposal. Do not empty into drains.

**SECTION 7: Handling and storage**

7.1. Precautions for safe handling

**Advice on safe handling**
Provide adequate ventilation. Equipment with built-in suction provisions.

7.2. Conditions for safe storage, including any incompatibilities

**Requirements for storage rooms and vessels**
- Keep in a cool place.
- Provide adequate ventilation.

**Advice on storage compatibility**
storage stability:
Storage temperature: < 40 °C unlimited durability. No special precautionary measures are necessary.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Exposure limits (EH40)

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance</th>
<th>ppm</th>
<th>mg/m³</th>
<th>Category</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>115-86-6</td>
<td>Triphenyl phosphate</td>
<td>-</td>
<td>3</td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
<td>6</td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
</tbody>
</table>

#### DNEL/DMEL values

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance</th>
<th>Exposure route</th>
<th>Effect</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>115-86-6</td>
<td>Triphenyl phosphate</td>
<td>inhalation</td>
<td>systemic</td>
<td>5,2 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Worker DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>5,55 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>0,9 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>1,98 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>oral</td>
<td>systemic</td>
<td>0,5 mg/kg bw/day</td>
</tr>
</tbody>
</table>

#### PNEC values

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance</th>
<th>Environmental compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>115-86-6</td>
<td>Triphenyl phosphate</td>
<td>Freshwater</td>
<td>0,004 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater (intermittent releases)</td>
<td>0,003 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine water</td>
<td>0 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater sediment</td>
<td>1,103 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine sediment</td>
<td>0,11 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Secondary poisoning</td>
<td>16,667 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Micro-organisms in sewage treatment plants (STP)</td>
<td>5 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soil</td>
<td>0,218 mg/kg</td>
</tr>
</tbody>
</table>

### 8.2. Exposure controls

#### Protective and hygiene measures

- Provide adequate ventilation. Equipment with built-in suction provisions.
- When using do not eat, drink or smoke. Do not breathe dust.

#### Eye/face protection

- Wear eye/face protection.

#### Hand protection

- Wear suitable gloves.

#### Skin protection

- Only wear fitting, comfortable and clean protective clothing.
- In case of increasing hazard add: heat-resistant synthetic fibres.
Respiratory protection

Respiratory protection necessary at: In the case of the formation of dust. (half-mask with filter (DIN EN 149)).

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>solid (Granulate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour:</td>
<td>Natural</td>
</tr>
<tr>
<td>Odour:</td>
<td>odourless</td>
</tr>
</tbody>
</table>

Test method

Changes in the physical state

Melting point: not applicable

Flash point: not applicable

Explosive properties

In the case of the formation of dust. Dust explosive.

Oxidizing properties

not applicable

Vapour pressure: not applicable

Density: 1.03-1.28 g/cm³

Water solubility: insoluble

9.2. Other information

point of decomposition >250 °C

Package density: 600 -1000 kg/m³

SECTION 10: Stability and reactivity

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide hydrocarbons.

Further information

No risks worthy of mention.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Exposure route</th>
<th>Dose</th>
<th>Species</th>
<th>Source</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>115-86-6</td>
<td>Triphenyl phosphate</td>
<td>oral</td>
<td>LD50 mg/kg</td>
<td>&gt; 20000</td>
<td>Rat</td>
<td>Study report (1976)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50 mg/kg</td>
<td>&gt; 10000</td>
<td>Rabbit</td>
<td>Study report (1976)</td>
</tr>
</tbody>
</table>

Further information

When used and handled according to the specifications, this product does not have any harmful effects to human health according to our experience and the information available. Contact the manufacturer in case the material is to be used in special applications such as in contact with food or for hygiene, medical or surgical end-use.
### SECTION 12: Ecological information

#### 12.1. Toxicity

Insoluble in: Water.

Due to the consistency along with the low water solubility of the product, bioavailability is unlikely.

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Aquatic toxicity</th>
<th>Dose</th>
<th>[h]</th>
<th>[d]</th>
<th>Species</th>
<th>Source</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>115-86-6</td>
<td>Triphenyl phosphate</td>
<td>Acute fish toxicity</td>
<td>LC50</td>
<td>0,4 mg/l</td>
<td>96 h</td>
<td>Oncorhynchus mykiss</td>
<td>REACH Registration Dossier</td>
<td>other: see below</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute algae toxicity</td>
<td>ErC50 mg/l</td>
<td>2,45</td>
<td>72 h</td>
<td>Pseudokirchneriella subcapitata</td>
<td>Study report (2000)</td>
<td>OECD Guideline 201</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute crustacea toxicity</td>
<td>EC50 mg/l</td>
<td>1 mg/l</td>
<td>48 h</td>
<td>Daphnia magna</td>
<td>Aquatic Toxicology and Hazard Assessment</td>
<td>other: see below</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fish toxicity</td>
<td>NOEC mg/l</td>
<td>&gt;= 0,001</td>
<td>90 d</td>
<td>Oncorhynchus mykiss</td>
<td>Aquatic Toxicology and Hazard Assessment</td>
<td>Flow through system with 90d exposure pe</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Crustacea toxicity</td>
<td>NOEC mg/l</td>
<td>0,254</td>
<td>21 d</td>
<td>Daphnia magna</td>
<td>REACH Registration Dossier</td>
<td>OECD Guideline 211</td>
</tr>
</tbody>
</table>

#### 12.3. Bioaccumulative potential

**Partition coefficient n-octanol/water**

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>115-86-6</td>
<td>Triphenyl phosphate</td>
<td>4.63</td>
</tr>
</tbody>
</table>

**BCF**

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>BCF</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>115-86-6</td>
<td>Triphenyl phosphate</td>
<td>144</td>
<td>Oryzias latipes</td>
<td>REACH Registration D</td>
</tr>
</tbody>
</table>

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

**Advice on disposal**

Can be burnt together with household waste in compliance with official regulations in contact with approved waste disposal companies and with authorities in charge.

Material recycling possible.

Refer to manufacturer or supplier for information on recovery or recycling.

### SECTION 14: Transport information

**Land transport (ADR/RID)**

**14.2. UN proper shipping name:** Not a hazardous material with respect to transportation regulations.

**14.3. Transport hazard class(es):** none

**Inland waterways transport (ADN)**

**14.2. UN proper shipping name:** Not a hazardous material with respect to transportation regulations.

**14.3. Transport hazard class(es):** none

**Marine transport (IMDG)**

**14.2. UN proper shipping name:** Not a hazardous material with respect to transportation regulations.
According to Regulation (EC) No 1907/2006

Safety Data Sheet

Ravago Distribution Center NV

Mablex 4xx FR series NAT

Revision date: 19.06.2019

14.3. Transport hazard class(es):

    none

Air transport (ICAO-TI/IATA-DGR)

14.2. UN proper shipping name:

    Not a hazardous material with respect to transportation regulations.

14.3. Transport hazard class(es):

    none

SECTION 15: Regulatory information

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

National regulatory information

SECTION 16: Other information

Relevant H and EUH statements (number and full text)

H400    Very toxic to aquatic life.
H411    Toxic to aquatic life with long lasting effects.

Further Information

The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

This safety datasheet should be used in conjunction with technical datasheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose than that for which it was intended. This does not in any way excuse the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfil his obligations regarding the use of hazardous products. This information is not exhaustive. This does not exonerate the user from ensuring that legal obligations, other than those mentioned, relating to the use and storage of the product, do not exist. This is solely his responsibility. Furthermore, this safety datasheet is made up based on the legal requirements as set by EC 1272/2008 based on information as is available per July 2017 (date of entry into force). That information that is not yet filled in depends on the input we receive from our suppliers following the time scale as foreseen by EC 1272/2008 and depends solely on the registration of the concerned substances.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor’s safety data sheet.)