1. Identification

Product identifier used on the label

ULTRADUR® B4441 G5 UNCOLORED POLYBUTYLENE TEREPHTHALATE

Recommended use of the chemical and restriction on use
Recommended use*: Polymer; for industrial processing only
Suitable for use in industrial sector: Polymers industry

* The “Recommended use” identified for this product is provided solely to comply with a US Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:
BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification
Synonyms: polybutylene terephthalate

2. Hazards Identification


Classification of the product

No need for classification according to GHS criteria for this product.

Label elements
The product does not require a hazard warning label in accordance with GHS criteria.

Hazards not otherwise classified

No specific dangers known, if the regulations/notes for storage and handling are considered.


Emergency overview

CAUTION:
MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.
INGESTION MAY CAUSE GASTRIC DISTURBANCES.
Use with local exhaust ventilation.
Wear a NIOSH-certified (or equivalent) particulate respirator.
Wear NIOSH-certified chemical goggles.
Wear protective clothing.
Eye wash fountains and safety showers must be easily accessible.

3. Composition / Information on Ingredients


This product does not contain any components classified as hazardous under the referenced regulation.


<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Content (W/W)</th>
<th>Chemical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>30965-26-5</td>
<td>&gt;= 20.0 - &lt;= 40.0%</td>
<td>polybutylene terephthalate (PBT)</td>
</tr>
<tr>
<td>26062-94-2</td>
<td>&gt;= 20.0 - &lt;= 40.0%</td>
<td>polybutylene terephthalate (PBT)</td>
</tr>
<tr>
<td>65997-17-3</td>
<td>&gt;= 15.0 - &lt;= 30.0%</td>
<td>Glass, oxide, chemicals</td>
</tr>
<tr>
<td>225789-38-8</td>
<td>&gt;= 10.0 - &lt;= 20.0%</td>
<td>Phosphinic acid, diethyl-, aluminum salt</td>
</tr>
<tr>
<td>218768-84-4</td>
<td>&gt;= 3.0 - &lt;= 7.0%</td>
<td>Polymer of substituted aromatic triamine and phosphorous compound</td>
</tr>
</tbody>
</table>

The product contains:

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Content (W/W)</th>
<th>Chemical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>37640-57-6</td>
<td>&gt;= 1.0 - &lt; 3.0%</td>
<td>1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compd. with 1,3,5-triazine-2,4,6-triamine (1:1)</td>
</tr>
</tbody>
</table>

4. First-Aid Measures

Description of first aid measures

General advice:
Avoid contact with the skin, eyes and clothing. Remove contaminated clothing.
If inhaled:
Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Consult a physician.

If on skin:
Wash thoroughly with soap and water. Burns caused by molten material require hospital treatment.

If in eyes:
In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. If irritation develops, seek medical attention.

If swallowed:
Rinse mouth and then drink plenty of water. Ingestion is not likely in the available physical form. If ingested, seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: No significant reaction of the human body to the product known.
Hazards: No hazard is expected under intended use and appropriate handling.

Indication of any immediate medical attention and special treatment needed

Note to physician
Treatment: Treat symptomatically.

5. Fire-Fighting Measures

Extinguishing media
Suitable extinguishing media:
water spray, foam, dry powder

Special hazards arising from the substance or mixture
Hazards during fire-fighting:
Phosphine, hydrogen cyanide, carbon monoxide, tetrahydrofuran,
The substances/groups of substances mentioned can be released in case of fire. Formation of further decomposition and oxidation products depends upon the fire conditions.

Advice for fire-fighters
Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:
In case of combustion evolution of toxic gases/vapours possible. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

Further accidental release measures:
High risk of slipping due to leakage/spillage of product.
7. Handling and Storage

Precautions for safe handling
Avoid inhalation of dusts/mists/vapours. Exhaust ventilation at processing machines is required during thermal processing and/or machining.

Protection against fire and explosion:
Take precautionary measures against static discharges.

Conditions for safe storage, including any incompatibilities
Suitable materials for containers: Low density polyethylene (LDPE), High density polyethylene (HDPE), Stainless steel, aluminum

Further information on storage conditions: Keep container tightly closed. Avoid deposition of dust. Protect against moisture.

Storage stability:
Protect against moisture.

8. Exposure Controls/Personal Protection

Components with occupational exposure limits
Glass, oxide, chemicals

ACGIH TLV     TWA value 5 mg/m³ Inhalable fraction; TWA value 1 fibers/cm³ Fiber;
Respirable fibers: length > 5 micrometers; aspect ratio >= 3:1, as determined by the membrane filter method at 400-450X magnification (4-mm objective), using phase-contrast illumination.

Advice on system design:
Provide local exhaust ventilation to control dusts/vapours.

Personal protective equipment
Respiratory protection:
Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) particulate respirator.

Hand protection:
Wear gloves to prevent contact during mechanical processing and/or hot melt conditions.
Eye protection:
Safety glasses with side-shields. Wear safety goggles (chemical goggles) if there is potential for airborne dust exposures.

General safety and hygiene measures:
The product contains dangerous ingredients (see paragraph 2, SDS), which are embedded in plastic and are only set free when milled. Avoid inhalation of dusts/mists/vapours.

9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>granules</td>
</tr>
<tr>
<td>Odour</td>
<td>odourless</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>not applicable</td>
</tr>
<tr>
<td>Colour</td>
<td>various, depending on the colourant</td>
</tr>
<tr>
<td>pH value</td>
<td>not applicable</td>
</tr>
<tr>
<td>Melting range</td>
<td>220 - 230 °C (DIN 53736)</td>
</tr>
<tr>
<td>Boiling range</td>
<td>The substance / product decomposes</td>
</tr>
<tr>
<td>Sublimation point</td>
<td>No applicable information available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>not applicable</td>
</tr>
<tr>
<td>Flammability</td>
<td>not self-igniting</td>
</tr>
<tr>
<td>Flammability of Aerosol Products</td>
<td>not applicable, the product does not form</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>The substance / product decomposes</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>The substance / product decomposes</td>
</tr>
<tr>
<td>Autoignition</td>
<td>&gt; 350 °C (ASTM D1929)</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>&gt; 1 g/cm3</td>
</tr>
<tr>
<td>Density</td>
<td>(20 °C)</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available.</td>
</tr>
<tr>
<td>Bulk density</td>
<td>600 - 900 kg/m3</td>
</tr>
<tr>
<td>Vapour density</td>
<td>not applicable</td>
</tr>
<tr>
<td>Partitioning coefficient n-octanol/water (log Pow):</td>
<td>not applicable</td>
</tr>
<tr>
<td>Self-ignition temperature</td>
<td>not self-igniting</td>
</tr>
<tr>
<td>Thermal decomposition</td>
<td>&gt; 290 °C</td>
</tr>
</tbody>
</table>

Thermal decomposition above the indicated temperature is possible.

10. Stability and Reactivity

Reactivity
No hazardous reactions if stored and handled as prescribed/indicated.

Chemical stability
The product is stable if stored and handled as prescribed/indicated.
Possibility of hazardous reactions
The product is chemically stable.
No hazardous reactions known.

Conditions to avoid
Temperature: > 290 degrees Celsius

Incompatible materials
No substances known that should be avoided.

Hazardous decomposition products
Decomposition products:
Hazardous decomposition products: carbon monoxide, terephthalic acid, tetrahydrofuran, carbon dioxide, Water, hydrogen cyanide, Phosphine

Thermal decomposition:
> 290 °C
Thermal decomposition above the indicated temperature is possible.

11. Toxicological information

Primary routes of exposure
Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity
Assessment of acute toxicity: Contact with molten product may cause thermal burns. The resin in pelleted form poses a low hazard.

Oral
Type of value: ATE
Value: > 5,000 mg/kg

Inhalation
Not inhalable due to the physico-chemical properties of the product.

Dermal
No applicable information available.

Irritation / corrosion
Assessment of irritating effects: Thermal decomposition products of the substance can irritate the eyes, skin, and respiratory tract.

Sensitization
Assessment of sensitization: Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Aspiration Hazard
No aspiration hazard expected.

**Chronic Toxicity/Effects**

**Repeated dose toxicity**

*Information on: 1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compd. with 1,3,5-triazine-2,4,6-triamine (1:1)*

Assessment of repeated dose toxicity: Damages the kidneys. Harmful: danger of serious damage to health by prolonged exposure if swallowed.

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**Genetic toxicity**

Assessment of mutagenicity: Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

**Carcinogenicity**

Assessment of carcinogenicity: Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

**Other Information**

Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

**Symptoms of Exposure**

No significant reaction of the human body to the product known.

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**12. Ecological Information**

**Toxicity**

**Aquatic toxicity**

Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms. The product has not been tested. The statement has been derived from the structure of the product.

**Persistence and degradability**

Assessment biodegradation and elimination (H2O)
Experience shows this product to be inert and non-degradable.

**Bioaccumulative potential**

Bioaccumulation potential
The product will not be readily bioavailable due to its consistency and insolubility in water.

**Additional information**

Other ecotoxicological advice:
No (eco-)toxicological relevant migration of single components/contents takes place. The product is a polymeric compound.
13. Disposal considerations

Waste disposal of substance:
Dispose of in accordance with national, state and local regulations.

Container disposal:
Packs must be completely emptied. Completely emptied packagings can be given for recycling.

14. Transport Information

Land transport
USDOT
Not classified as a dangerous good under transport regulations

Sea transport
IMDG
Not classified as a dangerous good under transport regulations

Air transport
IATA/ICAO
Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations

Registration status:
Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Not hazardous;

State regulations

<table>
<thead>
<tr>
<th>State RTK</th>
<th>CAS Number</th>
<th>Chemical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA, NJ, PA</td>
<td>65997-17-3</td>
<td>Glass, oxide, chemicals</td>
</tr>
</tbody>
</table>

NFPA Hazard codes:
Health: 1 Fire: 1 Reactivity: 0 Special:

HMIS III rating
Health: 1 Flammability: 1 Physical hazard: 0

16. Other Information

SDS Prepared by:
BASF NA Product Regulations
Safety Data Sheet
ULTRADUR® B4441 G5 UNCOLORED POLYBUTYLENE TEREPHTHALATE

Revision date: 2014/07/07
Version: 1.0

SDS Prepared on: 2014/07/07

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