1. Identification

Product identifier used on the label

**Ultramid® B29 HM 01**

**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**
Chemical family: polyamide

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.
Use with local exhaust ventilation.
Wear safety glasses with side-shields.
Wear protective clothing.
Eye wash fountains and safety showers must be easily accessible.
Wear a NIOSH approved (or equivalent) particulate respirator if ventilation is inadequate to control dust.

3. Composition / Information on Ingredients


<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Content (W/W)</th>
<th>Chemical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>105-60-2</td>
<td>&gt;= 1.0 - &lt;= 5.0 %</td>
<td>caprolactam</td>
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</tbody>
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<tr>
<th>CAS Number</th>
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<th>Chemical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>25038-54-4</td>
<td>&gt;= 80.0 - &lt;= 100.0 %</td>
<td>polyamide (PA 6)</td>
</tr>
<tr>
<td>105-60-2</td>
<td>&gt;= 1.0 - &lt;= 5.0 %</td>
<td>caprolactam</td>
</tr>
</tbody>
</table>

4. First-Aid Measures

Description of first aid measures

General advice:
Remove contaminated clothing.
Burns caused by molten material require hospital treatment.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention.

If on skin:
Burns caused by molten material require hospital treatment. Wash affected areas thoroughly with soap and water. If irritation develops, seek medical attention.

If in eyes:
Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

If swallowed:
Rinse mouth immediately and then drink plenty of water, 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, carbon dioxide

Special hazards arising from the substance or mixture
Hazards during fire-fighting:
carbon monoxide, hydrogen cyanide, can be emitted at > 300 °C
Under special fire conditions traces of other toxic substances are possible. 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:
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.

Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation.

Environmental precautions
No special precautions necessary.

Methods and material for containment and cleaning up
For small amounts: Pick up with suitable appliance and dispose of.
For large amounts: Pick up with suitable appliance and dispose of.

7. Handling and Storage

Precautions for safe handling
Ensure thorough ventilation of stores and work areas.

Protection against fire and explosion:
Take precautionary measures against static discharges.
Conditions for safe storage, including any incompatibilities
The product in undamaged packing need not be stored separately.

Suitable materials for containers: Stainless steel 1.4301 (V2), Stainless steel 1.4401, aluminum, High density polyethylene (HDPE)

Storage stability:
Protect against moisture.

8. Exposure Controls/Personal Protection

Components with occupational exposure limits

<table>
<thead>
<tr>
<th>Component</th>
<th>OSHA PEL</th>
<th>STEL value</th>
<th>TWA value</th>
</tr>
</thead>
<tbody>
<tr>
<td>caprolactam</td>
<td>10 ppm 40 mg/m^3 vapour</td>
<td>3 mg/m^3 dust</td>
<td>5 ppm 20 mg/m^3 vapour</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 mg/m^3 dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TWA value 5 mg/m^3 inhalable fraction and vapor</td>
</tr>
</tbody>
</table>

ACGIH TLV

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. Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator.

Hand protection:
Wear gloves to prevent contact during mechanical processing and/or hot melt conditions.

Eye protection:
Safety glasses with side-shields.

Body protection:
Body protection must be chosen based on level of activity and exposure.

General safety and hygiene measures:
Wear protective clothing to prevent contact during mechanical processing and/or hot melt conditions. Avoid inhalation of dust. Handle in accordance with good industrial hygiene and safety practice. At the end of the shift the skin should be cleaned and skin-care agents applied.

9. Physical and Chemical Properties

Form: pellets
Odour: faint specific odour
Odour threshold: not applicable
Colour: white opaque
pH value: not applicable
melting range: 180 - 220 °C (DIN 53736)
onset of boiling: not applicable
Sublimation point: No applicable information available.
Flash point: not applicable
Flammability: not highly flammable
10. Stability and Reactivity

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

Corrosion to metals:
No corrosive effect on metal.

Oxidizing properties:
not fire-propagating

Chemical stability
The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions
No hazardous reactions known.

Conditions to avoid
Temperature: > 300 degrees Celsius
Avoid prolonged exposure to extreme heat.

Incompatible materials
No substances known that should be avoided.

Hazardous decomposition products
Decomposition products:
Hazardous decomposition products: carbon monoxide, hydrogen cyanide, caprolactam
Thermal decomposition products: caprolactam, The substances/groups of substances mentioned may be released during processing.
Thermal decomposition:
> 300 °C
May decompose if overheated and/or subjected to prolonged heating.

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

Information on: caprolactam
Type of value: LD50
Species: rat (female)
Value: 1,475 mg/kg (Directive 84/449/EEC, B.1)

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

Information on: caprolactam
Type of value: LC50
Species: rat (male/female)
Value: approx. 8.16 mg/l (BASF-Test)
Exposure time: 4 h
An aerosol with respirable particles was tested.

Assessment other acute effects
No applicable information available.

Irritation / corrosion

Information on: caprolactam
Assessment of irritating effects: May cause slight irritation to the skin. May cause slight irritation to the eyes.

Sensitization
Assessment of sensitization: No applicable information available.

Aspiration Hazard
not applicable

Chronic Toxicity/Effects

Repeated dose toxicity
Safety Data Sheet
Ultramid® B29 HM 01
Revision date: 2015/02/13
Version: 2.0

Information on: caprolactam
Assessment of repeated dose toxicity: After repeated exposure the prominent effect is local irritation. The substance may cause damage to the upper respiratory tract after repeated inhalation, as shown in animal studies.

Genetic toxicity
Assessment of mutagenicity: No applicable information available.

Reproductive toxicity
Assessment of reproduction toxicity: No applicable information available.

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.

Information on: caprolactam

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

Medical conditions aggravated by overexposure
Data available do not indicate that there are medical conditions that are generally recognized as being aggravated by exposure to this substance/product. See MSDS section 11 - Toxicological information.

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.

Aquatic toxicity

Information on: caprolactam
Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish

Information on: caprolactam
LC0 (96 h) 100 mg/l, Oryzias latipes (OECD Guideline 203, semistatic)
LC50 (96 h) 707.1 mg/l, Salmo gairdneri, syn. O. mykiss (OECD 203; ISO 7346; 84/449/EEC, C.1, static)

Aquatic invertebrates
Information on: caprolactam
EC50 (48 h) > 1,000 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)

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Aquatic plants

Information on: caprolactam
EC50 (72 h) > 1,000 mg/l (growth rate), Selenastrum capricornutum (OECD Guideline 201, static)
EC50 (72 h) > 1,000 mg/l (biomass), Selenastrum capricornutum (OECD Guideline 201, static)

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Microorganisms/Effect on activated sludge

Toxicity to microorganisms

Information on: caprolactam
other aquatic
bacterium/EC50 (17 h): 4,240 mg/l

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Persistence and degradability

Elimination information

Information on: caprolactam
82 % BOD of the ThOD (14 d) (OECD 301C; ISO 9408; 92/69/EEC, C.4-F) (aerobic, activated sludge)

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Bioaccumulative potential

Assessment bioaccumulation potential

Information on: caprolactam

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

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Additional information

Information on: caprolactam
Other ecotoxicological advice:
Do not release untreated into natural waters.

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13. Disposal considerations

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

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

State RTK CAS Number Chemical name
MA, NJ, PA 105-60-2 caprolactam

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
SDS Prepared on: 2015/02/13

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