

## Identification of the Substance/Preparation and the Company/Undertaking

<b>Product name</b>	:	Helux 3316
<b>Supplier</b>	:	Polymer Factory Sweden AB Teknikringen 48 SE-114 28 Stockholm, Sweden <a href="http://www.polymerfactory.com">http://www.polymerfactory.com</a>
<b>Further information obtainable from</b>	:	Polymer Factory Sweden AB (as above)
<b>Information in case of emergency</b>	:	(Int.) +46 8 337043 (Emergency Response Center, Sweden)

## Composition/Information on Ingredients

<b>Chemical Family</b>	:	Hyperbranched Polyamido Amine
------------------------	---	-------------------------------

## Hazards Identification

<b>Physical /Chemical hazards</b>	:	Combustible. Reacts violently with acids.
<b>Environmental Hazards</b>	:	May cause adverse effects in the aquatic environment due to changes in pH.
<b>Effects of Over-Exposure</b>	:	Not Applicable.

## First Aid Measures

<b>After Inhalation</b>	:	If inhaled, move towards fresh air. Get medical attention if symptoms occur.
<b>After Skin Contact</b>	:	Wash with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
<b>After Eye Contact</b>	:	If swallowed, rinse mouth with water (only if the person is conscious). Get medical attention if symptoms occur.
<b>After Swallowing</b>	:	In case of irritation, get medical attention

## Fire Fighting Measures

<b>Suitable Extinguishing Agents</b>	:	Use dry chemical or CO <sub>2</sub> for small fires; Use water, foam or dry chemical powder for large fires
<b>Specific Hazards</b>	:	No specific hazard

All data and information contained in this document are believed to be realised at the date of issue mentioned on this document. However, since Polymer Factory has no influence on the use, processing and application of the product, Polymer Factory can accept no responsibility whatsoever on this respect and the buyer can derive no rights there from. The buyer shall check the quality and all other properties of the product and assumes all responsibilities arising from the use of the products and the information related thereto. Polymer Factory accepts no liability arising from any infringement of intellectual property rights of third parties that is the result of manufacturing application or sale of products by the buyer.

**Fire Fighting Instructions** : Use self-contained breathing apparatus and skin protection

## Accidental Release Measures

**Person-Related Safety Precautions** : Use appropriate protection,  
\*see section on "Exposure Control and Personal Protection" below

**Environmental Protection** : Prevent entry into sewers, basements or confined areas. Dyke if necessary.  
\*see section on "Ecological Information" below

**Cleaning and Collecting** : Collect spilled material with a suitable material and place in sealable,  
labeled containers for later disposal. Clean up affected area with a large amount of water.

## Handling and Storage

**Safe Handling** : Normal standard practices of hygiene are applicable

**Storage** : 1. Store in closed containers and in a fireproof location.  
2. Do not store portable containers in direct sunlight.  
3. Keep containers closed when not in use.  
4. Store between the following temperatures:  

- 50 wt% aqueous solution: 5 and 30 °C
- Solid: Below 4°C

**Recommended Packaging** : Pack in sealed bottles

## Exposure Control & Personal Protection

### Personal Protective Equipment

**Respiratory Protection** : Use gas mask or filter respiratory as necessary

**Skin & Body Protection** : Not applicable, but handle in accordance with good industrial hygiene and safety practices. These practices include avoiding unnecessary exposure and ensuring removal of the material from eyes, skin and clothing.

**Eye protection** : Face shield or safety goggles as necessary

**Other Protection** : Eye wash facility and emergency shower

**Occupational Exposure Limits** : Not determined

**Engineering Controls** : Use ventilation as necessary

## Physical and Chemical Properties

### General information

**Building Block** : Hexamethylenediamine

**Branching unit** : Maleates

All data and information contained in this document are believed to be realised at the date of issue mentioned on this document. However, since Polymer Factory has no influence on the use, processing and application of the product, Polymer Factory can accept no responsibility whatsoever on this respect and the buyer can derive no rights there from. The buyer shall check the quality and all other properties of the product and assumes all responsibilities arising from the use of the products and the information related thereto. Polymer Factory accepts no liability arising from any infringement of intellectual property rights of third parties that is the result of manufacturing application or sale of products by the buyer.

<b>End groups</b>	:	Primary amines and Carboxylic acids
<b>Theoretical Molecular Weight</b>	:	5108 g/mol
<b>Form (aggregation form)</b>	:	Liquid
<b>Color</b>	:	Yellowish
<b>Odor</b>	:	Typical

## Change in condition

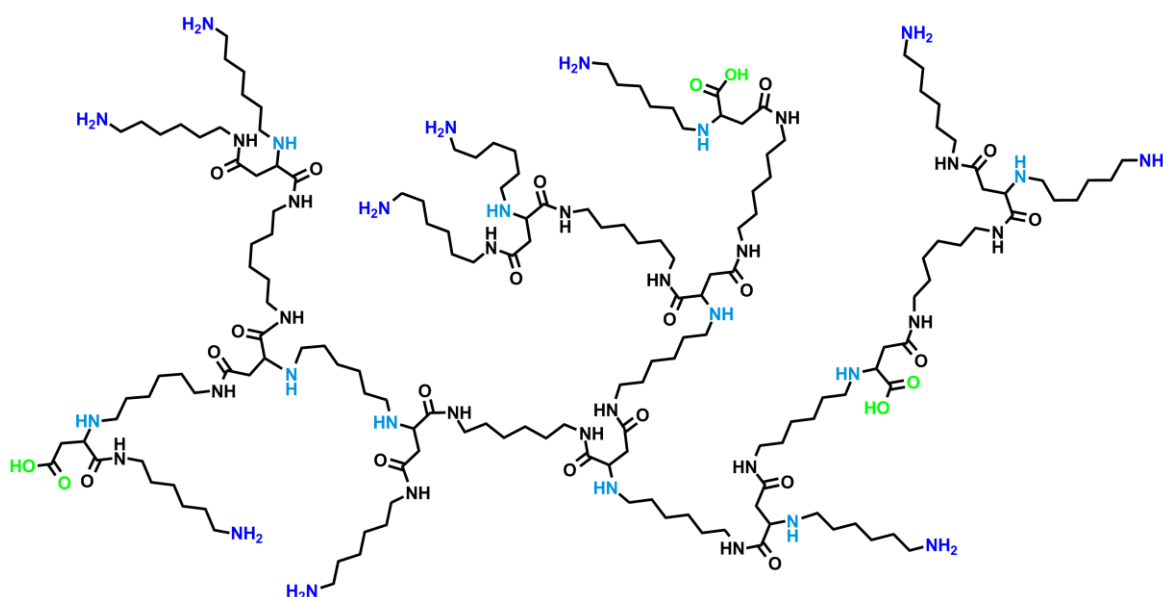
<b>Melting Point/Melting Range</b>	:	Not available
<b>Boiling Point/Boiling Range</b>	:	100°C
<b>Glass Transition Temperature, Tg</b>	:	Not available

<b>Specific Gravity</b>	:	1.3
<b>Solubility at 20°C</b>	:	Not available
i) <b>Water</b>	:	Soluble

\*Soluble in aromatic and chlorinated hydrocarbons

<b>Octanol/Water Coefficient</b>	:	Not available
<b>Flash Point</b>	:	Not available
<b>Vapour Pressure</b>	:	Not available

## Typical Idealized Structure



All data and information contained in this document are believed to be realised at the date of issue mentioned on this document. However, since Polymer Factory has no influence on the use, processing and application of the product, Polymer Factory can accept no responsibility whatsoever on this respect and the buyer can derive no rights there from. The buyer shall check the quality and all other properties of the product and assumes all responsibilities arising from the use of the products and the information related thereto. Polymer Factory accepts no liability arising from any infringement of intellectual property rights of third parties that is the result of manufacturing application or sale of products by the buyer.

## Stability and Reactivity

- Stability** : Stable under recommended storage and handling conditions.  
Reactive material.
- Thermal decomposition** : No specific data.
- Conditions to be avoided** : Keep away from heat, sparks and flame.
- Incompatibility** : Reactive with metals and acids.

## Toxicological Information

### Acute Toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Hexamethylenediamine	LC50 Inhalation Dusts and mists	Rat	>950mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	1110mg/kg	-
	LD50 Oral	Rat	750mg/kg	-

- Chronic Toxicity** : Not available

### Primary irritant effect

- On the skin** : Severely corrosive to the skin. Causes burns.
- Eye contact** : Severely corrosive to the eyes. Causes severe burns.
- Inhalation** : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Ingestion** : May cause burns to mouth, throat and stomach.

### Other information

- Mutagenicity** : Not available
- Reproductive Toxicity** : Not available

## Ecological Information

- Mobility** : Not available

### Marine Toxicity (Skeletonema costatum) :

Product/ingredient name	Result	Species	Exposure	Effects
Hexamethylenediamine	Acute EC50 15 mg/L	Algae	72 hours	-
	Acute EC50 23.4 mg/L	Daphnia	48 hours	-
	Acute LC50 62 mg/L	Fish	96 hours	-

All data and information contained in this document are believed to be realised at the date of issue mentioned on this document. However, since Polymer Factory has no influence on the use, processing and application of the product, Polymer Factory can accept no responsibility whatsoever on this respect and the buyer can derive no rights there from. The buyer shall check the quality and all other properties of the product and assumes all responsibilities arising from the use of the products and the information related thereto. Polymer Factory accepts no liability arising from any infringement of intellectual property rights of third parties that is the result of manufacturing application or sale of products by the buyer.

**Persistence and degradability** :

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Hexamethylenediamine	-	-	Readily

**Bio-accumulation** :

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Hexamethylenediamine	0.02	-	Low

**Ecotoxicity** : Not available

### Disposal Consideration

**Recommendation** : Disposal must be made according to official regulations  
**Methods of Disposal** : Dispose by combustion in an incinerator for chemical waste

### Transport Information\*

\*Non Regulated

**UN Identification No.** : Not Applicable

### Regulatory Information\*

**EU Regulation (EC) No. 1907/2006 (REACH)**

***Annex XIV - List of substances subject to authorisation***

***Substances of very high concern***

None of the components are listed.

***Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles***

Not applicable.

### Other information

If you require any further information concerning this or any of our other products then please contact us at [info@polymerfactory.com](mailto:info@polymerfactory.com).