

1. Product and Company Identification

Material name TORZEN™ U4803 NC01 PA66 Resin
Version # 1.1
MSDS Number 38727
Revision date 28-Sep-2012
Company Information INVISTA S.à r.l.
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e-mail**Product Use**

Polymers

2. Hazards Identification**Emergency overview**

Product may form explosive dust/air mixtures if high concentration of product dust is suspended in air.

Exposure to powder or dusts may be irritating to eyes, nose and throat.

Potential health effects**Eyes**

Contact with molten material may cause thermal burns.

Mechanically irritating. Dust or powder may irritate eye tissue. Symptoms include itching, burning, redness and tearing.

Skin

Dust or powder may irritate the skin. Prolonged or repeated skin contact may result in redness, burning sensation or dermatitis. Contact with molten material may cause thermal burns.

Inhalation

Dust may be slightly irritating to eyes and respiratory tract. Inhalation of dusts produced during cutting, grinding or sanding of this product may cause irritation of the respiratory tract.

Ingestion

Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

3. Composition / Information on Ingredients

Components	CAS #	Concentration
POLYHEXAMETHYLENE ADIPAMIDE	32131-17-2	>99.9%

Composition comments

One or more of the ingredients have been claimed as trade secret under the OSHA Hazard Communication Standard. The hazards of this (these) ingredient(s), if any, are given on this MSDS.

4. First Aid Measures**First aid procedures****Eye contact**

Rinse immediately with plenty of water, also under the eyelids. If irritation persists get medical attention.

Skin contact

Rinse with water. In case of contact with molten product, cool rapidly with water and seek immediate medical attention. Do not attempt to remove molten product from skin because skin will tear easily. Symptoms may include redness, drying of skin, itching and pain.

Inhalation

Move to fresh air. If breathing is difficult, give oxygen. Get medical attention, if needed.

Ingestion

If swallowed, do NOT induce vomiting. Never give anything by mouth to a victim who is unconscious or is having convulsions. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Consult a physician if necessary.

Notes to physician

Treat symptomatically.

5. Fire Fighting Measures

Flammable properties

Dusts at sufficient concentrations can form explosive mixtures with air. May burn, but does not ignite readily.

Extinguishing media

Suitable extinguishing media

Dry chemical, CO₂, water spray or regular foam.

Unsuitable extinguishing media

Do not use a solid water stream as it may scatter and spread fire.

Protection of firefighters

Protective equipment and precautions for firefighters

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire fighting equipment/instructions

Firefighters should wear full protective clothing including self contained breathing apparatus.

Hazardous combustion products

Traces of hydrogen cyanide may be found in fire conditions.

6. Accidental Release Measures

Personal precautions

Avoid inhalation of fumes from molten product. Molten material can cause burns. Handle molten material with care.

Environmental precautions

Prevent further leakage or spillage if safe to do so.

Methods for containment

Eliminate all sources of ignition or flammables that may come into contact with a spill of this material. Stop the flow of material, if this is without risk.

Methods for cleaning up

Where possible allow molten material to solidify naturally. Sweep up and shovel into suitable containers for disposal.

7. Handling and Storage

Handling

Use care in handling/storage. Molten material can cause burns. Handle molten material with care. Minimize dust generation and accumulation. Take measures to prevent the build up of electrostatic charge.

Storage

Keep the container tightly closed and dry. Do not store in direct sunlight. Keep from freezing. This material can accumulate static charge which may cause spark and become an ignition source. Prevent electrostatic charge build-up by using common bonding and grounding techniques.

To maintain product quality, do not store in heat or direct sunlight. Guard against dust accumulation of this material.

8. Exposure Controls / Personal Protection

Exposure guidelines

Particulates Not Otherwise Classified (PNOC): OSHA PEL (TWA) 15 mg/m³, 8 hr, total dust; 5 mg/m³, 8 hr, respirable dust.

Engineering controls

Keep formation of airborne dusts to a minimum. Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing.

Personal protective equipment

Eye / face protection

Wear dust goggles.

Skin protection

Wear suitable protective clothing. When material is heated, wear gloves to protect against thermal burns.

Respiratory protection

When dusts or thermal processing fumes are generated and ventilation is not sufficient to effectively remove them, appropriate respiratory protection must be provided.

In the case of respirable dust and/or fumes, use self-contained breathing apparatus.

General hygiene considerations

Use good industrial hygiene practices in handling this material. Wash hands before breaks and immediately after handling the product.

9. Physical & Chemical Properties

Appearance	Granular. Flakes. Chips.
Physical state	Solid.
Form	Solid.
Color	Based on specification. off-white.
Odor	Slight to none.
Odor threshold	Not available.
pH	Not Applicable
Vapor pressure	Not available.
Melting point/Freezing point	455 - 509 °F (235 - 265 °C)
Solubility (water)	0 %
Specific gravity	>1
Relative density	Not available.
Flash point	788 °F (420 °C) ASTM D1929
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Auto-ignition temperature	851 °F (455 °C) ASTM D1929
Evaporation rate	Not Applicable
Other data	
Chemical family	Polyamide
Decomposition temperature	50% at 420°C; 96% at 900°C

10. Chemical Stability & Reactivity Information

Chemical stability

Stable under normal conditions.

Conditions to avoid

Minimize dust generation and accumulation.

Incompatible materials

This product may react with oxidizing agents.

Hazardous decomposition products

Ammonia gas may be liberated at high temperatures.
Hydrogen cyanide (hydrocyanic acid).
Nitrogen oxides (NOx).
Carbon oxides.

Possibility of hazardous reactions

Not expected to occur.

11. Toxicological Information

Acute effects Not established

Chronic effects Occupational interstitial lung disease (ILD) has been observed at very high dust levels.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Reproductive effects Not established

Eye contact

See further information.

Skin contact

See further information.

Toxicological information

Due to this material's high molecular weight, this material is considered to be of little to no toxicological concern.

Further information Dust causes irritation to the eyes, skin and mucous membranes and may lead to toxic lung edemas.

POLYHEXAMETHYLENE ADIPAMIDE

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12. Ecological Information

Ecotoxicity This product is not expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.

Environmental effects Based on the physical properties of this product, significant environmental persistence and bioaccumulation would not be expected.

Persistence and degradability Based on the physical properties of this product, significant environmental persistence and bioaccumulation would not be expected.

13. Disposal Considerations

Disposal instructions

Dispose in accordance with all applicable regulations.

14. Transport Information

Department of Transportation (DOT) Requirements

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

15. Regulatory Information**US federal regulations**

All components are on the U.S. EPA TSCA Inventory List or are not required to be listed on the inventory.

This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
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Section 302 extremely hazardous substance	No
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Canadian regulations

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

This material is not a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).

All components are listed on the DSL or are not required to be listed on the DSL.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information**HMIS® ratings**

Health: 0
Flammability: 1
Physical hazard: 0

NFPA ratings

Health: 0
Flammability: 1
Instability: 0

Disclaimer

This Material Safety Data Sheet ("MSDS") contains selected information about a specific INVISTA product or group of products. It relates only to the identified product and any identified uses and is based on information available as of the date hereof. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. Information provided herein with respect to any hazards that may be associated with the product is not meant to suggest that use of the product in a given application will necessarily result in any exposure or risk to workers or the general public. THIS MSDS WAS PREPARED PURSUANT TO GOVERNMENT REGULATIONS THAT IDENTIFY SPECIFIC TYPES OF INFORMATION TO BE PROVIDED HEREIN. IT IS THEREFORE NOT INTENDED AS, AND DOES NOT CONTAIN, A COMPLETE STATEMENT OF, AND DOES NOT CONSTITUTE A REPRESENTATION, WARRANTY OR GUARANTY WITH REGARD TO, A PRODUCT'S CHARACTERISTICS, USES, QUALITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR THE SUITABILITY, SAFETY, EFFICACY, HAZARDS OR HEALTH EFFECTS OF THE PRODUCT, WHETHER USED SINGULARLY OR IN COMBINATION WITH ANY OTHER PRODUCT, EXCEPT TO THE EXTENT REQUIRED BY THE RELEVANT LAW AND REGULATIONS. Purchasers and users of the product are responsible for determining that the product is suitable for the intended use and that their workers and the general public are advised of any risks resulting from such use. Nothing contained in this MSDS shall be construed to modify any of the commercial terms pursuant to which the product was sold by INVISTA including, but not limited to, terms and conditions addressing each party's respective rights and obligations with regard to warranties, remedies and indemnification.

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This disclaimer shall be effective to the extent allowed by law. Should any provision be deemed to be ineffective or unenforceable, that provision shall be deemed severed from the disclaimer and the remaining provisions shall continue to have full force and effect.

Issue date

28-Sep-2012