

Aegis® Nylon Resin ZI (H35ZI, H55ZI, H73ZI, H85ZI, H95ZI, H100ZI, H135ZI)**00000020275**

Version 1.3

Revision Date 07/19/2017

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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Aegis® Nylon Resin ZI (H35ZI, H55ZI, H73ZI, H85ZI, H95ZI, H100ZI, H135ZI)

Number : 00000020275

Product Use Description : Compounding, melt spinning, and extrusion processes

Manufacturer or supplier's details : AdvanSix Inc.
300 Kimball Dr Ste 101
Parsippany, NJ 07054

For more information call : 1-844-890-8949
+1-973-526-1800

In case of emergency call : Transportation and/or Poison Control (CHEMTREC):
1-800-424-9300 or +1-703-527-3887
:
: (24 hours/day, 7 days/week)

SECTION 2. HAZARDS IDENTIFICATION**Emergency Overview**

Form : pellets

Color : natural colour

Odor : slight organic

Classification of the substance or mixture

Not a hazardous substance or mixture.

Precautionary statements : **Prevention:**
Use personal protective equipment as required.

Hazards not otherwise : Product dust may be irritating to eyes, skin and respiratory

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classified

system.

Thermal decomposition can lead to release of irritating gases and vapours.

The molten product can cause serious burns.

Carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Nylon 6

Chemical nature : Mixture

Chemical name	CAS-No.	Concentration
Nylon 6	25038-54-4	>97.00 %
ε-Caprolactam	105-60-2	<1.00 %

SECTION 4. FIRST AID MEASURES

General advice : First aider needs to protect himself. Move out of dangerous area. Take off all contaminated clothing immediately.

Inhalation : Remove to fresh air. Call a physician if irritation develops or persists.

Skin contact : Wash off immediately with plenty of water. Use a mild soap if available. Call a physician if irritation develops or persists. Cool skin rapidly with cold water after contact with hot polymer. Call a physician immediately.

Eye contact : Rinse thoroughly with plenty of water, also under the eyelids. Protect unharmed eye. Call a physician if irritation develops or persists.

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Ingestion : Unlikely route of exposure. Seek medical advice.

Notes to physician

Treatment : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water spray
Foam
Dry chemical
Carbon dioxide (CO₂)

Specific hazards during firefighting : In case of fire hazardous decomposition products may be produced such as:
Hydrogen cyanide (hydrocyanic acid)
Ammonia
Carbon monoxide

Special protective equipment for firefighters : In the event of fire and/or explosion do not breathe fumes.
Wear self-contained breathing apparatus and protective suit.

Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Wear personal protective equipment. Unprotected persons must be kept away.
Ensure adequate ventilation.

Environmental precautions : Should not be released into the environment.

Methods for cleaning up : Sweep up or vacuum up spillage and collect in suitable container for disposal.
Avoid dust formation.

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SECTION 7. HANDLING AND STORAGE**Handling**

Handling : Wear personal protective equipment.
Heat only in areas with appropriate exhaust ventilation.
Do not breathe fumes, vapour.
Provide appropriate exhaust ventilation at machinery and at places where dust can be generated.
Do not breathe dust.
Avoid contact with skin and eyes.
Handle in accordance with good industrial hygiene and safety practice.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Storage

Requirements for storage areas and containers : Keep containers tightly closed in a dry, cool and well-ventilated place.

Further information on storage conditions : Store in original container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective measures : Handle in accordance with good industrial hygiene and safety practice.
Ensure that eyewash stations and safety showers are close to the workstation location.

Engineering measures : Effective exhaust ventilation system
Use adequate ventilation and/or engineering controls in high temperature processing to prevent exposure to vapours.

Eye protection : Wear as appropriate:
Safety glasses with side-shields
Face-shield

Hand protection : When handling hot material, use heat resistant gloves.

Skin and body protection : Wear heat protective clothing for handling hot material.

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Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene measures : General industrial hygiene practice.

Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat or drink.

Exposure Guidelines

Components	CAS-No.	Value	Control parameters	Update	Basis
ε-Caprolactam	105-60-2	TWA : Time weighted average	5 mg/m3	2008	ACGIH:US. ACGIH Threshold Limit Values
Further information	:	Form of exposure : Inhalable fraction and vapor.			

ε-Caprolactam	105-60-2	REL : Recommended exposure limit (REL):	1 mg/m3 (0.22 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards
Further information	:	Form of exposure : Vapour			

ε-Caprolactam	105-60-2	STEL : Short term exposure limit	3 mg/m3 (0.66 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards
Further information	:	Form of exposure : Vapour			

ε-Caprolactam	105-60-2	REL : Recommended exposure limit (REL):	1 mg/m3	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards
Further information	:	Form of exposure : Dust.			

SAFETY DATA SHEET


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00000020275

Version 1.3

Revision Date 07/19/2017

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ε-Caprolactam	105-60-2	STEL : Short term exposure limit	3 mg/m3	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards
Further information	:	Form of exposure : Dust.			

ε-Caprolactam	105-60-2	STEL : Short term exposure limit	3 mg/m3	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)
Further information	:	Form of exposure : Dust.			

ε-Caprolactam	105-60-2	STEL : Short term exposure limit	40 mg/m3 (10 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)
Further information	:	Form of exposure : Vapour			

ε-Caprolactam	105-60-2	TWA : Time weighted average	1 mg/m3	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)
Further information	:	Form of exposure : Dust.			

ε-Caprolactam	105-60-2	TWA : Time weighted average	20 mg/m3 (5 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)
Further information	:	Form of exposure : Vapour			

Particulates Not Otherwise Regulated		TWA : Time weighted average	10 mg/m3	2008	ACGIH:US. ACGIH Threshold Limit Values
Further information	:	Form of exposure : Inhalable particles.			

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Particulates Not Otherwise Regulated		TWA : Time weighted average	3 mg/m3	2008	ACGIH:US. ACGIH Threshold Limit Values
Further information	:	Form of exposure : Respirable particles.			

Particulates Not Otherwise Regulated		PEL : Permissible exposure limit	15 mg/m3	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
Further information	:	Form of exposure : Total dust.			

Particulates Not Otherwise Regulated		PEL : Permissible exposure limit	5 mg/m3	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
Further information	:	Form of exposure : Respirable fraction.			

Particulates Not Otherwise Regulated		TWA : Time weighted average	15 mg/m3	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)
Further information	:	Form of exposure : Total dust.			

Particulates Not Otherwise Regulated		TWA : Time weighted average	5 mg/m3	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)
Further information	:	Form of exposure : Respirable fraction.			

Particulates Not Otherwise Regulated		TWA : Time weighted average	15 mg/m3	2000	Z3:US. OSHA Table Z-3 (29 CFR 1910.1000)
Further information	:	Form of exposure : Total dust.			

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00000020275

Version 1.3

Revision Date 07/19/2017

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Particulates Not Otherwise Regulated		TWA : Time weighted average	5 mg/m3	2000	Z3:US. OSHA Table Z-3 (29 CFR 1910.1000)
Further information	:	Form of exposure : Respirable fraction.			

Particulates Not Otherwise Regulated		TWA : Time weighted average	50 millions of particles per cubic foot of air	2000	Z3:US. OSHA Table Z-3 (29 CFR 1910.1000)
Further information	:	Form of exposure : Total dust.			

Particulates Not Otherwise Regulated		TWA : Time weighted average	15 millions of particles per cubic foot of air	2000	Z3:US. OSHA Table Z-3 (29 CFR 1910.1000)
Further information	:	Form of exposure : Respirable fraction.			

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	:	pellets
Color	:	natural colour
Odor	:	slight organic
pH	:	Note: Not applicable
Melting point/range	:	220 °C
Flash point	:	Note: not determined

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Lower explosion limit	: Note: Not applicable
Upper explosion limit	: Note: Not applicable
Vapor pressure	: Note: Not applicable
Vapor density	: Note: Not applicable
Density	: 1.13 - 1.15 g/cm ³
Water solubility	: Note: insoluble
Ignition temperature	: Note: not determined
Decomposition temperature	: Note: No decomposition if used as directed. Note: No decomposition if used as directed.

SECTION 10. STABILITY AND REACTIVITY

Chemical stability	: Stable under recommended storage conditions.
Possibility of hazardous reactions	: Hazardous polymerisation does not occur.
Conditions to avoid	: Avoid exposure to temperatures exceeding recommended processing conditions. AdvanSix should be contacted if questions arise concerning specific processing conditions.
Incompatible materials to avoid	: Strong acids
Hazardous decomposition products	: Irritant gases/vapours Flammable gases/vapours Carbon monoxide Ammonia Ketones

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Hydrogen cyanide (hydrocyanic acid)
Amines**SECTION 11. TOXICOLOGICAL INFORMATION**

- Acute oral toxicity
ε-Caprolactam : LD50: 1,475 - 1,876 mg/kg
Species: Rat
- Acute inhalation toxicity : Acute toxicity estimate: > 10 mg/l , dust/mist
Exposure time: 4 h
Method: Calculation method
- : Acute toxicity estimate: > 10 mg/l , dust/mist
Exposure time: 4 h
Method: Calculation method
- Acute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method
- : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method
- Skin irritation
ε-Caprolactam : Species: Rabbit
Exposure time: 24 h
Note: occluded application
Neat (dry):
slight irritation
Moistened:
negligible
- Eye irritation : Note: Resin particles, like other inert materials, are
mechanically irritating to eyes.
- Repeated dose toxicity
ε-Caprolactam : Species: Rat
Application Route: Inhalation

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Exposure time: (13 Weeks)
NOAEL (No observed adverse effect level): 0.243 mg/l

Genotoxicity in vitro
ε-Caprolactam : Note: In vitro tests did not show mutagenic effects

Genotoxicity in vivo
ε-Caprolactam : Note: In vivo tests did not show mutagenic effects

SECTION 12. ECOLOGICAL INFORMATION

Toxicity to fish
ε-Caprolactam : static test
LC50: > 500 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates
ε-Caprolactam : EC50: > 500 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)

Toxicity to algae
ε-Caprolactam : EC50: 130 mg/l
Exposure time: 72 h
Species: Algae

Further information on ecology

Additional ecological information : Accumulation in aquatic organisms is unlikely.
Not inherently biodegradable.
Aquatic toxicity is unlikely due to low solubility.

SECTION 13. DISPOSAL CONSIDERATIONS

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Disposal methods : Observe all Federal, State, and Local Environmental regulations.

SECTION 14. TRANSPORT INFORMATION

DOT Not dangerous goods

TDG Not dangerous goods

IATA Not dangerous goods

IMDG Not dangerous goods

SECTION 15. REGULATORY INFORMATION**Inventories**

US. Toxic Substances Control Act : On TSCA Inventory

Australia. Industrial Chemical (Notification and Assessment) Act : On the inventory, or in compliance with the inventory

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL) : All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List : On the inventory, or in compliance with the inventory

Korea. Toxic Chemical Control Law (TCCL) List : On the inventory, or in compliance with the inventory

Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act : On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances : On the inventory, or in compliance with the inventory

New Zealand. Inventory of : On the inventory, or in compliance with the inventory

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Chemicals (NZIoC), as
published by ERMA New
Zealand

National regulatory information

- SARA 302 Components** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
- SARA 313 Components** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
- SARA 311/312 Hazards** : No SARA Hazards
- California Prop. 65** : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

WHMIS Classification : Not Rated
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

SECTION 16. OTHER INFORMATION

	HMIS III	NFPA
Health hazard	: 1	1
Flammability	: 1	1
Physical Hazard	: 0	
Instability	:	0

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Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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Prepared by AdvanSix Product Stewardship Group