



ZYTEL ® nylon resin

Ref. 150000000690
Version 3.16 (replaces: Version 3.15)

Revision Date 10.05.2019
Issue Date 10.05.2019

This Safety Data Sheet adheres to the standards and regulatory requirements of Great Britain and may not meet the regulatory requirements in other countries.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : ZYTEL ® nylon resin

Types : 74G13J, 74G13L (1); 74G20HSL (2); 74G30L, 74G30W, 74G30WHSL, 74G30HSL (3); 74G33CHSL, 74G33CL, 74G33EHSL, 74G33EL, 74G33J, 74G33L, 74G33W, FE170001, JB67P(4); FE5555 (5); EFE7390(6); 74G43J (7), FE18033 (8)

Recycling code : 1) ISO 11469 : >PA66+PA6-GF13<; 2) ISO 11469 : >PA66+PA6-GF20<; 3) ISO 11469 : >PA66+PA6-GF30<; 4) ISO 11469 : >PA66+PA6-GF33<; 5) ISO 11469 : >PA66+PA6-GF35<; 6) ISO 11469 : >PA66+PA6-GF40<; 7) ISO 11469 : >PA66/6+PA6-GF43<; 8) ISO 11469 : >PA66+PA6-IGF33<(><<>

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Resin for moulding and/or extrusion

1.3. Details of the supplier of the safety data sheet

Company : DuPont Iberica S.L.
Avda. Diagonal, 571
ES-08029 Barcelona
Spain

Telephone : +34-98-512-4000

Telefax : +34-98-512-4090

E-mail address : sds-support@che.dupont.com

1.4. Emergency telephone number

+(44)-870-8200418 (CHEMTREC)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Not a classified substance or mixture according to Regulation (EC) No. 1272/2008.

2.2. Label elements

Not a classified substance or mixture according to Regulation (EC) No. 1272/2008.

2.3. Other hazards



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This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

Chemical nature of the substance/mixture : Polyamide
: Glass fibre
: Additives

3.1. Substances

Not applicable

3.2. Mixtures

Registration number	Classification according to Regulation (EU) 1272/2008 (CLP)	Concentration (% w/w)
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ε-Caprolactam (CAS-No.105-60-2) (EC-No.203-313-2)

01-2119457029-36	Acute Tox. 4; H302 Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335	< 0.2 %
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The above products are compliant to REACH registration obligations; Registration number(s) may not be provided because substance(s) are exempted, not yet registered under REACH or are registered under another regulatory process (biocide uses, plant protection products), etc.

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice : Remove from exposure, lie down. Never give anything by mouth to an unconscious person. No hazards which require special first aid measures. If a person vomits when lying on his back, place him in the recovery position.

Inhalation : Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. Consult a physician after significant exposure.

Skin contact : Cool skin rapidly with cold water after contact with molten material. Do not peel polymer from the skin. Obtain medical attention.

Eye contact : Flush eyes with water as a precaution. Obtain medical attention.

Ingestion : No hazards which require special first aid measures. Drink water as a precaution.

4.2. Most important symptoms and effects, both acute and delayed

no data available

4.3. Indication of any immediate medical attention and special treatment needed



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no data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide (CO₂), Dry powder, Foam, Water

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting : Large molten masses may ignite spontaneously in air. Water quenching is good practice. Under conditions giving incomplete combustion, hazardous gases produced may consist of: Carbon monoxide Carbon dioxide (CO₂) (see also section 10)

5.3. Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Wear suitable protective equipment.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Do not allow run-off from fire fighting to enter drains or water courses. Burns after ignition without external heat source (IEC 60695-11-10 : HB).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions : Ventilate the area. Refer to protective measures listed in sections 7 and 8.

6.2. Environmental precautions

Environmental precautions : Try to prevent the material from entering drains or water courses. Do not contaminate surface water.

6.3. Methods and materials for containment and cleaning up

Methods for cleaning up : Clean up promptly by sweeping or vacuum. Sweep up or vacuum up spillage and collect in suitable container for disposal.

Other information : Use mechanical handling equipment.

6.4. Reference to other sections

Not applicable

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling : Protect from contamination. When opening containers, avoid breathing vapours



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that may be emanating. Open container only in well-ventilated area. Provide appropriate exhaust ventilation at dryers, machinery and at places where dust or volatiles can be generated. General precaution for all plastics and elastomers: For personal protection see section 8. In case of insufficient ventilation, wear suitable respiratory equipment. No special handling advice required.

Advice on protection against fire and explosion : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).

Dust explosion class : no data available

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : No special storage conditions required. Keep container tightly closed in a dry and well-ventilated place. Protect from contamination.

Further information on storage conditions : none

Advice on common storage : No special restrictions on storage with other products.

Other data : No decomposition if stored and applied as directed.

7.3. Specific end use(s)

no data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

If sub-section is empty then no values are applicable. For further information on any control parameters provided, please refer to the relevant regulation.

Components with workplace control parameters

Type	Control parameters (Expressed as)	Update	Regulatory basis
Form of exposure			

Dust (inhalable and respirable fraction)

Long-term exposure limit (8-hour TWA reference period) Inhalable	10 mg/m ³	2011-12-01	UK. EH40 WEL - Workplace Exposure Limits
Long-term exposure limit (8-hour TWA reference period) Respirable	4 mg/m ³	2011-12-01	UK. EH40 WEL - Workplace Exposure Limits

ε-Caprolactam (CAS-No. 105-60-2)

Limit Value - eight hours Dust and vapour	10 mg/m ³	2000-06-16	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
Short term exposure limit Dust and vapour	40 mg/m ³	2000-06-16	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values



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Long-term exposure limit (8-hour TWA reference period) inhalable dust	1 mg/m ³	2011-12-01	UK. EH40 WEL - Workplace Exposure Limits
Long-term exposure limit (8-hour TWA reference period) Dust and vapour	10 mg/m ³	2011-12-01	UK. EH40 WEL - Workplace Exposure Limits
Short-term exposure limit (15-minute reference period) inhalable dust	3 mg/m ³	2011-12-01	UK. EH40 WEL - Workplace Exposure Limits
Short-term exposure limit (15-minute reference period) Dust and vapour	20 mg/m ³	2011-12-01	UK. EH40 WEL - Workplace Exposure Limits

8.2. Exposure controls

- Eye protection : Safety glasses with side-shields Wear tightly fitting chemical splash goggles and face shield when possibility exists for eye and face contact due to spattering or splashing of molten material.
- Hand protection : Material: Heat insulating gloves
Protective gloves (Type : Kevlar® - heat resistant, use possible until worn out)
- Skin and body protection : If there is a potential for contact with hot/molten material wear heat resistant clothing and footwear. Regular cleaning of equipment, work area and clothing.
- Protective measures : No special protective equipment required.
- Hygiene measures : Wash hands before breaks and at the end of workday. General precaution for all plastics and elastomers: Do not breathe fumes evolved from hot polymer.
- Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Suitable respiratory equipment: Half mask with a particle filter FFP2/FFP3 (EN149)

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Form : pellets
- Colour : various
- Odour : none
- Odour Threshold : no data available
- pH : Not applicable
- Melting point/range : 235 - 265 °C
- Boiling point/boiling range : no data available
- Flash point : Not applicable
- Self-Accelerating decomposition : no data available



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temperature (SADT)

Flammability (solid, gas) : no data available

Ignition temperature : no data available

Thermal decomposition : > 300 °C

Oxidizing properties : no data available

Explosive properties : no data available

Lower explosion limit/ Lower
flammability limit : no data available

Upper explosion limit/ upper
flammability limit : no data available

Vapour pressure : no data available

Density : 1.25 - 1.70 g/cm³ , Method: ISO 1183

Relative density : no data available

Bulk density : no data available

Water solubility : insoluble

Partition coefficient: n-octanol/water : no data available

Auto-ignition temperature : no data available

Solubility in other solvents : no data available

Viscosity, dynamic : no data available

Viscosity, kinematic : no data available

Relative vapour density : no data available

Evaporation rate : no data available

9.2. Other information

No other data to be specially mentioned.

SECTION 10: Stability and reactivity

10.1. Reactivity : no data available

10.2. Chemical stability : no data available



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- 10.3. Possibility of hazardous reactions** : None. Further information : During drying, cleaning and moulding, small amounts of hazardous gases and/or particulate matter may be released. These may irritate eyes, nose and throat. Large molten masses may give off hazardous gases. Water quenching is good practice. Stable under normal conditions.
- 10.4. Conditions to avoid** : Avoid heating for prolonged periods above the recommended upper processing limit.
- 10.5. Incompatible materials** : Strong acids and oxidizing agents
- 10.6. Hazardous decomposition products** : Acrolein
Aldehydes
Ammonia
Cyclopentanone
Hydrogen cyanide (hydrocyanic acid)
Caprolactam
Organic acids
Alcohols

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity

- ϵ -Caprolactam
LD50 / Rat : 1,475 mg/kg
Method: Directive 67/548/EEC, Annex V, B.1.

Acute inhalation toxicity

- ϵ -Caprolactam
Acute toxicity estimate / 4 h Rat : 5 mg/l
Method: OECD Test Guideline 403
Respiratory effects

Acute dermal toxicity

- ϵ -Caprolactam
LD50 / Rat : > 2,000 mg/kg

Skin irritation

- ϵ -Caprolactam
human
Classification: Irritating to skin.
Result: Severe skin irritation

Eye irritation

- ϵ -Caprolactam
Rabbit
Classification: Irritating to eyes.



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Result: Irritation to eyes, reversing within 21 days

Respiratory or skin sensitisation

- ϵ -Caprolactam
Guinea pig
Classification: Does not cause respiratory sensitisation.
Result: Does not cause respiratory sensitisation.

Guinea pig
Classification: Does not cause skin sensitisation.
Result: Does not cause skin sensitisation.
Method: OECD Test Guideline 406

Repeated dose toxicity

- ϵ -Caprolactam
Oral Rat
Exposure time: 90 d
Method: OECD Test Guideline 408
No toxicological effects warranting significant target organ toxicity classification were seen below the recommended guidance values for classification.

Inhalation Rat
Exposure time: 90 d
No toxicological effects warranting significant target organ toxicity classification were seen below the recommended guidance values for classification.

Mutagenicity assessment

- ϵ -Caprolactam
Animal testing did not show any mutagenic effects. Genetic damage in cultured mammalian cells was observed in some laboratory tests but not in others. Did not cause genetic damage in cultured bacterial cells.

Carcinogenicity assessment

- ϵ -Caprolactam
Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects.

Toxicity to reproduction assessment

- ϵ -Caprolactam
No toxicity to reproduction No effects on or via lactation

Assessment teratogenicity

- ϵ -Caprolactam
No toxicity to reproduction

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish



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- ϵ -Caprolactam
LC50 / 96 h / *Oryzias latipes* (Orange-red killifish): > 100 mg/l
Method: OECD Test Guideline 203

Toxicity to aquatic plants

- ϵ -Caprolactam
ErC50 / 72 h / *Pseudokirchneriella subcapitata* (green algae): > 1,000 mg/l
Method: OECD Test Guideline 201

NOEC / 72 h / *Pseudokirchneriella subcapitata* (green algae): 1,000 mg/l
Method: OECD Test Guideline 201

Toxicity to aquatic invertebrates

- ϵ -Caprolactam
EC50 / 48 h / *Daphnia magna* (Water flea): > 1,000 mg/l
Method: OECD Test Guideline 202

Chronic toxicity to aquatic Invertebrates

- ϵ -Caprolactam
NOEC / 21 d / *Daphnia magna* (Water flea): 100 mg/l
Method: OECD Test Guideline 211

12.2. Persistence and degradability

Biodegradability

- ϵ -Caprolactam
/ 14 d
Biodegradation: 82 %
Method: OECD Test Guideline 301C
Biodegradable

12.3. Bioaccumulative potential

Bioaccumulation

- ϵ -Caprolactam
Bioaccumulation is unlikely.

12.4. Mobility in soil

no data available

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6. Other adverse effects



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no data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Product : Like most thermoplastic plastics the product can be recycled. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Can be landfilled, when in compliance with local regulations. Do not contaminate ponds, waterways or ditches with chemical or used container.
- Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
- European Waste Catalogue number : 07 02 99: Wastes not otherwise specified.

SECTION 14: Transport information

ADR

- 14.1. UN number: Not applicable
14.2. UN proper shipping name: Not applicable
14.3. Transport hazard class(es): Not applicable
14.4. Packing group: Not applicable
14.5. Environmental hazards: none
- 14.6. Special precautions for user:
Not classified as dangerous in the meaning of transport regulations.

IATA_C

- 14.1. UN number: Not applicable
14.2. UN proper shipping name: Not applicable
14.3. Transport hazard class(es): Not applicable
14.4. Packing group: Not applicable
14.5. Environmental hazards: none
- 14.6. Special precautions for user:
Not classified as dangerous in the meaning of transport regulations.

IMDG

- 14.1. UN number: Not applicable
14.2. UN proper shipping name: Not applicable
14.3. Transport hazard class(es): Not applicable
14.4. Packing group: Not applicable
14.5. Environmental hazards: none
- 14.6. Special precautions for user:
Not classified as dangerous in the meaning of transport regulations.
- 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information



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15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals

Not applicable

Major Accident Hazard Legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

Not applicable

Water contaminating class (Germany)

nwg not water endangering

15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this/these product(s).

SECTION 16: Other information

Full text of H-Statements referred to under section 3.

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.

Abbreviations and acronyms

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity estimate
CAS-No.	Chemical Abstracts Service number
CLP	Classification, Labelling and Packaging
EbC50	Concentration at which 50% reduction of biomass is observed
EC50	Median effective concentration
EN	European Norm
EPA	Environmental Protection Agency
ErC50	Concentration at which a 50% inhibition of growth rate is observed
EyC50	Concentration at which 50 % inhibition of yield is observed
IATA_C	International Air Transport Association (Cargo)
IBC	International Bulk Chemical Code
ICAO	International Civil Aviation Organization
ISO	International Standard Organization
IMDG	International Maritime Dangerous Goods
LC50	Median Lethal Concentration
LD50	Median Lethal Dose



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LOEC	Lowest Observed Effect Concentration
LOEL	Lowest observed effect level
MARPOL	International Convention for the Prevention of Marine Pollution from Ships
n.o.s.	Not Otherwise Specified
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No observed adverse effect level
NOEC	No Observed Effect Concentration
NOEL	No Observed Effect Level
OECD	Organisation for Economic Co-operation and Development
OPPTS	Office of Prevention, Pesticides and Toxic Substances
PBT	Persistent, Bioaccumulative and Toxic
STEL	Short term exposure limit
TWA	Time Weighted Average (TWA):
vPvB	very Persistent and very Bioaccumulative

Restrictions on use

Do not use DuPont materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless the material has been provided from DuPont under a written contract that is consistent with DuPont policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your DuPont representative. You may also request a copy of the DuPont POLICY Regarding Medical Applications and DuPont CAUTION Regarding Medical Applications.

Further information

Before use read DuPont's safety information.

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An Exposure Scenario (ES) is not required.

Note: The classification of substances listed in Annex VI to the CLP regulation are derived from assessment of the best knowledge and information available at the time of its publication or subsequent amendments. The information on components provided in sections 11 and 12 of this safety data sheet may in some cases not align with a legally binding classification on the basis of technical progress and availability of new information.

Significant change from previous version is denoted with a double bar.

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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The above information relates only to the specific material(s) designated herein and may not be valid for such material(s) used in combination with any other materials or in any process or if the material is altered or processed, unless specified in the text.