SAFETY DATA SHEET

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

1.1 Product identifier

UBE NYLON TERPALEX 6434MT1
Polyamide 6/66/12
CAS No.: 40959-29-3

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

Relevant Identified uses: Extrusion, Injection etc.
Uses advised against: MEDICAL APPLICATIONS such as any implantation in the human body or any contact with internal body fluids/tissues are PROHIBITED, since compliance with medical regulations is not assured.

1.3 Details of the supplier of the safety data sheet

UBE Corporation
Performance Polymers & Chemicals Division, Nylon Polymer Business Department / Composite Business Department
Seavans North Building, 1-2-1 Shibaura Minato-ku,
Tokyo 105-8449, Japan (Nylon Polymer Business Department) /
Urbannet Nagoya Buliding, 1-1-10, Higashisakura, Higashi-ku,
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Telephone: +81-3-5419-6173 (Nylon Polymer Business Department) /
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+81-52-961-1379 (Composite Business Department)
E-mail: msds_nylon@ube.com

1.4 Emergency telephone number

UBE Corporation
Telephone: +81-3-5419-6173 / +81-52-961-1373
(within business hours)

Section 2: Hazards identification

2.1 Classification of the substance or mixture

GHS classification of the substance/mixture: This product is not classified as hazardous under GHS.

2.2 Label elements

Hazard pictograms	None
Signal word	None
Hazard statements	None
Precautionary statements	
Prevention	None
response	None
storage	None
disposal	None
Supplemental Hazard information (EU)	Not applicable

2.3 Other hazards None known

Section 3: Composition/information on ingredients

3.1 Mixture

Ingredient name	Conc. (%)	EC No.	CAS No.	Classification according to GHS*1)
Polyamide 6/66/12	> 94	- (Polymer)	40959-29-3	not classified
ε-Caprolactam	< 5	203-313-2	105-60-2	Acute Tox. (Oral) 4, H302 Acute Tox. (Inhalation) 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT-SE 3, H335
Others	< 1	-	-	not classified

*1) See Section 16 for full text of hazard class and category codes.

Section 4: First aid measures

4.1 Description of first aid measures

General advice: Move out of dangerous area. Take off all contaminated clothing immediately. Obtain immediate medical attention in case of severe exposure, even if the exposed person has no symptom. Show this safety data sheet to the doctor in attendance.

Inhalation: If exposed to vapors from heating and molding material, remove to fresh air. If symptoms, coughing and discomfort in nose and throat remain, get medical attention.

Skin contact: Wash material off skin with plenty of water and soap.
If redness, itching or burning sensation develops, get medical attention.
If molten polymer contacts skin, cool immediately with cold and clean water.
Do not attempt to peel the solidified polymer from skin, and get medical attention for thermal burn.

Eye contact: Immediately flush with plenty of clean water for at least 15 minutes.
If redness, itching or burning sensation develops, do not rub eyes and immediately get medical attention.

Ingestion: If swallowed, wash out mouth thoroughly and give water to drink. Seek immediate medical attention. Speed is essential. Do not induce vomiting, unless instructed by medical personnel.

4.2 Most important symptoms and effects, both acute and delayed At molten state, expected to cause burns to skin. Irreversible dermatitis will occur if you do not wash affected skin immediately and thoroughly.

4.3 Indication of any immediate medical attention and special treatment needed Not available.

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Water, dry chemical and carbon dioxide

Unsuitable extinguishing media	None

5.2 Special hazards arising from the substance or mixture

May produce harmful gasses, primary CO, CO2 and small amount of HCN and NH3.

5.3 Advice for firefighters

Remove containers from fire and cool them with water spray. Firefighters should wear an approved self-contained breathing apparatus and full protective clothing. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For large-scale spills, ensure full personal protection is worn (see Section 8). Stop leak if possible without personal risk.

6.2 Environmental precautions

Prevent from contaminating soil and/or from entering, sewage, drainage systems and/or bodies of water.

6.3 Methods and material for containment and cleaning up

Sweep up to prevent slipping on polymer pellets and collects into suitable containers for disposal.

6.4 Reference to other sections

For recommended personal protective equipment, see Section 8.
For disposal considerations, see Section 13.

Section 7: Handling and storage

7.1 Precautions for safe handling

At molding process, avoid inhalation of vapours from machine and contacting with molten polymer. Reinforcing material and polymer dust may cause irritation and redness of skin and eye.
After handling, wash with soap and plenty of clean water.
Not to eat, drink and smoke in work areas.
Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

In case of pellet, transfer of polymer pellets will produce static electricity. This should be reduced or eliminated as much as possible since they provide a source of ignition for flammable vapour or gasses that may be present in an industrial area or can shock operators.

7.3 Specific end use(s)

No additional information available.

Section 8: Exposure controls/personal protection

8.1 Control parameters

JP limit values	Not available
US limit values (ACGIH)	Not available
Other: human health (DNELs)	Not available
Other: environmental (PNEC)	Not available

8.2 Exposure controls

Appropriate engineering controls	Adequate ventilation should be maintained at handing. Additionally, local exhaust ventilation recommended at molding

process.

Personal protection equipment	Eye/face protection: Safety goggles should be worn. At treating hot polymer or molding, face shield should be recommended. Skin protection: Safety shoes or boots. Chemical resistant clothes Hand protection: Unnecessary under normal processing. Other: Unnecessary under normal processing. Respiratory protection: Unnecessary under normal processing. Thermal hazards: At treating hot polymer or molding process, heat-resistant leather gloves should be required.
Environmental exposure controls	Refer to Section 6.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Mixed pellets
Odour	Slight odour
Odour threshold	Not applicable.
pH	Not applicable
Melting point / freezing point	Not determined for mixture. 183 - 192 °C (PA 6/66/12)
Initial boiling point and boiling range	Not tested
Flash point	Not tested
Evaporation rate	Not applicable for solid
Flammability (solid, gas)	As a mixture: non-flammable; In conformity with United Nations Recommendations 4.1 Burning rate test.
Upper/lower flammability. or explosive limits	Not applicable for solid
Vapour pressure	Not applicable for solid
Vapour density	Not applicable for solid
Relative density	Not determined for mixture.
Solubility(ies)	Water solubility: Negligible
Partition coefficient: n-octanol/water	Not applicable
Auto-ignition temperature	Not determined for mixture. In conformity with United Nations Recommendations 4.2 Spontaneous combustion test.
Decomposition temperature	Not tested
Viscosity	Not applicable for solid
Explosive properties	Not explosive
Oxidising properties	Not oxidising

9.2 Other information No additional information available

Section 10: Stability and reactivity

10.1 Reactivity No additional information available.

10.2 Chemical stability Stable under recommended storage and handling conditions.

10.3 Possibility of hazardous reactions	No additional information available.
10.4 Conditions to avoid	Avoid heat, flames, sparks and other sources of ignition and high temperature.
10.5 Incompatible materials	Strong acids, bases and oxidizing agents
10.6 Hazardous decomposition products	Primary CO, CO_2 and small amount of HCN, NH_3

Section 11: Toxicological information

11.1 Information on toxicological effects

Mixture

Acute toxicity	Not classified (Lack of data)
Skin corrosion/irritation	Not classified (Lack of data)
Serious eye damage/irritation	Not classified (Lack of data)
Respiratory or skin sensitisation	Not classified (Lack of data)
Germ cell mutagenicity	Not classified (Lack of data)
Carcinogenicity	Not classified (Lack of data)
Reproductive toxicity	Not classified (Lack of data)
STOT-single exposure	Not classified (Lack of data)
STOT-repeated exposure	Not classified (Lack of data)
Aspiration hazard	Not classified (Lack of data)

Components

ε-Caprolactam

Acute toxicity	LD_{50} = 1475mg/kg (Oral, rats) LC_{50} = 8.16 mg/L, 4hours (Inhalation, rat) LD_{50} > 2000mg/kg (Dermal, rat)
Skin corrosion/irritation	Mild irritating Mild signs of irritation were observed in a skin sensitization test in which 0.4ml of a 75% CAP-solution to guinea pigs (Springborn, 1991).
Serious eye damage/irritation	Moderate irritating - Eyes of rabbits Eyelid closure and eye discharge was observed for irritation by inhalation.
Respiratory or skin sensitisation	Respiratory tract: Not sensitizing in Alarie assay. Skin: Not sensitizing in guinea pig maximization test and Buehler test.
Germ cell mutagenicity	In vivo; Mammalian chromosome aberration test: Negative (OECD 473) Gene mutation test: Ambiguous Chromosome aberration assay: Negative (OECD 475) DNA damage and/or repair): Negative
Carcinogenicity	ACGIH: A5 (Not suspected as a human carcinogen) IARC Monographs: Group 4 (Probably not carcinogenic to humans)
Reproductive toxicity	Caprolactam was not teratogenic or embryotoxic in rats and rabbits when given orally at high doses. (NOAELtera 250 mg/kg bw/day).
STOT-single exposure	Following clinical signs of toxicity were observed for irritation: Irregular respiration, dyspnoea.

STOT-repeated exposure	Only local respiratory irritation was observed on inhalation route of exposure. No systemic effects were observed.
Aspiration hazard	Not available.

Section 12: Ecological information

12.1 Toxicity

Mixture: No information available

Components:

ε-Caprolactam:

Fish(*Oryzias latipes*): LC_{50} >100 mg/L, 96hours
Water flea(*Daphnia magn*) EC_{50} > 1000mg/L, 48hours
Algae: EC_{50} > 1000mg/L, 72hours

12.2 Persistence and degradability

Mixture: No information available.

Components:

ε-Caprolactam:

82% after 14 days (O2 consumption, ECD Guideline 301 C)
Degradation rate in water: $4.7*10^{-2}$ [d^{-1}]
Degradation rate in air: 0.795 [d^{-1}]

12.3 Bioaccumulative potential

Mixture: No information available.

Components:

ε-Caprolactam:

Due to the low log Pow(<3), accumulation in organisms is not expected.

12.4 Mobility in soil

Mixture: No information available.

Components:

ε-Caprolactam:

Due to the logKoc(1.76 at 20 °C), adsorption of the substance to the solid soil phase (e. g. clay) is not expected.

12.5 Other adverse effects

No information available.

Section 13: Disposal considerations

13.1 Waste treatment methods

Disposal must be in accordance with current national and local regulations, which may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Chemical residues generally count as special waste. Packaging may contain residues of the product and should be treated accordingly. Do not dump this material into sewers, on the ground, or into any body of water.

Section 14: Transport information

14.1 UN Number	The mixture is not classified.
14.2 UN proper shipping name	The mixture is not classified.
14.3 Transport hazard class(es)	The mixture is not classified.
14.4 Packing group	The mixture is not classified.
14.5 Environmental hazards	Not classified as environmentally hazardous
14.6 Special precautions for user	No dangerous good in sense of transport regulations.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable

Section 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	Please refer to any other regulations of each country.

Section 16: Other information

Indication of changes	Revisions: 07. April. 2022 Section 1.
Abbreviations and acronyms	GHS: Globally Harmonized System of Classification and Labelling of Chemicals ACGIH: American Conference of Governmental Industrial Hygienists STEL: Short-term Exposure Limit DNEL: Derived No Effect Level PNEC: Predicted No Effect Concentration ATE: Acute Toxicity Estimate STOT: Specific target organ toxicity LD50: Median(50%) lethal dose IARC: International Agency for Research on Cancer EC50: Median Effect Concentration IC50: Half maximal (50%) inhibitory concentration LC50: Median(50%) lethal concentration NOEC: No Observed Effect Concentration OECD: Organization for Economic Cooperation and Development
Full text of hazard class and category codes	Acute toxicity – Oral, Hazard category 4, H302: Harmful if swallowed. Acute toxicity – Inhalation, Hazard category 4, H332: Harmful if inhaled. Skin corrosion/irritation, Hazard category 2, H315: Causes skin irritation. Eye damage/irritation, Hazard category 2, H319: Causes serious eye irritation. Specific target organ toxicity, single exposure, Hazard category 3, H335: May cause respiratory irritation.
Training advice	Read this Safety Data Sheet before handling the substance.

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