

SAFETY DATA SHEET

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

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| 1.1 Product identifier | UBE NYLON 5034MTX1 Polyamide 6/66 CAS No.: 24993-04-2 |
| 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, Nagoya, Aichi 461-0005, Japan (Composite Business Department) Telephone: +81-3-5419-6173 (Nylon Polymer Business Department) / +81-52-961-1373 (Composite Business Department) Telefax: +81-3-5419-6254 (Nylon Polymer Business Department) / +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

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| GHS classification of the substance/mixture | This product is not classified as hazardous under GHS. |
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2.2 Label elements

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| Hazard pictograms | None |
| Signal word | None |
| Hazard statements | None |
| Precautionary statements | |
| Prevention 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 | > 93 | - (Polymer) | 24993-04-2 | not classified |
| ϵ -Caprolactam | < 6 | 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

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| 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



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| 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

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| 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 collect 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

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| 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

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| 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 handling. Additionally, local exhaust ventilation recommended at molding. |



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

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

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| Appearance | White pellets |
| Odour | Slight odour |
| Odour threshold | Not applicable. |
| pH | Not applicable |
| Melting point / freezing point | Not determined for mixture. 180 - 240 °C (PA 6/66) |
| 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. 1.13 - 1.15 (PA6/66) |
| Solubility(ies) | Water solubility: Negligible |
| Partition coefficient: n-octanol/water | Not applicable |
| Auto-ignition temperature | > 400 °C (PA6/66) |
| 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

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| 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. |



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| 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

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| 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

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| 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 | eye 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. (NOAEL _{tera} 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

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| 12.1 Toxicity | | Mixture: No information available Components: <u>ε-Caprolactam:</u> Fish(<i>Oryzias latipes</i>): LC ₅₀ > 100 mg/L, 96hours Water flea(<i>Daphnia magn</i>) EC ₅₀ > 1000mg/L, 48hours Algae: EC ₅₀ > 1000mg/L, 72hours |
| 12.2 Persistence and degradability | and | Mixture: No information available. Components: <u>ε-Caprolactam:</u> 82% after 14 days (O ₂ 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: <u>ε-Caprolactam:</u> Due to the low log Pow(<3), accumulation in organisms is not expected. |
| 12.4 Mobility in soil | | Mixture: No information available. Components: <u>ε-Caprolactam:</u> 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

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| 13.1 Waste methods | treatment | 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. |
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Section 14: Transport information

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| 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 | Not applicable |



the IBC Code

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

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| 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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