

Polypropylene (PP) Resin

SECTION 1. IDENTIFICATION

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| Chemical name | Polypropylene (PP) resin |
| CAS Number | PP – homopolymer (CAS 9003-07-0) PP – ethylene/propylene copolymer (CAS 9010-79-1) |
| Trade Name | Gryfilen |
| Product code | H12-AGF |
| Recommended use | Manufacture of plastic articles by injection molding, thermoforming, extrusion/compression, film, raffia, blow molding, fibers or other conversion processes. |
| Product form | Pellets or Flakes |
| Product use | Industrial applications |
| Area of application | Industrial applications |
| Supplier | GRUPA AZOTY POLYOLEFINS Kuźnicka 1, 72-010 Police, POLAND |
| E-mail address of responsible person | commercial@grupaazoty.com |
| Emergency telephone number | +48 726 120 316 |

SECTION 2. HAZARD IDENTIFICATION

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| Compound classification | Not classified as a dangerous substance according to the Regulation (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL |
| Hazards for human health | Under conditions of proper use, neither acute nor chronic adverse effects on human health can be expected. Dust inhalation may irritate respiratory organs. Melted product may cause serious burns following the contact with the skin or eyes. Vapors formed by processing at higher temperatures may irritate respiratory system and eyes. |

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| | Ingestion of small amounts should not cause any harm. |
| Environmental hazard | No harmful effects in the environment. It is a foreign substance in the environment with very slow degradation. The degradation is mainly caused by UV irradiation. The substance is insoluble in water. |
| Other information | Flammable, but not readily to ignite. Dangerous and irritating substances may be released by combustion. The dust is explosive; air-borne dust concentration above the low explosive limit may cause the risk of explosion. The product can become electrostatically charged. |
| Other hazards | Not specified. |

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

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| Chemical characteristics | Homopolymer polypropylene or ethylene/propylene copolymer in the form of pellets or flakes of waxy appearance |
| Hazardous ingredients in product | None |

SECTION 4. FIRST-AID MEASURES

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| General information | No special precaution measures are needed. In case of health problems or uncertainty seek medical attention and provide information from this material safety data sheet. |
| Inhalation | In case of dust or irritating vapors inhalation move the affected person to fresh air. Seek medical advice if the symptoms persist. |
| Eye contact | If dust irritates eyes, rinse eyes with water or remove the dust as other common physical contamination. Seek medical advice if the symptoms persist. |
| Skin contact | First aid is generally not needed. General hygiene measures should be followed. Don't remove the melted product from the skin. Cool affected area with running cool water and provide medical attention. |
| Ingestion | In case of ingestion of bigger amounts seek specialized medical attention. |

SECTION 5. FIREFIGHTING MEASURES

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| Suitable extinguishing media | <p>Fire – smaller extend: dry extinguishing material, CO₂, sprayed water or foam</p> <p>Fire – intensive: sprayed water, water fog or foam.</p> |
| Extinguishing media which shall not be used for safety reasons | Full water-jet. |
| Special hazard in case of fire | <p>Irritating gases and dense smokes are produce by the combustion. Carbon oxides (CO and CO₂)</p> <p>may develop</p> |
| Special hazard of explosion | <p>During the transport of the product (e.g. filling or emptying of the silos, tanks, hoppers, etc.) dust particles may be formed in the production facilities, which following its accumulation, may ignite or explode in the consequence of electrostatic charge induction. Measures against electrostatic charging are therefore needed (grounding, measures for safe electrostatic discharging) for these facilities.</p> |
| Special protection equipment for firefighters | Full protective clothing and self-contained breathing apparatus. |
| Other information | In case of great fire, protect persons, storage facilities, and all other objects near the fire with the water spray. |

SECTION 6. ACCIDENTAL RELEASE MEASURES

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| Personal precautions | Spilled pellets may cause slipping hazard and the risk of tumbling. Avoid areas with the scattered air-born dust. Do not inhale the dust. Avoid contact of the melted material with the skin or eyes. |
| Environmental precautions | Do not drain spilled material in the canalization system |
| Recommended clean-up methods | <p>Sweep spilled material and place it in appropriate packages (big-bags) or clean containers.</p> <p>According to the level of contamination, the spilled material may be recycled, or disposed in compliance with the relevant waste management legislation</p> |

SECTION 7. HANDLING AND STORAGE

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| Handling | Keep to all fire-fighting measures (do not work with open flame, keep away from all sources of ignition, do not smoke). Prevent dust formation and electrostatic discharging. Prevent accidental releases of the material in the environment during the manipulation. |
| Storage | Storage facilities must fulfill all fire safety requirements for buildings, and all electrical appliances must be compliant with the applicable regulations. Store the product in dry, well-ventilated roofed storehouse. Protect from direct sunlight. Recommended storage temperature: -20°C to + 40°C. The product should be kept at least 1 m from the heat sources. Prevent accidental releases of the material in the environment during the storage. Stacking of pallets is not advised by GRUPA AZOTY POLYOLEFINS |
| Specific use(s) | Not specified |

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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| Exposure limit values | Allowed exposure limit value for the whole concentration of polypropylene dust in the air on the workplace is 5 mg/m ³ |
| Exposure controls | Recommended method for monitoring of polypropylene dust in air on workplace: gravimetry and dustmeter. |
| Occupational exposure controls | Workplace protective measures: <ul style="list-style-type: none"> in case of dust formation use adequate ventilation. installation of the exhaust ventilation equipment over the processing appliances is recommended to exhaust vapors from the melted polypropylene. Individual protective measures: <ul style="list-style-type: none"> The workers should wear personal protection equipment (PPE) for the protection of eyes, Respiratory system, skin, foots and hands, as follows: <ul style="list-style-type: none"> Eyes: - safety goggles |

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| | <ul style="list-style-type: none"> Respiratory system: - ventilation system exhausting dust and vapors is normally required, if not adequate, use respirator. Skin: - protective clothing Legs: - closed shoes, slip-resistant Hand: - protective gloves made of para-aramid/carbon composite fabric, with the heat insulation to min. 270°C and leather sleeves for the forearm protection. For example, five-fingers gloves from KCL, type "Karbo TECT with the leather sleeves" (heat insulation to 350°C) may be used. |
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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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| General information | appearance: solid colour: colourless odour: odourless |
| Important health, safety and environmental information | <ul style="list-style-type: none"> pH-value: not defined boiling point (°C): not determined flash point (°C): 350 - 370 low explosion limit (dust) (g/m³): 32 oxidizing properties: none vapor pressure at 20°C: not defined density (kg/m³): 900 - 910 water solubility at 20°C (g/l): insoluble partitioning coefficient n-octanol/water: not determined viscosity at 20°C (mPa s): not defined at specified temperature vapor density: not defined evaporation speed: not defined |
| Other information | <ul style="list-style-type: none"> melting point (pellets), (°C): 133 - 165 ignition temperature (pellets), (°C): 370 - 390 ignition temperature (settled dust of the polymer), (°C): 350 minimum ignition energy (J): 0,08 combustion heat (MJ/kg): 45 bulk density (pellets), (kg/m³): 470 - 600 |

SECTION 10. STABILITY AND REACTIVITY

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| Conditions to avoid | <p>The substance alone is stable at normal temperatures.</p> <p>Avoid heating over 300°C. Keep away from the sources of ignition and electrostatic discharges.</p> |
| Materials to avoid | Chlorine, fluorine, strong oxidizing agents |

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| Hazardous decomposition products | Decomposition under the higher temperatures in the air atmosphere may produce CO, CO ₂ and H ₂ O. |
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SECTION 11. TOXICOLOGICAL INFORMATION

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| Acute adverse effects on human health | According to current state of expert knowledge this substance is not considered as hazardous for human and has no adverse effects on human health. Acute animal toxicity <ul style="list-style-type: none"> LD50 intraperitoneally – rat > 110 000 mg/kg LD50 intravenous - rat > 99 000 mg/kg. |
| Sensitization | The substance has no known sensitization effects |
| Repeated dose toxicity | not determined |
| CMR effects (carcinogenicity, mutagenicity, reproduction toxicity) | The substance has no known CMR effects. |

SECTION 12. ECOLOGICAL INFORMATION

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| Ecotoxicity | not determined |
| Mobility | not determined |
| Persistence and degradability | This substance has no harmful effects in the environment. It is a foreign substance in the environment with very slow degradation. The degradation is mainly caused by UV irradiation. The substance is insoluble in the water. |
| Bio-accumulative potential | not determined |
| Results of PBT assessment | not determined |
| Other adverse effects | The product is not considered as harmful or dangerous material. |

SECTION 13. DISPOSAL CONSIDERATIONS

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| Recommended methods for the product disposal | In case of accidental spillage of the product (pellets of polymer) avoid product entering the canalization system, as it may cause mechanical blockage of the canalization system. Sweep mechanically and transport for further processing, recycling, or dispose in compliance with the relevant waste management legislation. In all other cases use |
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| | in compliance with the relevant waste management legislation. |
| Recommended methods for the disposal | energetic waste utilization, material waste utilization |
| Relevant waste management legislation | Waste polypropylene is classified according to the Decree HR No. CLXXXV/2012 |

SECTION 14. TRANSPORT INFORMATION

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| Transport classification | The substance is not classified as dangerous according to relevant transport regulations. |
| Specific precaution measures for the transport | not stated |

SECTION 15. REGULATORY INFORMATION

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| Chemical Safety Assessment | not determined. |
| Package labeling | Not needed (the substance is not classified as dangerous according to the Act of National Council of HR No. 98/2001 Coll. and the Directive 67/548/EEC), and Regulation (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL |
| Other applicable legislation, regulations, and directives | <p>European Union: Regulation No. 1907/2006 of the European Parliament and of the Council (EC) concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, Act of the National Council of HR No. XXV /2000 Coll. of Law, on chemical substances and chemical preparations, Act of the National Council of HR No. XLIII/2000 Coll. of Law, on waste and on amendment of certain acts,</p> <p>Act of the National Council of HR No. 44/2000 (XII.27) EüM Coll. of Law, on dangerous materials and preparations on amendment of certain acts.</p> |

SECTION 16. OTHER INFORMATION

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| Access to information | According to the Article 35, Regulation EP and EC NO. 1907/2006, workers and their representatives shall be granted access by their employer to the information provided in the safety data sheet in relation for this |
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preparation that they use or may be exposed to in the course of their work. Changes made in the revision: 1.3; 1.4 2. 13.3. This material safety data sheet was prepared according to the Regulation (EC) No. 1907/2006 of the European Parliament and of the Council. It contains information important for the health and safety of the user and for the protection of the environment. This information does not replace qualitative specifications and should not be considered as a warranty of suitability and applicability of this product for any specific application. The above mentioned information is based on our current level of knowledge and is in compliance with our legislative regulations. The consumer is responsible for the adherence to the relevant regional legislative regulations.