Product Data Sheet

HKR102

Previous grade number
1102K

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Sasol Polymers
Polypropylene Business

MFI 3.5g/10 min

Sasol Polymers PP HKR102
is a medium flow polypropylene homopolymer. It is formulated with a high processing stabilisation package and displays low water carry over during the extrusion process.

Sasol Polymers PP HKQ102
is specially selected for a narrow MFI range (MFI 3.0g/10min)

Injection moulding:
Suitable for injection moulding of high strength technical articles which require superior mechanical properties such as:

- Automotive components
- Industrial components
- Household and domestic articles

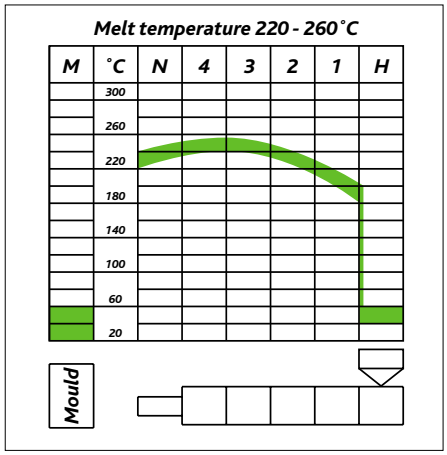
Extrusion:
Sasol Polymers PP HKR102 is particularly suitable for the industrial fabric market where it is utilised to produce, under optimised processing conditions, tape with ideal tensile properties for weaving of industrial fabrics.

Typical applications are:
- Carpet backing
- Sacks and bags
- Flexible intermediate bulk containers (FIBC'S)
- Mining applications

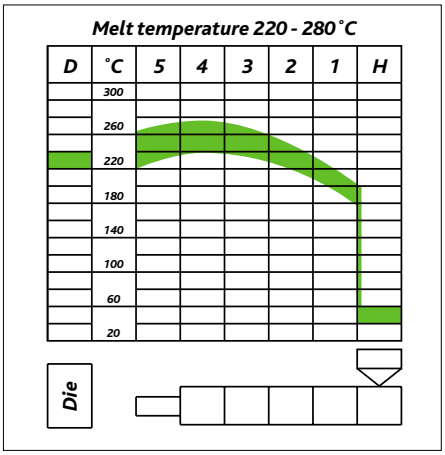
Other applications are:
- Package strapping
- Monofilaments

Typical processing temperatures

Injection moulding



Extrusion



Cooling water (Chill roll) 15-30˚C
Cooling water (Water bath) 15-40˚C
Cooling water (Monofilaments) 60˚C

Sasol Polymers PP HKR102
(previously 1102K)

Typical values at 23˚C for uncoloured products

	Value	Unit	Test method ISO	Test method DIN
Physical properties				
Mass density	0.91	g/cm^3	1183	53479A
Melting point DSC	163	˚C	3146	–
Melt flow index MFI 230/2.16	3.5	g/10min	1133	53735
Mechanical properties				
Tensile strength at yield (50mm/min)	36	MPa	527	53455
Elongation at yield (50mm/min)	9.5	%	527	53455
Ultimate elongation (50mm/min)	>50	%	527	53455
Modulus of elasticity in tension (1mm/min)	1550	MPa	527	53457
Izod notched impact resistance 23˚C	4.0	kJ/m^2	180/1A	–
Charpy impact resistance 23˚C	190	kJ/m^2	179/1eU	53453
Charpy impact resistance 0˚C	110	kJ/m^2	179/1eU	53453
Charpy impact resistance -20˚C	16	kJ/m^2	179/1eU	53453
Ball indentation hardness H 358/30	72	MPa	2039-1	–
Shrinkage	1.5	%	*	*
Thermal properties				
Heat distortion temperature HDT/A (1.8 MPa)	55	˚C	75	53461
Heat distortion temperature HDT/B (0.45 MPa)	85	˚C	75	53461
Vicat softening point A/120 10N	155	˚C	306	–

* Sasol Polymers method

FDA COMPLIANCE OF SASOL POLYMERS PP HKR102 (1102K)

Sasol Polymers PP HKR102 (1102K) has FDA compliance status with the here below mentioned regulations:

- Code of Federal regulations 177.1520

Our statement is based on the following arguments:

- The basic polymer is listed in paragraph (a) of 177.1520 as safe for use in contact with food.
- The optional adjuvant substances incorporated into the basic polymer comply with the applicable regulations in parts 170 through to 189 of the ‘’Code of Federal Regulations’’.

Our certificate does not include:

- Modifications of the product by addition of any other product to it.
- Any prejudicial modification of the product resulting from inadequate processing of the product.
- Any inadequate use and/or storage of the material and finished articles.

Dr Brian Sole
Development & Optimisation Group

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MATERIAL SAFETY DATA SHEET.

1. PRODUCT AND COMPANY IDENTIFICATION

Trade name:	Sasol Polymers Polypropylene
Chemical family	Polypropylene Homopolymers or Copolymers
Chemical name:	Polypropylene
Chemical abstract no:	9003-07-0
Synonyms:	Polypropylene

2. COMPOSITION

Propylene/Ethylene Copolymer >95%

3. HAZARDS IDENTIFICATION

Main Hazard:	Toxic fumes in fire situations (CO, CO_2, Acrolein, Formaldehyde)
Flammability:	Flash point - not applicable. Ignition temperature - above 360^{o}C
Chemical Hazard:	Reacts violently with chlorine and potassium permanganate
Biological Hazard:	No specific data available, however repeated exposures not anticipated to cause significant adverse effects.
Reproductive Hazard:	Limited data available shows no effect on reproduction in laboratory animals.
Health effects - eyes:	Solid or dust may cause irritation or corneal injury due to mechanical action.
Health effects - skin:	Essentially non-irritating. Molten material may burn skin.
Health effects - ingestion:	Single dose oral toxicity considered to be low. Small amounts swallowed incidental to normal handling not likely to cause injury.
Health effects - inhalation:	Dust may cause irritation to upper respiratory tract. At room temperatures vapours are minimal. Vapours from heated material may cause irritation.
Carcinogenicity:	No specific data available, although repeated exposures are not anticipated to cause significant adverse effects. This material is not considered a carcinogen by Osha, IARC or NTP.
Mutagenicity:	No data found to indicate a mutagenic effect.
Neorotoxicity:	No data available.

4. FIRST AID MEASURES

Product in eye:	Flush eyes with plenty of water. Get medical attention if irritation persists.
Product on skin:	If molten material comes in contact with the skin, cool under ice water or running water. Treat as thermal burn.
Product ingested:	First aid is not usually required. If a large amount is swallowed, get medical attention.
Product inhaled:	In case of adverse exposure to vapours/fumes formed at elevated temperatures, remove victim from exposure. If breathing has stopped administer artificial respiration; call for prompt medical assistance.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Water, Carbon Dioxide, Dry Chemical
Special hazards:	Emits toxic fumes (carbon monoxide, carbon dioxide, acrolein, and formaldehyde) under fire conditions.

6. ACCIDENT RELEASE MEASURES

Personal precautions:	Clear non-emergency personnel from area, pellets may present a slipping hazard.
Environmental precautions:	Contain material to prevent contamination of soil, surface water or ground water.
Small spills:	Sweep or vacuum spills. Collect material in suitable container for recycle or disposal.
Large spills:	As for small spills.

7. HANDLING AND STORAGE

Suitable material:	No special requirements.
Handling/storage precautions:	Store away from incompatible material. Store in a dry place, below 50^{o}C. Material will accumulate static charges, which may cause electrical spark. Use proper grounding procedures.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits:	ACG[1]H TLV-TWA: 10mg/m3 (total[1]/nuisance dust)
Engineering control measures:	Good general ventilation should be sufficient. Local exhaust ventilation may be necessary for some operations.
Personal protection-respiratory:	A respirator should be used to protect against vapours while processing.
Personal protection - hand:	Wear thermal resistance gloves when working with hot or molten polymer.

Personal protection - eye:	None required. Use of eye protection is good industrial practice.
Personal protection - skin:	None required. Use of protective clothing is good industrial practice.
Other protection:	None.

9. PHYSICAL SAFETY DATA SHEET

Appearance:	Translucent to white solid pellets.
Odour:	Very slight waxy odour.
pH:	Not determined.
Boiling point:	Not determined.
Melting point:	130 - 165^{O}C.
Flash point:	Not determined (>350^{O}C).
Flammability:	Not classified.
Autoflammability:	Autoignition temperature >390^{0}C
Explosive properties:	High voltage static electricity build-up and discharge must be avoided when significant quantities of dust are present.
Oxidizing properties:	None.
Vapour pressure:	Negligible.
Density:	0,88 to 0,92
Solubility - water:	Negligible
Solubility - solvent:	Negligible (To dissolve requires chlorinated solvents at elevated temperature).
Solubility - coefficient:	No data available.
Neurotoxicity:	No data available.

10. STABILITY AND REACTIVITY

Conditions to avoid:	Stable - None identified.
Incompatible materials:	Avoid chlorine, fluorine and other strong oxidisers (eg. Potassium permanganate)
Hazardous decomposition products:	Major decomposition products are low molecular weight oligomers (C6-C18) of propylene, aldehydes, acrolein, ketones and other organic vapours.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity: Skin and eye contact:	May be harmful by inhalation, ingestion. To the best of our knowledge the toxicological properties

Chronic toxicity:	have not been thoroughly investigated. Our hazard evaluation is based on information from similar products, the ingredients and technical literature.
Carcinogenicity:	No specific data available. This material is not considered a carcinogen by Osha, IARC or NTP.
Mutagenicity:	No data found to indicate a mutagenic effect.
Reproductive hazards:	Limited data available shows no effect on reproduction.

12. **ECOLOGICAL INFORMATION**

Aquatic toxicity - fish:	Data not yet available - pellets may mechanically cause adverse effects if ingested by aquatic life.
Aquatic toxicity – daphnia	Data not yet available
Aquatic toxicity – algae	Data not yet available
Biodegradability:	Expected to be inert. No appreciable biodegradation is expected.
Bio-accumulation:	Insufficient data for scoring. No bioconcentration expected due to high molecular weight (mw >1000)
Mobility:	In terrestrial environment, material expected to remain in the soil. In the aquatic environment, material expected to float.

13. **DISPOSAL CONSIDERATIONS**

Disposal methods:	All disposals must be in compliance with local laws and regulations.
Disposal of packaging:	The preferred option is recycling. Incineration or burials in approved landfill are acceptable.

14. **TRANSPORT INFORMATION**

Not hazardous for transportation purposes.

UN No:	None
Substance Identity No:	CAS 9003-07-0
ADR/RID Class:	Not regulated
IMDG - Shipping name	Not regulated
IATA - Shipping name	Not regulated

15. **REGULATORY INFORMATION**

EEC Hazard Classification (EINECS/ELINCS): In compliance

16. **OTHER INFORMATION**

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. Sasol Polymers Ltd. shall not be held liable for any damage resulting from handling or contact with this product.

Prepared by:-

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