

# INEOS

## Olefins & Polymers Europe

*Your partner for*

**RIGID PACKAGING  
SOLUTIONS**

**Clear**, clean  
and tough

[www.ineos.com](http://www.ineos.com)

## Polypropylene grade range

INEOS O&P Europe operates four proprietary or non-proprietary gas and bulk production technologies (INNOVENE™ PP and others) to produce a broad pallet of polypropylene grades for the extrusion, blow moulding and injection moulding markets.

- Homopolymer grades for optimum stiffness, excellent hot fill characteristics and the best transparency from the latest generation clarifier.

### Homopolymer injection moulding range (low & medium MFR)

Grade	MFR <i>230°C/2.16kg g/10min</i>	Flexural modulus <i>23°C MPa</i>	Izod impact <i>Notched, 23°C kJ/m<sup>2</sup></i>	HDT <i>0.45MPa °C</i>
	ISO 1133	ISO 178	ISO 180/1A	ISO 75/B
100-GA03	3	1450	4	93
150-GA03	3	1450	4	92
100-GA04	4	1400	3	86
100-GB06	6	1450	3.5	86
101-CA06	6	1750	3	119
100-GA09	9	1500	3.5	104
101-SA09	9	1450	3.5	103
100-AA12	12	1450	3	90
100-GA12	12	1400	3.7	90



- Random copolymer from low to very high flow with very good to exceptional clarity and gloss obtained with the latest generation clarifier, all with very good stiffness and room or fridge temperature impact resistance.
- Impact copolymer grades with excellent stiffness, cold temperature impact strength and chemical resistance.

Nucleated	Antistatic	Application
no	no	General purpose grade with very good rigidity and high heat resistance for injection moulding
no	no	General purpose grade with very good rigidity and high heat resistance for injection moulding
no	no	General purpose grade with very good rigidity and high heat resistance for injection moulding of rigid packaging and caps & closures
no	no	General purpose grade for injection moulding of technical mouldings and caps & closures
yes	yes	For injection stretch blow moulding
no	no	General purpose grade for caps & closures, containers, straws and flexible packaging
no	no	Slip additive containing grade for caps & closures with right lubrication level to meet the opening torque requirements for screw caps
no	yes	For injection moulding of thin wall containers, media packaging, houseware, plungers for empty disposable 3-part syringes, caps & closures
no	no	General purpose grade intended for containers, caps & closures, garden furniture, houseware



## Homopolymer injection moulding range (high MFR)

Grade	MFR 230°C/2.16kg g/10min	Flexural modulus 23°C MPa	Izod impact Notched, 23°C kJ/m <sup>2</sup>	HDT 0.45MPa °C
	ISO 1133	ISO 178	ISO 180/1A	ISO 75/B
ELTEX® P HCW280	20	2200	2.7	130
100-GB25	25	1200	3.2	102
100-CB25	25	1500	3.9	110
100-HR25	25	1800	3.3	126
194-NA25	25	1750	3	116
100-GA35	35	1350	3.3	78
100-CA50	50	1550	3	115
100-CC60	☀ 60	1800	3	118

☀ Grade clarified with the latest generation clarifying agent



Nucleated	Antistatic	Application
yes	yes	Grade with high isotacticity and remarkably high stiffness for applications typical of Styrenic polymers: household goods, food packaging, appliances
no	no	General purpose grade for high speed moulding in multi-cavity tooling applications like thin wall parts and garden furniture
yes	yes	For high speed injection moulding of rigid packaging, thin wall containers, technical parts, houseware, media packaging and garden furniture
yes	yes	For high speed injection moulding of thin-walled injection moulded articles, caps & closures, technical and electronic parts
yes	yes	Clarified grade for injection of consumer products, transparent containers and medical syringes
no	no	General purpose grade for thin wall injection moulding, masterbatch and compound applications
yes	yes	Grade designed for high speed injection moulding of thin walled containers for dairy and fresh food, food trays, houseware articles and disposables
yes	yes	Clarified grade with excellent rigidity and transparency for thin wall containers, household goods and media packaging



## Homopolymer blow moulding & extrusion range

Grade	MFR <i>230°C/2.16kg g/10min</i>	Flexural modulus <i>23°C MPa</i>	Izod impact <i>Notched, 23°C kJ/m<sup>2</sup></i>	HDT <i>0.45MPa °C</i>
	ISO 1133	ISO 178	ISO 180/1A	ISO 75/B
100-GA01	0.9	1550	4.5	98
100-GA02	2	1450	4	95
150-GA02	2	1450	4	93
151-GA02	2	1300	4	92
100-GA03	3	1450	4	93
100-NB03	3	1800	3	126
102-CA03	3	1800	3	126
150-GA03	3	1450	4	92
100-GA04	4	1400	3	86
100-GB06	6	1450	3.5	86
101-CA06	6	1750	3	119



Nucleated	Antistatic	Application
no	no	General purpose grade with very good rigidity and high heat resistance used for sheets, blow moulding and strapping applications
no	no	Very good rigidity and high heat resistance grade used in thermoforming of food containers, yoghurt cups and very thin walled technical mouldings
no	no	General purpose grade with very good rigidity and heat resistance used in thermoforming, sheets, strapping and small rigid blow moulding applications
no	no	For sheet extrusion applications requiring a good melt strength and processability
no	no	General purpose grade with very good rigidity and high heat resistance for extrusion and thermoforming applications
yes	no	For sheet extrusion and thermoforming applications like beer cups, transparent trays for biscuits, fruits and vegetables, food containers
yes	low level	For sheet extrusion and thermoforming applications like transparent trays for biscuits, fruits and vegetables, food containers
no	no	General purpose grade with very good rigidity and high heat resistance used in thermoforming, sheets and strapping
no	no	General purpose grade with very good rigidity and high heat resistance intended for extrusion and thermoforming applications
no	no	General purpose grade for extrusion applications like thin sheet extrusion, thermoforming
yes	yes	For applications like very transparent and rigid sheets for thermoformed food and non food containers



## Random copolymer injection moulding range (all clarified)

Grade	MFR 230°C/2.16kg g/10min	Flexural modulus 23°C MPa	Izod impact Notched, 23°C kJ/m <sup>2</sup>
	ISO 1133	ISO 178	ISO 180/1A
240-CA12	13	850	8
200-CA13	13	1100	6
ELTEX® P 203-0R25	☀ 25	1100	5
205-CA25	☀ 25	1100	5
240-HP25 (*)	☀ 25	1200	6
200-CA25	25	1100	5
240-HP40 (*)	☀ 40	1100	5.5
205-CA40	☀ 40	1100	5
200-CA40	40	1100	5
200-CA70	70	1100	4
240-HP80 (*)	☀ 80	1100	5

☀ **Grade clarified with the latest generation clarifying agent**

(\*) Available also in guaranteed organoleptic version

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Antistatic	Application
yes	Very high clarity, high gloss grade with high impact strength down to 0°C for houseware, caps & closures, lids & pails, appliances
yes	High clarity grade for houseware, injection stretch blow moulded items, caps & closures, lids & pails, appliances
low	Excellent and guaranteed organoleptic properties, high clarity grade for houseware, caps & closures and containers for very sensitive foods
yes	Very high clarity grade for houseware, candy boxes, caps & closures, lids & pails, appliances
yes	High rigidity/impact strength balance, good clarity grade for caps & closures, containers, houseware, injection stretch blow moulded items
yes	High clarity grade for houseware, candy boxes, caps & closures, lids & pails, appliances
yes	High flow, high rigidity/impact strength balance, high clarity grade for houseware, food containers, injection stretch blow moulded items
yes	Very high clarity, high flow grade for caps & closures, houseware, food containers
yes	High clarity, high flow grade for caps & closures, houseware, food containers
yes	Very high flow, high clarity grade for houseware, food containers
yes	Very high flow, high clarity grade with high stiffness/impact balance for houseware, food containers



## Impact copolymer injection moulding range

Grade	MFR 230°C/2.16kg g/10min	Flexural modulus 23°C MPa	Izod impact Notched, -20°C kJ/m <sup>2</sup>
	ISO 1133	ISO 178	ISO 180/1A
ELTEX® TUB 400-IM01	0.8	1500	8 (*)
400-GA03	2.5	1250	7
400-GA05	5	1200	6.5
401-NA06	6	1200	3
300-CA06	6	1500	5
RIGIDEX® P CAP906S	6.5	1500	4
400-CB08	8	1200	6
402-CB12	12	1350	6
540-CA13	13	1150	9.5
500-NA20	20	1250	6
500-GA20	20	1000	6
400-CA25	25	1550	4.5
RIGIDEX® P 451-HP40	38	1350	4.5
401-CB50	50	1300	4.2
401-CA55	55	1100	4
RIGIDEX® P 450-HP60	60	1400	4.2
RIGIDEX® P 450-HP90	90	1350	4.2

(\*) Notched charpy



Nucleated	Antistatic	Application
yes	no	For fittings and manholes, offering excellent dimensional stability and good long term stability
no	no	For thick wall products such as pallets, crates and large containers
no	no	For appliances, luggage, technical parts and returnable transport packaging
yes	no	For toys, large pails and crates
yes	yes	For toys, houseware, pails and appliances, offering high stiffness
yes	yes	For bi-component screw-caps for carbonated drinks
yes	yes	For returnable transport packaging, offering superior balance of stiffness and impact resistance
yes	yes	For returnable transport packaging, offering superior balance of stiffness and impact resistance
yes	yes	For crates & boxes, luggage as well for the production of compounds, offering very high impact resistance
yes	no	For luggage, large containers and crates, offering very good cold temperature impact resistance
no	no	For toys, appliances and containers, offering very good cold impact temperature
yes	yes	For returnable packaging, pails and houseware, offering high stiffness and low warpage
yes	yes	For ultra-fast moulding of large food and industrial containers
yes	yes	General purpose grade for thin wall containers and technical parts
yes	yes	General purpose grade for thin wall containers and technical parts
yes	yes	Very high flow grade offering a unique combination of high stiffness, good impact resistance and very low warpage
yes	yes	Very high flow grade offering a unique combination of high stiffness, good impact resistance and very low warpage



## Random copolymer blow moulding & extrusion range

Grade	MFR 230°C/2.16kg g/10min	Flexural modulus 23°C MPa	Izod impact Notched, 23°C kJ/m <sup>2</sup>
	ISO 1133	ISO 178	ISO 180/1A
240-NA02	1.5	900	20
200-CA02	1.7	1000	10
203-NA02	1.9	1100	7
200-GA02	2	950	10
200-NA02	2	1000	10
200-GA04	3.8	950	8

## Impact copolymer blow moulding & extrusion range

Grade	MFR 230°C/2.16kg g/10min	Flexural modulus 23°C MPa	Izod impact Notched, -20°C kJ/m <sup>2</sup>
	ISO 1133	ISO 178	ISO 180/1A
ELTEX® TUB 433-NA00	0.3	1500	7 (*)
ELTEX® TUB 350-HM00	0.3	1850	6 (*)
ELTEX® TUB 400-IM01	0.8	1500	8 (*)
ELTEX® P RF110	0.8	1300	5
401-NA01	1.2	1300	7.5
400-NA01	1.5	1300	7.5
500-NA01	1.5	1300	10
400-GA03	2.5	1250	7

(\*) Notched Charpy



## RIGID PACKAGING SOLUTIONS

Clarified	Antistatic	Application
yes	no	Excellent clarity and impact resistance grade for small to medium size bottles & containers for household chemicals & personal care, cosmetics
yes	yes	High clarity grade for blow moulded cosmetics, household chemicals, detergent containers, sheet, thermoformed packaging
yes	no	Grade combining high heat resistance and very good clarity, ideal for the production of hot filled mono- & multilayer barrier bottles and containers
no	no	General purpose grade for small bottle blow moulding, for stationery application sheet extrusion and thermoformed containers
yes	no	Excellent clarity grade for small to medium size bottle blow moulding, for transparent sheets and clear thermoformed containers
no	no	General purpose grade for stationery application sheet extrusion and thermoformed containers

Nucleated	Antistatic	Application
yes	no	For blow moulding of medium to large bottles & containers, offering high stiffness, very good cold impact and excellent melt strength
yes	no	For blow moulding of medium to large bottles & containers, offering very high stiffness, very good cold impact and excellent melt strength
yes	no	For fittings and manholes, offering excellent dimensional and long term thermal stability
no	no	Good cold impact resistance and stiffness, for blow moulding of small to medium size bottles and containers
yes	no	For small to medium size bottles and containers, synthetic card-board, offering excellent cold impact resistance and good stiffness
yes	no	For small to medium size bottles and containers, synthetic card-board, offering excellent cold impact resistance and good stiffness
yes	no	For corrugated pipes, conduit pipes and twin-wall sheets offering very high impact with long term stability
no	no	For sheet extrusion and blow moulding with good impact strength



INEOS is one of the world's largest chemical companies. Founded in 1998, the company employs 15,000 people and has turnover of around 47 billion US Dollars.

INEOS Olefins & Polymers Europe is a leading producer of olefins and polyolefins.

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**INEOS Olefins & Polymers Europe** offers a full range of highly valued polyolefin solutions for selected market applications such as food and industrial packaging, pipe and automotive through dedicated sales, marketing and technical teams.

Building on our leading production technologies, strong product development capability and willingness to create a valued and close relationship with customers and end-users, INEOS Olefins & Polymers Europe is committed to serving the current and future needs of the extrusion blow moulding and injection moulding markets where we offer:

- ❑ High density polyethylene grades for the production of small and large containers and bottles, caps and closures, crates, pails, dustbins and many others.
- ❑ Homopolymer, random copolymer and impact copolymer polypropylene grades for the production of high clarity, high stiffness and/or hot fill containers and bottles, high stiffness, high clarity and high impact resistance at cold temperatures moulded products.
- ❑ INEOS Olefins & Polymers Europe has also developed Low density polyethylene grades suitable for the injection moulding process, for the production of colour concentrates and additive materbatches or very specific applications such as medical and pharmaceutical.