



Polyklene R **CLEANING COMPOUND** **INJECTION MOULDING AND EXTRUSION EQUIPMENT**

The multitude of colour and material changes, and the ever shorter production runs caused by Just-In-Time production require an effective and efficient cleaning compound.

POLYKLENE R cleans cylinders, screws, extruders and dies quickly and efficiently. Residues of previous production runs; black specks, caused by burnt on resin; and pigments that have the tendency to adhere to the screw and cylinder wall, will all be removed by POLYKLENE R.

The unique formulation of POLYKLENE R ensures that it even reaches into the dead angles where burnt material will settle. Through regular maintenance with POLYKLENE R, you will be able to clean quicker, reduce downtime, minimise start-up times and reduce the amount of scrap produced.

Userfriendly

- POLYKLENE R is a resin that is as easily processable as plastics.
- POLYKLENE R is composed of materials that have the GRAS classification (FDA norm for generally recognised as safe)
- POLYKLENE R is odourless, also when processed. No special precautions are required. The residue is a plastic with inert minerals, which can be processed as such.
- POLYKLENE R is available in 25kg quantities, in recyclable carton boxes with a plastic liner.

Cost Savings

- | | |
|----------------------------|--|
| • Less Downtime | POLYKLENE R works effective, and reduces the need for pulling the screw |
| • Shorter Start Up Time | POLYKLENE R removes black specks effectively, making the start-up phase for the next run shorter |
| • Reduced Loss Of Material | Through shorter start-up periods, and less scrap |
| • Less Cleaning Compound | POLYKLENE R needs only 1½ to 2 times the cylinder contents for an effective cleaning |
| • Concentrated | POLYKLENE R is available as a ready-to-use formulation, and also as a concentrate |



Polyklene R **CLEANING COMPOUND** **INJECTION MOULDING**

Instructions For Injection Moulding Equipment

1. Empty the machine of the production resin; raise nozzle and front zone temperature about 10°C to 15°C above production temperature. (Do not exceed the safe processing temperature of the production resin). Remove the hopper or feed system and make sure all production material is cleaned out of the feed area.
2. Flush the machine by running clean natural HDPE or a polymer of a higher viscosity than the material to be removed (quantity 1 – 4 times the net cylinder content) to push most of the residual production resin out of the machine. Run the machine empty again (optional).
3. Load the machine with a full system volume of POLYKLENE R, feeding it directly into the throat. Fill the system until POLYKLENE R extrudes from the nozzle; keep the throat opening filled with POLYKLENE R.
4. Soak the system with the screw stopped for 10 to 20 minutes. Keep the throat full, reciprocating screws forward. POLYKLENE R will 'drool' from the nozzle (the gas pressures of the chemical reaction are pushing it out). If the drooling stops, jog the screw to restore drooling, top off the throat with POLYKLENE R, and keep reciprocating screws forward. In case of a shut-off nozzle: open nozzle occasionally to prevent excessive pressure in cylinder.
5. Purge the system empty of the POLYKLENE R material. If many black specks are seen as the last of the POLYKLENE R empties from the machine, another cleaning is needed. Raise the nozzle and front temperature another 10°C and repeat steps 3 and 4.
6. After setting the required temperature profile run the new production material through the system until all traces of POLYKLENE R are removed and start up with normal production.

Quantities Needed For Injection Moulding (RTU Grade)

The POLYKLENE R quantity needed to perform regular cleaning (e.g. once a week), rated by machine size (clamping force):

Machine Size	POLYKLENE R Quantity	Time
50 ton	200 gr	20 min
200 ton	800 gr	25 min
400 ton	1800 gr	30 min
700 ton	3800 gr	45 min
1000 ton	7500 gr	50 min
1500 ton	10000 gr	50 min

NOTE: POLYKLENE RTU is a 25% active material. Users who are blending POLYKLENE R Concentrate with their own polymer should reduce the quantity pro-rata.

Processing Temperature

	POLYKLENE R RTU	POLYKLENE R Concentrate
Temp. processing range:	180°C - 320°C	200°C - 400°C

POLYKLENE R will foam slightly, so it reaches into the dead corners of the extruder or cylinder. Burnt residues are released from screw and cylinder wall through a chemical reaction, and extruded by the purging properties of POLYKLENE R. POLYKLENE R also has a polishing (NOT abrasive) effect, which leaves the surface inside the cylinder clean and smooth.

Regular preventive maintenance controls the building up of burnt residues, and makes every cleaning more effective.

Cost Comparison

1	A	Current cleaning compound	.....
	B	Used quantity	.....
	C	Price/Kg	.....
		Total material costs: B X C	.....
	D	Cleaning time (hours)	.....
	E	Cost/hour	.....
		Total costs cleaning: D X E	.....
		TOTAL COSTS CLEANING:	£.....
2	A	POLYKLENE R grade:	.....
	B	Used quantity:	.....
	C	Price/Kg	.....
		Total material costs (B X C):	.....
	D	Cleaning time (hour):	.....
	E	Cost/hour	.....
		Total costs cleaning D X E:	.....
		TOTAL COSTS CLEANING	£.....
		Difference 1 and 2: £..... = .....%	.....

Technical Data



Polyklene R CLEANING COMPOUND EXTRUSION EQUIPMENT

Instructions For Extrusion Equipment

1. Empty the extruder of the production resin. Remove screen packs for the purge if possible. **DO NOT REMOVE THE DIE.** Raise temperature of the front zone and the die about 35°C above production temperature (but do not exceed the safe processing temperature of the production resin). Make sure any venting – and/or vacuumopenings are closed.
2. Flush the machine by running clean natural HDPE or carrier polymer (quantity: 1-4 time system volume) to push most of the residual production resin out of the machine (optional)
3. Load the machine with POLYKLENE R, feeding it directly into the throat. Fill the system until POLYKLENE R mixture is seen emerging uniformly from the die.
4. Soak the system with the screw turning at minimum RPM for 10 to 15 minutes. Keep the throat full of POLYKLENE R.
5. Purge the system empty. If the POLYKLENE R still contains many black specks, another cleaning is needed. Raise nozzle and front zone temperature another 10°C and repeat steps 3 and 4.
6. After setting the desired temperature profile run the new production material through the system until all traces of POLYKLENE R are removed and start up with normal production.

Quantities Needed For Cleaning (RTU Grade)

Single Screw Extruder, L/D 30

Screw Diameter In mm	Quantity of POLYKLENE R (kg)
40	0,80
50	1,40
60	2,40
70	4,00
80	6,00
90	8,00
100	11,20
120	19,20
150	38,00,
200	90,00

Twin Screw Extruder, L/D 40

Screw Diameter In mm	Quantity of POLYKLENE R (kg)
30	0,80
40	2,00
50	3,80
60	6,60
70	10,80
80	15,60
90	23,60
100	31,20
120	54,00
130	68,80
150	102,80

NOTE: POLYKLENE RTU is a 25% active material. Users who are blending POLYKLENE R Concentrate with their own polymer should reduce the quantity pro-rata.

* This calculation is based upon material needed in regular use of POLYKLENE R (1,5 the Cylinder content). First time use of the material or extensive contamination normally requires larger amounts of material.

** In extrusion equipment the die represents a variable volume of material. Therefore the above indicated amounts must be multiplied with the following factors for different types of extrusion processes

Process	Multiplication Factor
Compounding	1.0 – 1.2
Small Sheet/Film Extruder	2.0
Large Sheet/Film Extruder	1.5 – 1.7

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Cost Comparison

1	A	Current cleaning compound
	B	Used quantity
	C	Price/Kg
		Total material costs: B X C
	D	Cleaning time (hours)	.....
	E	Cost/hour	.....
		Total costs cleaning: D X E	.....
		TOTAL COSTS CLEANING:	£.....
2	A	POLYKLENE R grade:	.....
	B	Used quantity:	.....
	C	Price/Kg	.....
		Total material costs (B X C):	.....
	D	Cleaning time (hour):	.....
	E	Cost/hour	.....
		Total costs cleaning D X E:	.....
		TOTAL COSTS CLEANING	£.....
		Difference 1 and 2: £.....=.....%	.....

STORAGE

The product may be stored at normal ambient temperatures and has a shelf life of not less than 24 months with correct storage.

HEALTH AND SAFETY

Health and Safety sheet available separately.

TECHNICAL SERVICE

Ambersil provides a technical support service and maintains a constant programme of research and development. We are able to assist customers by specific product development to meet particular requirements.

MISREPRESENTATION ACT 1967

TRADE DESCRIPTIONS ACT 1968

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