



Member of ORLEN Unipetrol Group

# EN PLASTIC ADDITIVE & COLOR CONCENTRATES

M-Color®, Makrostab®, Makroflam®  
Makroplus®, Makrocorr®, Makropore®  
Makroclean®, Makrobrite®, Thermobreak®

# EN PLASTIC ADDITIVE & COLOR CONCENTRATES



# ADDITIVE CONCENTRATES

## PRODUCT RANGE

M-COLOR®	Color masterbatches based on mixtures of organic and inorganic pigments or dyes
MAKROSTAB®	Masterbatches for: <ul style="list-style-type: none"><li>▶ UV stabilizers</li><li>▶ Thermo stabilizers (or their combination)</li></ul>
MAKROFLAM®	Composite materials exhibiting <b>reduced flammability</b> . Halogen-free (HFFR) grades are also available
MAKROPLUS®	Additive masterbatches according to type: <ul style="list-style-type: none"><li>▶ A – antistatic</li><li>▶ CC – electro conductive, antistatic or dissipative plastics</li><li>▶ F – polyolefins containing inorganic fillers</li><li>▶ L – lubricants</li><li>▶ N – nucleating agents</li><li>▶ RA – separation and lubrication additives</li><li>▶ ANTISLIP – masterbatch for enhancing film surface roughness</li></ul>
MAKROSLIP®	Slip agent masterbatch
MAKROCORR®	Contact and VCI <b>corrosion inhibitor</b> masterbatches
MAKROPORE®	Chemical and physical <b>blowing agent</b> concentrate
MAKROCLEAN®	Pelletized compositions for <b>extruder cleaning</b>
MAKROBRITE	Optical <b>brightener</b> masterbatch
THERMOBREAK®	<b>Extruder protection</b> during production breaks

# M-COLOR®

## M-COLOR®

- ▶ Color masterbatches
- ▶ Based on mixtures of organic and inorganic pigments or dyes dispersed in a suitable carrier
- ▶ Color matching is done according to RAL, PANTONE and NCS color standards or according to individual customer requirements (including color matching according to the supplied sample)
- ▶ Various special effects can be applied (e.g. transparent colors, black and glitter highlights, metallic effects, fluorescent colors and concentrates for laser marking)
- ▶ Wide range of carrier resins (PE, PP, PS, polyamides, polycarbonates, PET, PBT, TPU, elastomers)
- ▶ Production of combi-products containing UV-stabilisers, nucleating agents, pigments for laser marking etc.

## APPLICATIONS

- ▶ Fibres and non-wovens
- ▶ Tapes and raffia
- ▶ Automotive
- ▶ Packaging (including food packaging)
- ▶ Medical
- ▶ Extruded sheets, profiles and pipes
- ▶ Building materials, industrial, furniture
- ▶ Appliances
- ▶ Toys



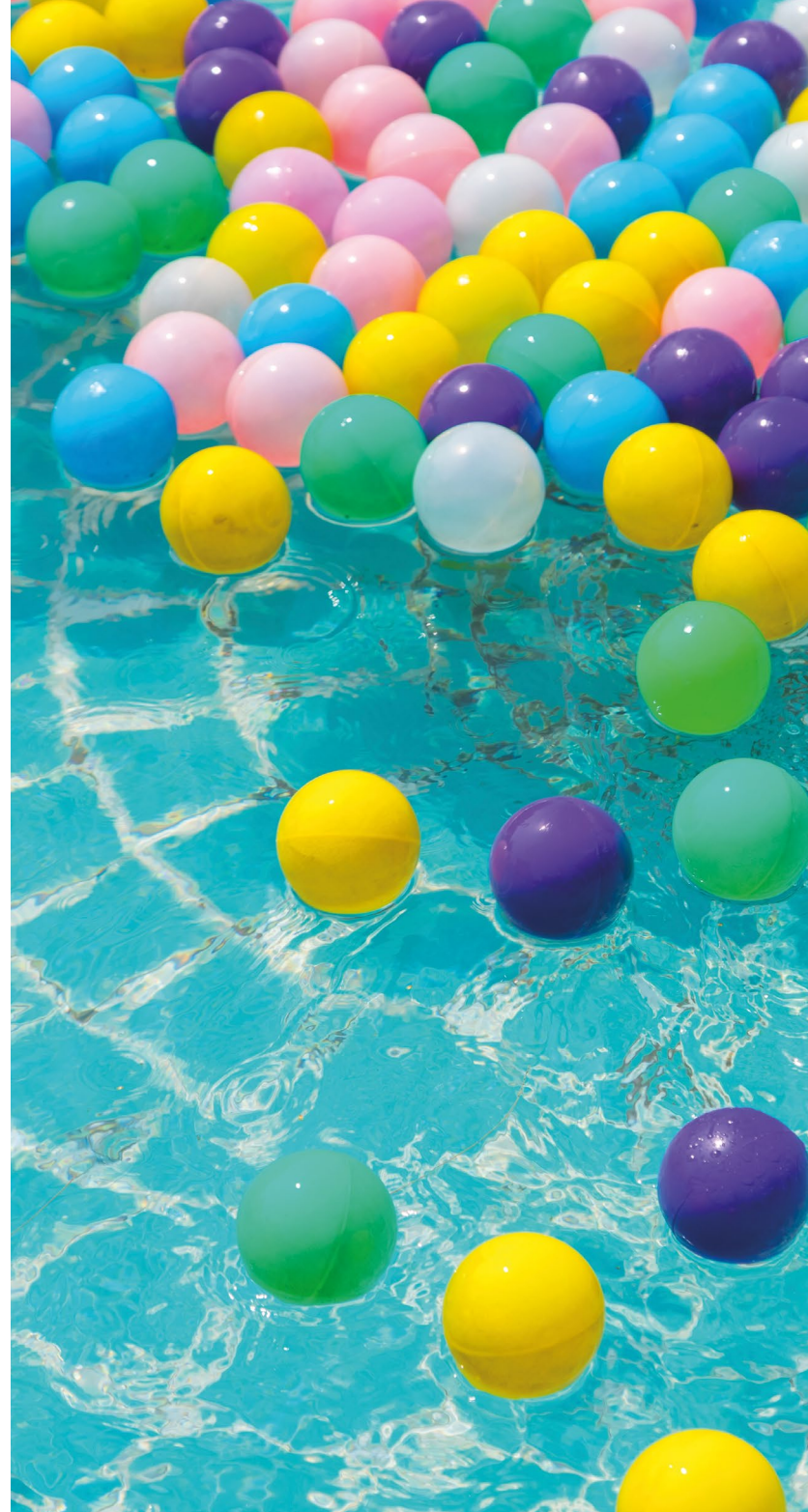




# MAKROFLAM®

## MAKROFLAM®

- Flame retardant masterbatches (MAKROFLAM FR) and flame retardant compounds (MAKROFLAM) are two families of materials with reduced flame propagation, dripping or smoke generation achieved by adding halogen-free or halogenated flame retardants
- Masterbatches MAKROFLAM FR are suitable for use with many types of polymers to meet FR standards, such as glow wire test, vertical flame test according to UL94, and many other standards for electrotechnical, building or engineering applications



# MAKROSTAB®

## MAKROSTAB®

- Stabilizer masterbatches (UV and THERMO) are used to increase the resistance of plastics against UV and thermooxidative degradation

## MAKROSTAB THERMO

- Masterbatches containing antioxidants which improve processing, long-term heat or other special (e.g. nonextractable) thermooxidative stability of the polymer

## MAKROSTAB UV

- Stabilizer masterbatches which increase the UV stability of polymers
- Their application is recommended in all cases where basic stabilization from the resin producer is insufficient for a given application



# MAKROPLUS®

## MAKROPLUS® A

- ▶ Concentrates of various antistatic and antifogging agents and their combination
- ▶ Reduces surface resistance, thereby reducing the possibility of static charge formation on the polymer surface



## MAKROPLUS® L, RA

- ▶ L = lubricant (facilitates plastics conversion operations at various technological stages, reduces coefficient of friction)
- ▶ RA = release agent (demoulding and lubricating agent, decreases adhesion to metal surfaces and eases demoulding)

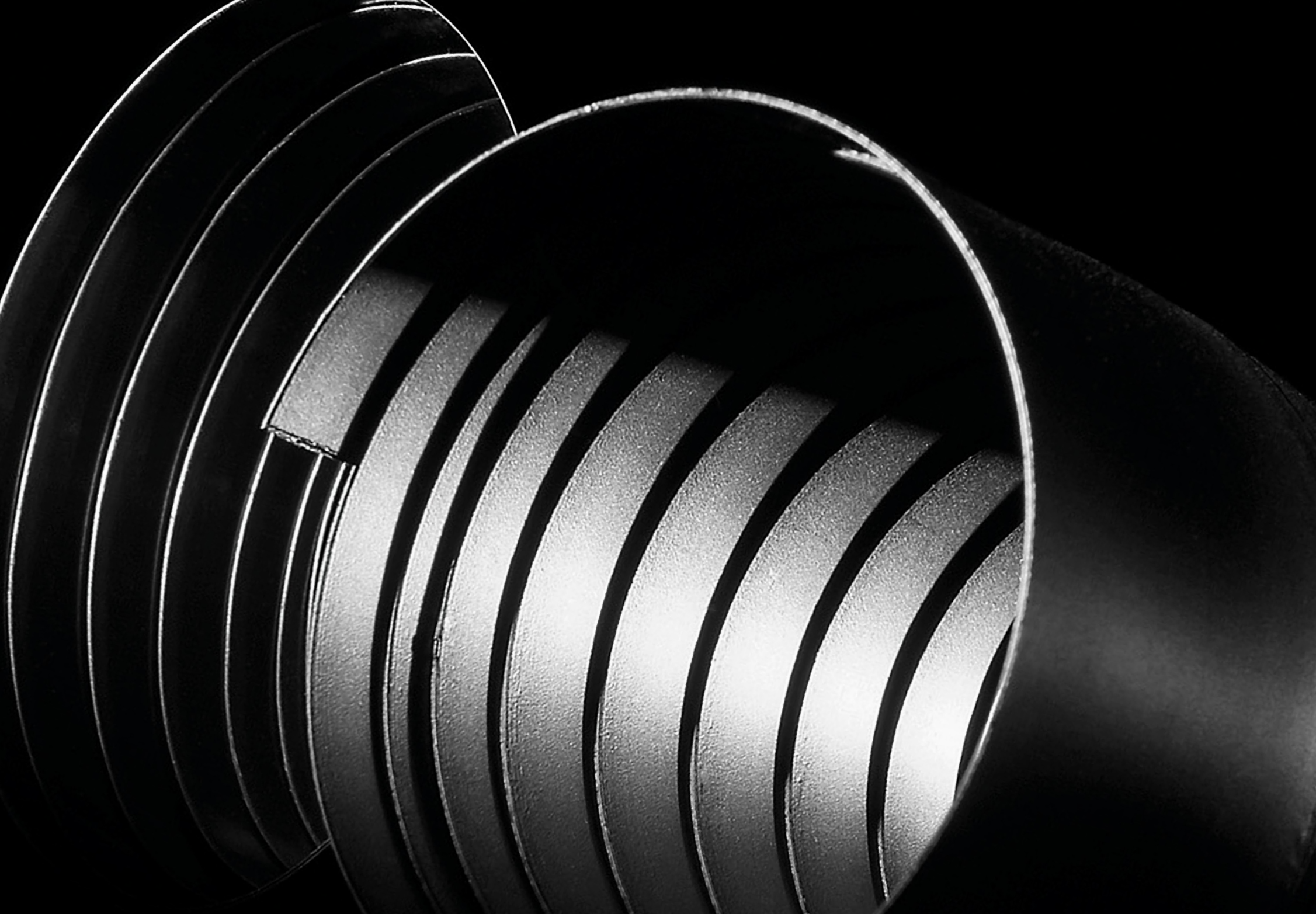
## MAKROPLUS® F

- ▶ Composite materials based on specially surface treated mineral fillers or glass fibers dispersed in a polyethylene or polypropylene matrix
- ▶ Enhances stiffness and reduces shrinkage of plastic parts

## APPLICATIONS

- ▶ Automotive
- ▶ Industrial
- ▶ Appliances
- ▶ Other technical applications





# MAKROPLUS®

## MAKROPLUS® CC

- ▶ Concentrates and compounds containing Chezacarb electroconductive carbon black
- ▶ Facilitates permanent electroconductive, dissipative or antistatic material properties

## APPLICATIONS

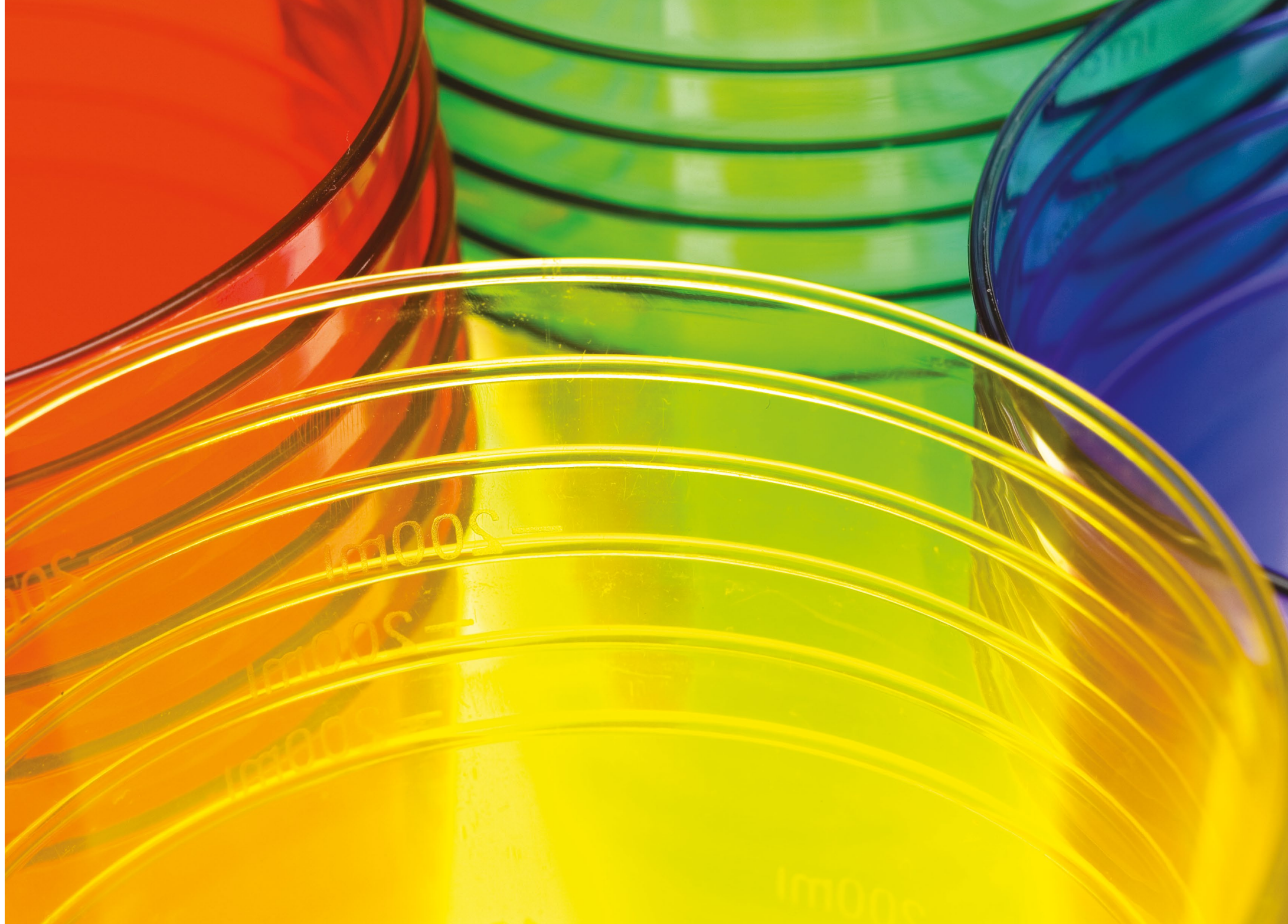
- ▶ Fuel tanks
- ▶ ESD protection
- ▶ Geomembranes / geotextiles
- ▶ Flooring
- ▶ Pipes
- ▶ Cables



# MAKROPLUS®

## MAKROPLUS® N

- ▶ Nucleating agent concentrate
- ▶ Significantly affects the rate of crystallisation, controls the size of spherulites and transparency of semicrystalline polymers, increases plastic component heat resistance, reduces production cycle time





# MAKROPLUS®

## MAKROPLUS® ANTISLIP

- Increases film surface roughness to limit slippage between storage bags

## MAKROPLUS® LA

- Additive concentrate for laser marking of various plastics (PP, PE, PC, PET-G, PA)





# OTHER PRODUCTS



## MAKROSLIP®

- ▶ Slip agent concentrate
- ▶ Reduces the coefficient of friction in polyolefin film



## MAKROCORR®

- ▶ Contact and vapor pressure metal anti-corrosion concentrate(VCI)
- ▶ Increases the anti-corrosive protection of metal articles in plastic packaging



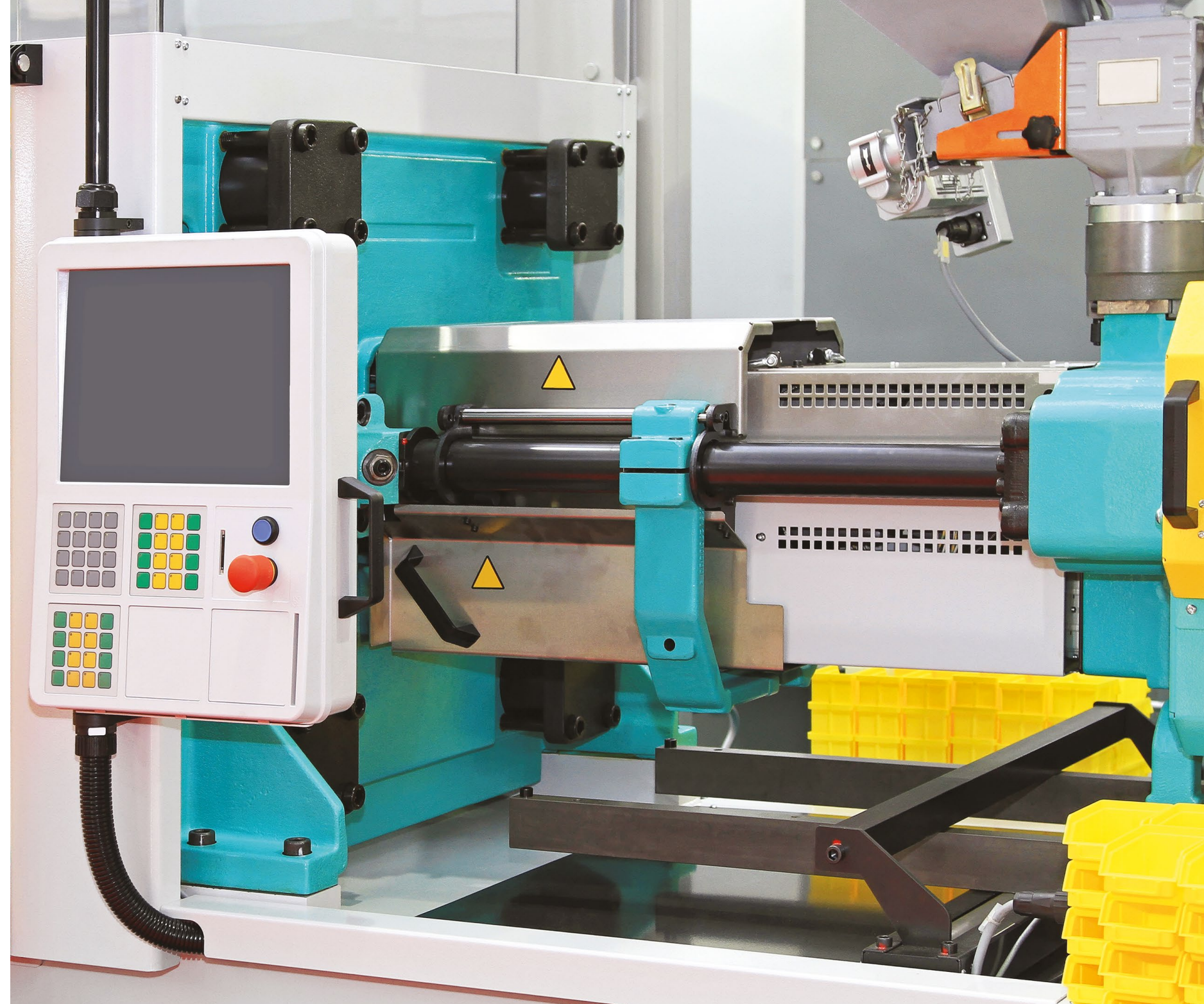
# OTHER PRODUCTS

## THERMOBREAK®

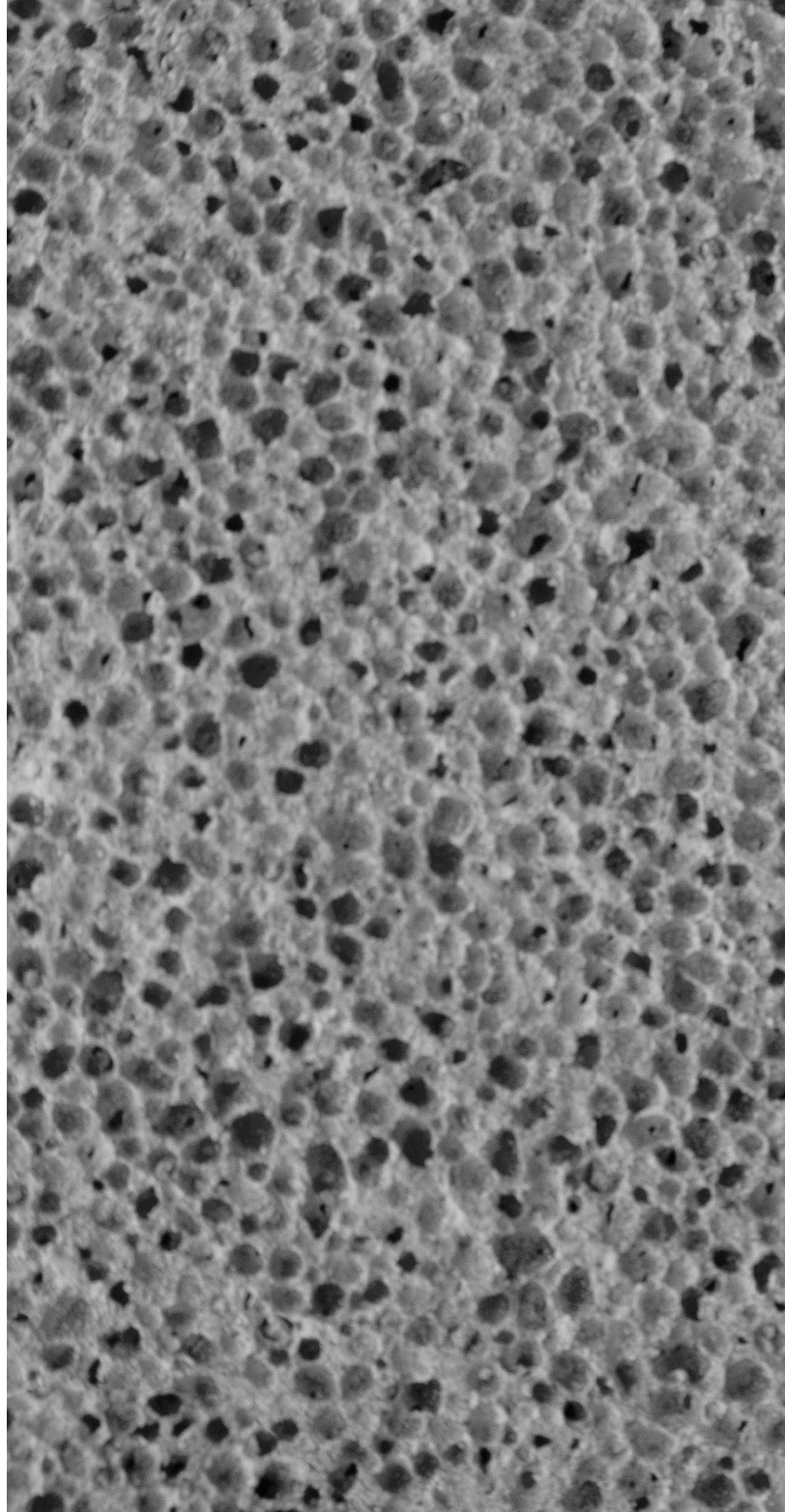
- ▶ Special material for preventing polymer degradation inside the extruder during production breaks
- ▶ Prevents the formation of burn-ins inside cylinders, considerably reduces the time required to purge cylinders

## MAKROCLEAN®

- ▶ Pelletized cleaning agent for various types of processing machine







# OTHER PRODUCTS

## **MAKROPORE®**

- ▶ Chemical blowing agent concentrate
- ▶ For the production of light-weight foamed articles

## **MAKROBRITE**

- ▶ Optical brightener concentrate
- ▶ Recommended especially for transparent or light-colored plastic products
- ▶ Increases the brilliance of light-colored or even black-pigmented articles



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