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Technical Data Sheet – Saika P8-b

Saika P8-b – MRS Booster & Stiffness Enhancer for HDPE Pipes

Product description

P8-b is a liquid performance additive for HDPE pipe compounds used in corrugated, spiral-wound and smooth-wall pipes, designed to increase stiffness and long-term strength (MRS) and to support wall-thickness optimization within the limits of relevant standards and customer specifications.

Key benefits & applications

- Higher ring stiffness and improved long-term creep/deflection resistance.
- Increased melt strength and dimensional stability during corrugation and spiral-winding.
- Possibility of more economic pipe formulations (including weight reduction in non-pressure pipes and partial use of alternative HDPE sources), provided each formulation is fully tested and approved by the pipe producer.

Typical applications

Corrugated HDPE drainage and sewage pipes, Spiral-wound structural pipes, Smooth-wall and selected pressure pipes, after full internal testing (hydrostatic, SCG, OIT and applicable ISO/EN/ISIRI standards).

Typical properties

Item	Value / Range
Physical form	Clear to slightly hazy liquid
Color	Pale yellow
Density (20 °C)	Approx. 0.85–0.95 g/cm³
Viscosity (20 °C)	Approx. 10–60 mPa·s
Typical melt-temperature window*	195–210 °C
Flash point (closed cup)	Typically > 65 °C
Water solubility	Practically insoluble
Packaging	1 L, 5 L, 20 L containers
Shelf life (unopened)	6-12 months (15–30 °C, cool & dark)

*Typical HDPE pipe-extrusion melt-temperature window.

Recommended dosage

- **0.5–0.8 kg P8-b per 1,000 kg of final HDPE compound (0.5–0.8 kg/MT).**
- Start at **0.3 kg/MT** to check process stability and pipe surface quality, then adjust within **0.5–0.8 kg/MT** according to stiffness/MRS targets and extruder limits.
- Higher dosages and use with non-standard HDPE grades (e.g. blow-moulding, film) are possible, subject to successful internal testing and, where applicable, external certification of the final pipe.

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Use instructions

- Dose Saika P8-b at the recommended level into HDPE pellets and mix until the liquid is uniformly distributed and the pellet surface appears dry and non-sticky.
- For small trial or development batches, prepare a pre-blend by mixing the required amount of P8-b with an appropriate portion of the PE feed (for example 5–10 kg), then add this pre-blend to the remaining material and mix until uniform.
- Feed the treated material directly to the existing extrusion line for pipes, profiles or sheets and operate within a typical HDPE melt-temperature profile of approx. 195–210 °C in the main mixing and shaping zones.
- During optimization, monitor extruder torque, head pressure and product surface quality; a moderate increase in pressure and load is expected and must remain within the normal operating limits of the line.

Process and quality monitoring

- Monitor head pressure, extruder load (current/torque) and output before and after P8-b addition; a moderate increase in melt viscosity, pressure and load is expected and must remain within the normal operating limits of the line.
- Check inner and outer surfaces of pipes, profiles and sheets for smoothness and absence of visible gels or defects at each new dosage or resin combination.
- For pressure-rated pipes and for any formulation using alternative or non-standard HDPE grades, all required mechanical and aging tests (e.g. hydrostatic pressure, SCG, OIT, impact and applicable ISO/EN/ISIRI tests) must be completed on the final compound before commercial use and, where relevant, before applying for or using any standard mark.

Storage and handling

- Store Saika P8-b in tightly closed original 1 L, 5 L or 20 L containers at approx. 5–25 °C, in a cool, dry and well-ventilated place away from direct sunlight, heat and ignition sources.
- Keep containers closed when not in use and mix gently before use if stored for an extended period.
- If stored for extended periods, inspect P8-b visually and mix gently until a homogeneous appearance is restored before use.
- Use the product within the indicated shelf life and apply stock-rotation (“first-in, first-out”) practices to help maintain consistent performance.

Safety

Saika P8-b is a low-hazard industrial processing aid. It should be handled in accordance with the P8-series Safety Data Sheet (SDS) and local regulations, using appropriate personal protective equipment as part of normal good industrial practice.

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