

PENO®

Powdered Naphthalene-Based Superplasticizer



PENO® is a powdered sodium naphthalene sulfonate-formaldehyde condensate used as a high-range water-reducing raw material for concrete. It is a light-brown, readily water-soluble powder and is declared chloride-free by ALPAKA.

Applications

- Concrete requiring high initial workability at low water-cement ratio
- High-strength and pumped concrete
- Concrete requiring improved cohesion and reduced bleeding
- Long-distance transport and hot-weather concreting after trials

Reference Standard

Where specified, performance should be evaluated against ASTM C494/C494M Type F. Request the current ALPAKA compliance report before making a conformity claim.

Advantages / Benefits

- Strong plasticizing action and improved initial workability
- Supports lower water-cement ratio without added mixing water
- Can support higher strength and lower concrete porosity
- Supports particle dispersion, cohesion and pumpability
- May enable cement optimization after full mix redesign and validation

Guideline for Use

Select the addition procedure and mixing sequence by trials with actual constituents. Ensure complete dissolution and uniform distribution. Evaluate workability, slump loss, air, setting, bleeding, segregation and strength at the intended temperature.

Dosage

Determine the optimum dosage by laboratory and site trials. No universal numerical dose is stated for PENO in this TDS.

Compatibility

Test with the actual cement, supplementary cementitious materials and other admixtures. Add different admixtures separately unless compatibility and combined dosing have been demonstrated.

Trial Requirements

- Initial slump, slump loss and pumpability
- Air content, bleeding and segregation
- Initial/final setting and early strength
- Required later-age strength and durability

Product Information

Chemical Base	Sodium naphthalene sulfonate-formaldehyde condensate
Physical State	Powder
Colour	Light brown
Solubility	Readily soluble in water
Solids	> 92%
Chloride	Chloride-free, as declared by ALPAKA
Packaging	25 kg woven bag with inner plastic liner
Shelf Life	12 months in unopened original packaging
Storage Condition	Dry, covered and protected from sunlight and moisture
pH	Refer to the current commercial specification and batch CoA
Recommended Dosage	Determine by concrete trials with actual materials

Effect of Overdosing

Overdosing may cause excessive workability, segregation, bleeding, altered air content or setting delay. Establish documented production limits and repeat trials when raw materials or temperature change.

Standards Note

ASTM C1017/C1017M was withdrawn in 2022 and is not presented here as a current approval. Use the current project specification and verified test documentation.

Storage

Store in the original closed packaging in a dry, covered place away from direct sunlight and moisture. Protect bags from tearing and contamination. Reseal partly used bags promptly and use clean, dry transfer equipment.

Basis of Data

Technical information in this sheet is based on ALPAKA product information and general industry references. Values described as approximate are not release specifications. Actual performance may vary with raw materials, formulation, temperature, process and site conditions. Verify critical properties on the current batch documentation.

Precautions

Obtain and follow the current product-specific SDS. Avoid ingestion, eye or skin contact and breathing dust. Use adequate ventilation, safety glasses, gloves and respiratory protection where required. Wash accidental contact with plenty of water.

Fire / Cleaning and Disposal

Refer to the SDS for fire classification and decomposition products. Avoid forming dust clouds and use an extinguishing medium suitable for the surrounding fire. Collect spilled powder with dust-controlled methods and dispose under local requirements.

Additional Information

For current specifications, application support and trial guidance, contact ALPAKA Chemical Group:
info@alpakagroup.com | +98 933 202 3003 |
www.alpakagroup.com.

Important Notes

The information and recommendations in this Product Data Sheet are given in good faith and reflect ALPAKA's current knowledge of the product when correctly stored, handled and used under normal conditions. Materials, formulations, substrates, production methods and site conditions vary; therefore no warranty of merchantability or fitness for a particular purpose can be inferred from this document. The user is responsible for confirming suitability through representative trials and for complying with applicable laws, standards, approvals and third-party rights. The current commercial specification, batch Certificate of Analysis and product-specific Safety Data Sheet take precedence over this document. Refer to the most recent issue for the product concerned.