TECHNICAL DATA SHEET

Chryso Concrete Solutions

06/27/2025

Chryso®Eclipse 4500

Shrinkage Reducing Admixture

DESCRIPTION

Chryso®Eclipse 4500 is a high-performance admixture for concrete that significantly reduces drying shrinkage, thereby minimizing the risk of shrinkage-induced cracking and curling. Unlike traditional expansive agents, it operates by lowering the surface tension of pore water within the concrete matrix. This reduction in surface tension helps to control the shrinkage that typically occurs as concrete dries, leading to more durable and stable concrete structures.

ADVANTAGES

- Reduces drying shrinkage up to 80% at 28 days & 50% at +1 year
- Enables normal performance of air-entraining admixtures
- Reduces drying shrinkage-induced cracking & curling
- Improves durability

FIELDS OF APPLICATION

- All Cement Types
- Precast Concrete
- Post Tensioned & Prestressed Concrete
- Ready-Mix Concrete
- Mortar, Grout, & Wet Mix Shotcrete

Method of Use

Dosage

- Dosage rates vary based on cement type, mix design, aggregate properties, environmental conditions, and project requirements.
- The typical dosage range is 0.2 gal/yd^3 to 2.0 gal/yd^3 (1.0 L/m^3 to 10 L/m^3) of concrete.
- It is recommended that trial mixtures be evaluated for shrinkage reduction in accordance with ASTM C157 prior to construction.
- Dosage rates may vary when used in conjunction with other admixtures.
- If conditions require using more than the recommended addition rates, please consult your Chryso ® representative.

Additional Usage Recommendations

- Structural Concrete (Bridges, Buildings, Foundations)
- Containment Structures (Nuclear and Radiation Shielding Concrete)
- Architectural Concrete (Decorative, Exposed Aggregate, Stamped Concrete)
- Industrial Flooring (Warehouses, Manufacturing Plants, Distribution Centers)
- Tilt-Up Construction (Panels, Warehouses, Large-Scale Walls)
- Marine and Coastal Structures (Ports, Docks, Seawalls, Offshore Platforms)
- Hydraulic Structures (Dams, Canals, Water Retaining Structures)
- Freeze/Thaw Environments (Cold Climate Applications, Deicing Exposure)

Implementation

- It is recommended that the product be added to the concrete mix after the dry materials and most of the water for optimum performance. Different sequencing may be used if local testing shows better performance.
- Please see Admixture Dispenser Discharge Line Location & Sequencing for Concrete Batching Operations for more information on product implementation.
- Pretesting of the concrete mix should be performed before use and as conditions and materials change in order to assure compatibility with other admixtures, and to optimize dosage rates, addition times in the batch sequencing and concrete performance.

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Equipment

- This product can be automatically dispensed using a complete line of accurate and reliable dispensing equipment designed for seamless integration into concrete batching systems.

Complimentary Products

- Chryso®Eclipse 4500 is compatible with most Chryso® admixtures as long as they are added separately to the concrete mix, usually through the water holding tank discharge line.
- In mixtures containing water reducers, it is recommended that Chryso ®Eclipse 4500 be used with polycarboxylate-based water reducers.
- Products is fully compatible with ASTM C260 air entrainers including and with calcium nitrite-based products.

Air Management Guidelines

- Concrete containing Chryso®Eclipse 4500 typically requires slightly higher AEA dosages to achieve similar plastic air content compared to an identical mixture without it. The following guidelines are recommended for use in freeze-thaw conditions.
- These guidelines were developed and validated through extensive laboratory and field testing.
- Note that minimum plastic concrete air contents represent plastic air at the point of placement.
  - Minimum compressive strength at 28 days of 4,500 psi (31 MPa)
  - Maximum water-cementitious materials ratio of 0.45
  - Minimum fresh concrete air content in accordance with the maximum aggregate size

Max. Coarse Aggregate Size	Min. Plastic Air Content
3⁄8 in. (9.5 mm)	7.5%
1⁄2 in. (12.5 mm)	7%
3⁄4 in. (19 mm) or greater	6%

Performances

- Impacts workability (slump) similarly to an equal volume of water (replacement of an equal volume of water is recommended)
- Decreases (typically less than 10%) early and later age compressive strengths.

CHARACTERISTICS

Product Nature	Liquid
Color	Colourless to light yellow
Shelf life	36 months
Cl^- Ions content	< 0,100 %
Specific gravity (25°C)	0,924

PRECAUTIONS

- If the product is exposed to freezing temperatures, gently thaw and agitate thoroughly before use.

SAFETY

Prior to any use, please read carefully the Safety Data Sheet.

PACKAGING

- Bulk
- 210 L (55 Gallons) Drum
- 1000L Tote (275 gallons)

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