TECHNICAL DATA SHEET

Chryso Concrete Solutions

04/20/2026

Chryso®Polarset

Set Accelerating Admixture

DESCRIPTION

Polarset® is a non-corrosive, non-chloride admixture for concrete. It accelerates cement hydration resulting in shortened setting times and increased early compressive strengths. Polarset® does not contain calcium chloride and is completely non-corrosive to reinforcing steel, metal decks and all metal components of your admixture storage and dispensing system. It is formulated to comply with ASTM C494 Type C and can be used at any dosage to comply with ACI 318 guidelines for chloride content of concrete. One gallon of Polarset® weighs approximately 1.35 kg/L (11.25 lbs).

Polarset® provides set time acceleration and early strength development similar to that provided by calcium chloride, but without the potential corrosive effects. Polarset® can be used where potential corrosion of embedded or stressed steel must be avoided. It can also be used in concrete that is to be placed on steel clad or zinc coated steel decks where corrosion must be similarly avoided.

Meets or exceeds the requirements of ASTM C-494 Type C

ADVANTAGES

- Designed for cold weather concreting at temperatures as low as -7°C (20°F)
- Completely non-corrosive
- Reduces set time and increases early strengths
- Can be used at high dosages

FIELDS OF APPLICATION

- All Cement Types
- Precast Concrete
- Ready Mix Concrete
- Concrete Patching
- Very High Early Strength Concrete
- Extended slump retention

Method of Use

Dosage

- The amount of Polarset® used will depend on specific job conditions, on local materials and on the degree of set acceleration and early strength development required. Typical addition levels range from 520 to 3910 mL/100 kg (8 to 60 fl oz/100 lbs) of cementitious, but levels as high as 6520 mL/100 kg (100 fl oz/100 lbs) of cementitious can be used. For freeze protection purposes typical addition rates are between 3910 to 5220 mL/100 kg (60 to 80 fl oz/100 lbs) of cementitious.

Additional Usage Recommendations

- Polarset® is specially formulated to reduce concrete setting times and increase early strengths for concrete in very cold conditions and may be used to reduce the time that concrete must be protected against freezing in ambient temperatures as low as -7°C (20°F). For conditions not subject to freezing, Polarset® may be used to speed finishing operations and/or form removal, leading to savings in concrete construction costs.
- In concrete mixes, Polarset® accelerates the chemical reaction between Portland cement and water. It speeds up the formation of gel—the binder that bonds concrete aggregates together. Accelerated gel formation in turn shortens the setting time of concrete, compensates for the set-slowing effects of cold weather and contributes to the development of higher strengths. Gel formation promotes heat generation within the mix—helping to protect the concrete from freezing during the critical first hours after placement.

Equipment

The information contained in this technical data sheet is given to the best of our knowledge and the result from extensive testing - which were conducted in order to remain as objective as possible. However, it cannot, in any case, be considered as a warranty involving our liability in case of misuse or any different use of our products, other than those from the "Applcation" paragraph of this technical data sheet. Some application tests should be carried out before using the product to ensure that the methods of use and conditions of application of the product are satisfactory. Our technical assistance is at the disposal of the users.

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- A complete line of accurate dispensers is available. Polarset® may be introduced on the sand, in the water, or at the end of the batch cycles. Similar to all concrete admixtures, Polarset® should not come in contact with other admixtures prior to entering the concrete.

Complimentary Products

- Polarset® is compatible with most admixtures as long as they are added separately to the concrete mix, usually through the water holding tank discharge line. In general, it is recommended that Polarset® be added to the concrete mix near the end of the batch sequence for optimum performance. Different sequencing may be used if local testing shows better performance. Please see Technical Bulletin TB-0110, Admixture Dispenser Discharge Line Location and Sequencing for Concrete Batching Operations for further recommendations. Polarset® should not come into contact with any other admixture before or during the batching process, even if diluted in mix water.
- Pretesting of the concrete mix should be performed before use, as conditions and materials change in order to assure compatibility, and to optimize dosage rates, addition times in the batch sequencing and concrete performance. For concrete that requires air entrainment, the use of an ASTM C260 air-entraining agent is recommended to provide suitable air void parameters for freeze-thaw resistance.

Process Component

- Since Polarset® may be used at high dosages, the concrete producer should account for the water contained in the Polarset®. Each gallon of Polarset® added to a concrete mix will contribute 0.78 kg/L (6.5 lbs) of water to that mix.

CHARACTERISTICS

Product Nature	Liquid
Color	Blue green
Shelf life	18 months
Cl^- Ions content	≤ 0,100 %
Specific gravity (25°C)	1,346
pH (25°C)	9,10

PACKAGING

- Bulk
- 210L Drum (55 gallons)
- IBC 1000L

PRECAUTIONS

- Polarset® freezes at approximately -23°C (-10°F), but its set acceleration, strength gain and non-corrosive properties are completely restored by thawing and thorough agitation.

SAFETY

- The set-accelerating admixture shall be Polarset®, non-corrosive, non-chloride set accelerator, as manufactured by Chryso. The admixture shall be used in strict accordance with the manufacturers' recommendations. The admixture shall comply with ASTM Designation C494 Type C and does not contain purposely added chlorides or contribute to steel corrosion. Certification of compliance will be made available upon request.
- Concrete shall be proportioned in accordance with *Recommended Practice for Selecting Proportions for Normal Weight Concrete*, ACI 211.1 or *Recommended Practice for Selecting Proportions for Structural Lightweight Concrete*, ACI 211.2, or in accordance with ACI 318.
- For use in freeze protection, request sample specification available from your Engineering Services representative.

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

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