

CHRYSO® Air 316

Description

CHRYSO® Air 316 is an air entraining admixture that is chloride free and based on a synergistic blend of synthetic and naturally occurring surfactants. It is supplied as a brown solution which instantly disperses in water.

CHRYSO® Air 316 acts at the interface between the mixing water and cement/aggregate particles to produce microscopic air bubbles, which are evenly distributed throughout the concrete.

The entrained air enhances durability by providing protection against the rapid temperature changes found in freezing and thawing conditions and with the use of de-icing salts.

Uses

- To produce air entrained concrete for increased durability and resistance to damage by frost and de-icing salts.
- Typical applications include concrete roads and bridge decks, airport runways and taxiways and other concrete exposed to potential frost damage.
- To improve cohesion and workability of concrete mixes where poorly graded aggregates must be used and bleeding, segregation or sand runs occur.
- Particularly suitable for use in situations where standard air entrainers are less reliable or less effective. Typical examples include where mixes containing PFA or aggregates with high dust contents are used.

Typical Dosage

The optimum dosage of **CHRYSO® Air 316** to meet specific requirements must always be determined by trials using the materials and conditions that will be experienced in use.

This allows the optimisation of admixture dosage and mix design and provides a complete assessment of the concrete mix.

With air entrainers in particular, a large number of factors affect the dosage required to obtain particular desired results.

Typical Dosage

Advantages

- Air entrainment increases the resistance of concrete to attack by frost and de-icing salts, reducing problems of surface scaling and concrete failure.
- Entrained air bubbles assist in the formation of a stable cohesive mix, reducing segregation and bleeding.
- Air entrainment improves workability and helps produce a dense, uniform, close textured surface free from gravel nests and sand runs, further enhancing durability.
- Excellent air bubble stability allows use with a wide range of aggregate qualities and mix conditions.
- Particularly effective with dusty aggregates and in mixes containing PFA or microsilica.
- Particularly designed for less variability in performance at varying concrete temperatures than normal air entraining admixtures.

Standards Compliance

CHRYSO® Air 316 conforms with BS 5075 Part 2 and ASTM C260.

Physical and Chemical Properties

Colour: Brown

Appearance: Liquid

Chloride content: 1.01

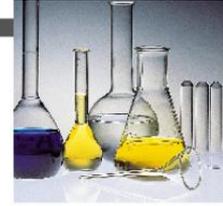
Alkali content: Typically less than 15.0

Instructions for use

Checking and control

Once a suitable dosage has been selected, care should be taken to ensure consistency of materials used and mixing and delivery procedures. Air content should be checked regularly by such means as the pressure method described in BS 1881 and ASTM C231.

Factors affecting air entrainment



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This makes it impossible to predict the dosage required for a specific mix requirement. As a guide, the dosage will generally be in the range of 0.05 to 0.25 litres/100 kg of cement to obtain an air content of $5\% \pm 2\%$ in a medium workability concrete of 300-350 kg/m³ cement content.

Where cement replacement materials are used they should be included in the cementitious content when calculating admixture dosage. Mixes containing only OPC will usually require dosage in the lower half of the normal range. Mixes containing PFA or microsilica are more likely to require dosages in the higher part of the range. The use of lower quality PFA may increase the dosage required, possibly extending the normal maximum dosage up to 0.40 litres/100 kg.

Storage

Minimum shelf life of 12 months provided the product is kept in a temperature between 5°C and 50°C

Packaging

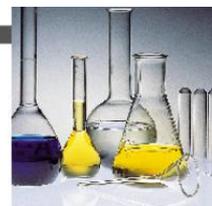
- 25 litres – 200 litres
- Flobins

Instructions for use

A number of factors can affect the air entrainment obtained for a particular dosage of air entraining admixture, some of which are listed below. The examples given of changes that these factors may make to a concrete mix should be taken as guidelines only and the actual effects in any particular situation confirmed in trials.

- a) Sands of apparently the same grading may have significantly different effects on the level of air entrainment, depending on factors such as silt content, particle size distribution and particle shape. Where changes in sand source or content must be made, or where sand varies within the same source, a careful check must be made on the effects on air entrainment.
- b) Increased cement fineness or cement content will tend to decrease air content. Changes in cement source and type may also lead to changes in the admixture dosage required to obtain a particular air content.
- c) The presence of carbon or organic impurities may reduce the effectiveness of an air entrainer and require an increased dosage. This will not usually be a problem but care may be required when using PFA, certain pigments or lignite bearing sands.
- d) Increased concrete temperature will tend to reduce air entrainment. Typically a rise from 10°C to 32°C may halve the level of air. In normal mixing conditions daily fluctuations will not give significant variations.
- e) Variations of mixer type and transit time may change the level of air entrainment. Small losses may occur during pumping. These will generally be consistent for a given set of conditions. High air contents may significantly reduce pump efficiency over long pump distances.
- f) Normal compacting procedures will not affect air entrainment. Prolonged vibration should be avoided.
- g) Increased dosages may be required at low workability levels to achieve the required air content.

SAFETY



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Template

For further information, please refer to the safety data sheet on our web site www.chryso.com.

Information contained in this document is given to the best of our knowledge and is based on extensive testing. In no event can it be considered as a warranty involving our liability in case of misapplication. A trial before application should ensure that the product conforms to the required conditions for use. Our specialists will assist in solving any difficulties encountered by the user.

Please enquire for the latest up-date

Last up-date: 28/05/10