

TECHNICAL DATA GUIDE- CONCRETE ADMIXTURE

CPLAST 144

High Range Retarding Superplasticizer for Ready Mix Concrete

DESCRIPTION

CPLAST 144 is a Sulphonated Napthalene Formaldehyde based high range Superplasticizer (Retarding Type) formulated to reduce the water content of a concrete mixture while maintaining a constant workability.

It offers excellent water reduction in mixes, coupled with good slump retention to aid placement. The resultant effect of the reduced water content is increased strength and durability of concrete. This makes concrete cheaper and environment friendly, as less cement is consumed.

The addition of CPLAST 144 makes the concrete to flow better, imparts cohesion and aids pumping of concrete.

CPLAST 144 confirms to performance requirements of BIS 9103, ASTM C 494 (Type 'A', 'F' & 'G'), BS 5075 and EN934 part2.

TYPICAL APPLICATIONS

- For use in ready-mix & site mixed concrete
- Mass concrete pours, pumped concrete with long hauls
- Low water/binder ratio mixes and offers water reduction up to 20%
- OPC/double/triple/ternary blend mixes with SCMs such as GGBS/ Fly ash/ Silica fume/ Metakaolin & other performance enhancers.
- For use in river sand/ manufactured sand/ CRF combinations.

FEATURES AND BENEFITS

- Offers excellent water reduction in mixes
- Reduced permeability & porosity.
- Increased compressive strength.
- Increased workability and slump retention.
- Reduced shrinkage cracks in hot climates.
- Reduction in cement content hence environment friendly.
- Better surface finish due to better dispersion of cement.

PERFORMANCE TEST DATA

Appearance	Dark Brown Free Flowing Liquid
Relative density	1.21 ± 0.02 @25°C
pH	≥6
Chloride ion content	<0.2%

MECHANISM OF ACTION

CPLAST 144 works as a dispersant by preventing the flocculation of fine particles of cement. These dispersants are basically surface-active chemicals consisting of molecules, having hydrophilic group attached to a hydrophobic organic chain. The polar group in the chain gets adsorbed on the surface of the cement grains. The polar hydrophilic group at the tip projects outwards from the cement grain. The hydrophilic tip can reduce the surface tension of water and the adsorbed polymer keeps the cement particles apart by electrostatic repulsion. With the progress of hydration, the electrostatic charge diminishes and flocculation of hydrating product occurs.

DISPENSING

CPLAST 144 is supplied as dark brown solution which is instantly dispersible in water. The correct quantity of CPLAST 144 should be measured by means of a recommended dispenser and should preferably be dispensed after pre-wetting of aggregates.

The mix shall be thoroughly mixed/ agitated at a speed of 12 rpm for at least 5 minutes before unloading.





DOSAGE AND DIRECTIONS FOR USE

Optimum dosage rates of CPLAST 144 vary between 0.4% - 1.6% by weight of cementitious materials.

Exact dosage rate depends on:

- Quality & quantity of binders & W/C ratio
- Gradation of fine aggregates
- Ambient temperature

RE-DOSING OF ADMIXTURE

Depending on the slump required and time elapsed for concrete premixed with CPLAST 144, an additional dose of (say up to 0.4% by W/C) may be added to regain workability loss and compensate for water loss in mixes. This may not adversely affect the ultimate strength of concrete and may also achieve higher strengths than normal concrete.

EFFECTS OF OVERDOSING

Severe overdosing of CPLAST 144 (Say above 0.4%) can lead to high workability mixes with segregation & bleeding, prolonged duration of initial and final set times, increased air entrainment and plastic shrinkage cracks.

WORKABILITY

The components disperse well on low slump concrete and enhance the slump to workable condition. The polymers will not delay concrete retardation, ultimate strength and offers ON TIME setting and similar strengths.

Noticeable delayed retardation occurs when sulphate resisting cements/supplementary cementitious materials are used and ambient temperatures are low. The concrete should be properly cured particularly in hot, windy and dry climates.

COMPATIBILITY

CPLAST 144 is compatible to be used in combination with Ligno sulphonate admixtures, air entrainers, accelerators, retarders, corrosion inhibitors and shrinkage reducing admixtures.

Please consult technical department of CBS Chemicals for recommendation before adding other admixtures.

PACKAGING

CPLAST 144 is supplied in 210 Litre HDPE drums; alternatively 1000 Litre IBC's and bulk deliveries can be arranged.

STORAGE & SHELF LIFE

CPLAST 144 should be stored in a shaded cool and dry place. Shelf life of CPLAST 144 is 12 months from the date of manufactured if kept in unopened, undamaged, original sealed packaging and kept within the range of 10°C to 50°C. If the product is frozen, thaw at +5°C or above and remix with mild agitation.

Failure to comply with recommended storage may deteriorate the product or packing.

HEALTH & SAFETY

CPLAST 144 is water based, non-flammable and non-hazardous. However it should not be swallowed or allowed to come into contact with skin and eyes. Suitable protective gloves and goggles should be worn. Splashes on the skin should be removed with water. In case of contact with eyes rinse immediately with plenty of water and seek medical advice. If swallowed, seek medical attention immediately - do not induce vomiting. For further information refer to the material safety data sheet.

DISCLAIMER

The information given is based on data and knowledge considered to be true and accurate and is offered for the user's consideration, investigation and verification. Since the conditions of use are beyond our control we do not warrant the results to be obtained. Please read all statements, recommendations or suggestions in conjunction with our conditions of sale including those limiting warranties and remedies which apply to all goods supplied by us. No statement, recommendation or suggestion is intended for any use which would violate or infringe statutory obligations or any rights belonging to a third party.

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