



ULTRA AARR

Alkali-Aggregate Reaction Resistant

Admixtures

Surface Treatments

Protective Coatings

Concrete Repairs

Industrial Flooring

Grouts & Anchors,

Adhesives,

Water Proofing

Sealants

Description

ULTRA AARR is lithium nitrate base admixture used to control alkali-silica reaction (ASR) in high alkali concrete, produced when using reactive aggregates.

Alkali Silica Reaction (ASR) is a chemical reaction which occurs when the alkali hydroxides present in the pore solution of the concrete react with certain forms of reactive silica present in the aggregates to form an alkali silica gel. This gel itself is harmless, but the presence of moisture it swells and generates tensile stresses in the concrete, eventually causing the concrete to crack. The main source of alkalis (sodium and potassium) in fresh concrete is Portland cement.

How it works

- When lithium nitrate is added to the concrete in sufficient quantity, the alkali silica gel along with the sodium, potassium and calcium ions also contains lithium ions. This gel contains lithium ions does not have a tendency to swell and expand in the presence of moisture and hence prevent the concrete from cracking.
- **ASTM Standards.**
- Comply with ASTM Standard C-289, C227, C1260 & C1293

Benefits

- Minimizes deleterious expansions in concrete due to ASR
- Increases durability and life span of the concrete structure

- Allows use to locally available aggregate.
- Compatible with appropriate pozzolans and other Ultra Admixtures
- Easy to use.

Properties

Appearance: Brown liquid

Specific gravity: Typically 1.170 at 25°C

Chloride content: Nil to BS 5075

Air entrainment: Typically less than 3% additional air is entrained at normal dosages.

Alkali content: Nil

Equivalent/liter of admixture. A fact sheet on this subject is available.

Packing

Ultra AARR is available in (210 Ltr) drum, or bulk supply in tank size is available.

Typical dosage

The standard dosage of Ultra AARR depends on the alkali content of the cement used. Add 0.8 to 1.8% by weight of cement depending upon the alkali contents in the cement.

For higher alkali content in cement this admixture can be used at the weight 2% by weight of cement.

Mixing patterns

Initial trials should be done with normal concrete. After initial trials, minor modifications to the overall mixture may be made as needed to optimize performance.

More efficient use of mixing water will improve mix cohesion.

Cautions

Health and safety

Ultra AARR is non-hazardous. However, it should not be swallowed or allowed to come into contact with skin and eyes.

Gloves and goggles should be used. 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 consult the Material Safety Data Sheet available for this product.

Cleaning and Disposal

Cleaning and disposal Spillages of Ultra AARR should be absorbed onto sand, earth or vermiculite and transferred to suitable containers. Remaining material should be rinsed down with large quantities of water.

Storage:

Avoid placing in direct contact to sunlight and always store in shady areas. At high temperature more than 40°C, keep the small cap of drum opened for fumes evaporation. At low temperature below 2°C, liquid may freeze in crystal form which does not affect quality of admixture and may be used after mixing properly.

ISO Certification:

Our production facility at Pakistan is ISO 9001:2008
ISO 14001:2004
by BUREAU VERITAS
and UKAS Management



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