

RASIR®

Admixture to Control Alkali-Silica Reaction in Concrete

DESCRIPTION

RASIR® is a liquid admixture that can mitigate and control ASR in concrete when using potentially reactive aggregates or sand with high or moderate-alkali cement or where there are sources of external alkalis. RASIR® is a 30% lithium nitrate solution. RASIR® weighs approximately 10 lbs/gal (1.2 kg/L).

FIELDS OF APPLICATION

- Where aggregates are susceptible to ASR
- With high/moderate alkali cement in geographic areas that could contribute to ASR
- Where there are external sources of alkali such as deicing salts, alkaline cleaners or marine environments
- Weather conditions (freezing and thawing/wetting and drying cycles)
- Traffic loading
- Critical structures
- Road, bridges, highways, parking garages
- Airport runways
- Water treatment facilities
- Dams, piers and docks
- Warehouses

Method of Use

Dosage

- The addition rate of RASIR® will depend on several factors including the alkali concentration of cement, cement content of the concrete, aggregate reactivity and the use of supplementary cementitious materials. ASTM tests should be performed in order to determine an accurate RASIR® addition rate when modifications to either of the above are made. Recommended tests are USACE CRD-C 662 and ASTM C1293 (modified for the testing of this admixture).
- Inaccurate dosage rates of RASIR® are likely if these tests are not properly modified. Contact your sales representative for a copy of the recommended test methodology or for assistance in specifications.
- Due to the wide variation of materials, admixtures and mix designs, we recommend that mix designs be appropriately tested prior to the project start.
- An initial estimate of the required dosage rate of RASIR® may be obtained from the following equation:
- RASIR® Dosage Equation =
 - $(\alpha * \beta * \delta) / 100$ in gal/yd³ or L/m³
 - α = Amount of cement to be mixed (lb/yd³ or kg/m³)
 - β = Alkali content of cement (%) from either the cement mill certificate or from testing (to be more accurate)
 - δ = For gal/yd³ = 0.55 and for L/m³ = 4.6
- For example, for a mix containing 600 lbs. of cement with an alkali content of 0.60%, the standard dose is 2.0 gallons of RASIR® per cubic

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 "Application" 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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- yard.
- $600 \times 0.60 \times 0.55/100 = 2.0 \text{ gal/yd}^3$
 - To maintain the same water-to-cement ratio, subtract 0.84 gallons of water for each gallon of RASIR® added.
 - Due to the wide variety of admixtures and mix designs, pretesting of the concrete mix will provide the user with data on plastic and hardened concrete properties. RASIR® has no general or significant adverse effects on concrete properties; however, the addition of RASIR® to a concrete mix may accelerate the set time of the concrete. Therefore, testing the concrete mix design prior to production is recommended.

Equipment

- A complete line of accurate, automatic dispensing equipment is available.

Complimentary Products

- RASIR® may be used with most admixtures, as well as with fly ash or silica fume to help control ASR. The optimum level of pozzolans to help mitigate ASR should be determined by appropriate ASTM methods.
- It is recommended that RASIR® be added separately to the concrete mix, usually through the water holding tank discharge line, and preferably at the end of the batch sequence. However, it may be added at other times in the batching sequence if testing shows acceptable performance. Please see [Technical Bulletin TB-0110, Admixture Dispenser Discharge Line Location and Sequencing for Concrete Batching Operations](#), for further recommendations.

CHARACTERISTICS

Product Nature	Liquid
Color	Yellow-white
Shelf life	12 months
Cl⁻ Ions content	= 0,200 %
Specific gravity (25°C) in g/ml	1,200
pH (25°C)	8,50

PRECAUTIONS

- Temperature: RASIR® will freeze at 20 °F (-7 °C).
- Do not use pressurized air for agitation.
- Shelf life: minimum of 12 months, depending on storage conditions.

SAFETY

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

PACKAGING

- Bulk
- 275 gallon tote
- 55 gallon drum

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