

## Description

ASRx 30 LN lithium-based, liquid admixture is formulated for use in high-alkali concrete containing reactive aggregates to inhibit and control Alkali-Silica Reactivity (ASR).

## Applications

Recommended for use in:

- All concrete mixtures containing high alkali cement and reactive aggregates
- Areas with known ASR problems
- Large structures that are difficult to repair or replace
- Bridges, dams, stadiums, buildings
- Concrete pavement
- Structures with long design service lives

# ASRx™ 30 LN

## ASR Inhibiting Admixture

### Features

- Proven chemistry for mitigating ASR (lithium compounds have been shown to be effective in mitigating ASR in concrete)
- Ready-to-use liquid admixture
- Compatible with other BASF Construction Chemicals admixtures
- Does not require low-alkali cement
- No adverse effects on concrete properties

### Benefits

- Improved durability of concrete
- Extended service life of concrete structures
- Allows use of locally available aggregates

### Performance Characteristics

**Mitigation of Alkali-Silica Reactivity (ASR):** Since the early 1950s, lithium compounds have been shown to be effective in mitigating ASR in concrete and SHRP Report C-343 details extremely favorable results in controlling ASR in concrete. ASRx 30 LN admixture is based on this long term and extensively tested use of lithium as an effective method for control of ASR in concrete.

**Rate of Hardening:** The addition of ASRx 30 LN admixture can accelerate the initial setting time of concrete by 5-20%.

### Guidelines for Use

**Dosage:** The dosage of ASRx 30 LN admixture is based on the alkali content of the cement, but may be adjusted depending on the particular ingredients of the concrete mixture (see Note 1).

A): Determine the amount of cement (lb/yd<sup>3</sup> or kg/m<sup>3</sup>) in the mixture.

B): Determine the alkali content of the cement (%).

C): Determine the preferred dosage multiplier. If you are using gal/yd<sup>3</sup>, multiplier is 0.55. If you are using L/m<sup>3</sup>, multiplier is 4.6.

D): Dosage =  $\frac{(A) \times (B) \times (C)}{100}$

**Sample Calculation:** If the concrete mixture contains 500 lb/yd<sup>3</sup> (297 kg/m<sup>3</sup>) of cement with an alkali content of 0.6%, the ASRx 30 LN admixture dosage is:

gal/yd<sup>3</sup>:  $\frac{500 \times 0.6 \times 0.55}{100} = 1.65$

L/m<sup>3</sup>:  $\frac{297 \times 0.6 \times 4.6}{100} = 8.20$

*Note 1: Some supplementary cementitious materials such as silica fume and some types of fly ash do provide a benefit in mitigating ASR in concrete. Therefore, the dosage of ASRx 30 LN admixture in a pozzolan-treated concrete mixture may be reduced if testing is performed (a) to establish the beneficial effect of the pozzolan and (b) to determine the optimum dosage of ASRx 30 LN admixture required for the concrete mixture. Testing is particularly recommended if a significant amount of alkalis can be contributed by sodium-bearing admixtures or Class C fly ash that are a part of the concrete mixture. For additional information on testing and dosages of ASRx 30 LN admixture in pozzolan-treated or other concrete mixtures, please contact your local BASF Construction Chemicals representative.*

## Product Data: ASRx™ 30 LN

**Water Content:** For every gallon of ASRx 30 LN admixture, the mix water content should be reduced by 0.8 gal (0.8 L for every liter of ASRx 30 LN admixture) to maintain the designed water-cementitious materials ratio.

### Product Notes

**Compatibility:** ASRx 30 LN admixture may be used in combination with any BASF Construction Chemicals admixture. ASRx 30 LN admixture can be used in combination with Class F fly ash or silica fume to help control ASR. The optimal replacement levels for these pozzolans should be determined by testing.

### Storage and Handling

**Storage Temperature:** ASRx 30 LN admixture has no slush point. If ASRx 30 LN admixture freezes, thaw at 20 °F (-7 °C) or above and completely reconstitute by mild mechanical agitation. **Do not use pressurized air for agitation.**

**Shelf Life:** ASRx 30 LN admixture has a minimum shelf life of 12 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your BASF Construction Chemicals representative regarding suitability for use and dosage recommendations if the shelf life of ASRx 30 LN admixture has been exceeded.

### Packaging

ASRx 30 LN admixture is supplied in 3 gal (11 L) pails, 55 gal (208 L) drums, 275 gal (1040 L) totes and by bulk delivery.

### Related Documents

Material Safety Data Sheets: ASRx 30 LN admixture.

### Additional Information

For additional information on ASRx 30 LN admixture or its use in developing a concrete mixture with special performance characteristics, contact your BASF Construction Chemicals representative.

*The Admixture Systems business of BASF Construction Chemicals is a leading provider of innovative additives for specialty concrete used in the ready mix, precast, manufactured concrete products, underground construction and paving markets throughout the NAFTA region. The Company's respected Master Builders brand products are used to improve the placing, pumping, finishing, appearance and performance characteristics of concrete.*

**BASF Construction Chemicals, LLC**  
Admixture Systems

[www.masterbuilders.com](http://www.masterbuilders.com)

United States 23700 Chagrin Boulevard, Cleveland, Ohio 44122-5544 ■ Tel: 800 628-9990 ■ Fax: 216 839-8821  
Canada 1800 Clark Boulevard, Brampton, Ontario L6T 4M7 ■ Tel: 800 387-5862 ■ Fax: 905 792-0651

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