

# Polychem Renu

Hydration-Stabilizing Admixture for Concrete

**FOR PROFESSIONAL USE ONLY**

## DESCRIPTION

*Polychem Renu* is a ready-to-use liquid solution manufactured to control the hydration process in Portland-cement concretes and concrete washwater. This advanced-set retarder coats the hydrating cement particles in the concrete and washwater, resulting in the suspension of the hydration chemical reaction. *Polychem Renu* maintains the plasticity, slump and temperature as it postpones the set of the concrete for a predictable period of time. Eventually, the *Polychem Renu* dosage is chemically consumed, allowing normal hydration to continue.

*Polychem Renu* meets or exceeds the ASTM C494 and AASHTO M194 Type B and Type D requirements.

## WHERE TO USE

The main applications in concrete of *Polychem Renu* are the following:

- Extended haul times with minimal slump losses
- Extended truck-discharge times
- Pervious concrete
- Control of peak temperature rise in concrete pours
- Shotcrete (wet mix)

*Polychem Renu* reduces expensive disposal costs associated with returned concrete and concrete washwater. It:

- Provides a quality, profitable and reliable method to treat returned concrete for reuse or hold (for a few hours) and then reuse the same day.
- Allows reuse of concrete washwater overnight or over a weekend in many situations.
- Reduces the amount of concrete washwater needed and truck mixer washouts.

## APPLICATION PROCEDURE

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*Polychem Renu* may be added at any stage of the concrete mixing cycle or directly into the concrete truck mixer.

## COMPATIBILITY WITH OTHER PRODUCTS

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*Polychem Renu* is compatible with most MAPEI products for preparing quality concrete. It is especially compatible with:

- Mid- and high-range water reducers.
- Non-chloride accelerators.
- Retarders and slump extenders.
- Air-entraining admixtures.
- Viscosity-modifying admixtures.
- Expansive agents and shrinkage-compensating admixtures to produce shrinkage-resistant concrete.
- Silica-fume-based powder additions.
- Class C and Class F fly ash.
- Various types of limestone fillers for manufacturing self-consolidating concrete and any other type of concrete that requires these fillers.
- All types of Portland cements.

The effect of *Polychem Renu* is neutralized by MAPEI's AF set accelerators for shotcrete. MAPEI's Technical Services Department is available to evaluate which admixture or admixture packages are most suitable for any specific need. Contact MAPEI's Technical Services Department for further advice.

## DOSAGE RATES

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### Treatment of concrete washwater

The recommended dosage of *Polychem Renu* for treatment of concrete wash water is 16 to 64 U.S. oz. (475 to 1 895 mL) per truck. The specific dosage will depend on ambient temperature and desired stabilization period. The table listed below provides the specific dosages for use with Type I cement.

Concrete washwater treated with *Polychem Renu* can be re-dosed once if scheduling allows to extend the use of washwater as mix water.

## Wastewater Stabilization Dosages

(U.S. oz. [mL] per truck)

Ambient temperature	Stabilization period	
	Overnight	Over the weekend
30°F to 50°F (-1°C to 10°C)	24 U.S. oz. (710 mL)	48 U.S. oz. (1 419 mL)
51°F to 75°F (11°C to 24°C)	32 U.S. oz. (946 mL)	64 U.S. oz. (1 893 mL)
76°F to 99°F (24°C to 37°C)	40 U.S. oz. (1 183 mL)	80 U.S. oz. (2 366 mL)

### Stabilization of returned concrete

The recommended dosage rate for *Polychem Renu* to stabilize returned concrete is 1 to 35 U.S. oz. per 100 lbs. (65 to 2 285 mL per 100 kg) of Portland cement. The exact dosage will depend on the age of the returned concrete, returned concrete temperature, admixtures used, stabilization time period, specific materials involved, and the mix design incorporated.

### Stabilization of freshly batched concrete

The recommended dosage of *Polychem Renu* for long-haul applications and extended truck-discharge times is 1 to 12 U.S. oz. per 100 lbs. (65 to 785 mL per 100 kg) of Portland cement. The exact dosage rate will depend on additional plastic time required, fresh concrete temperature, admixtures used, and specific materials involved. The table listed below provides the specific dosages for use, in a typical ready-mix production with cement Type I/II in an average ambient temperature of 70°F (21°C).

For each 30 minutes of retardation desired beyond 3 hours on the above chart, add 1 U.S. oz. per cwt (65 mL per 100 kg) of *Polychem Renu* on top of the dosages of the above chart. Contact MAPEI's Technical Services Department for recommended dosages and for assistance when using the product.

## PACKAGING

*Polychem Renu* is available by bulk delivery, in 55-U.S.-gal. (208-L) drums and 275-U.S.-gal. (1 040-L) totes.

## STORAGE

*Polychem Renu* can be stored for 18 months in sealed containers; it may freeze at temperatures below 35°F (2°C). Although freezing does not harm *Polychem Renu*, precautions should be taken to protect it from freezing. If it should freeze, thaw at 45°F (7°C) and reconstitute it with mechanical agitation. Do not use pressurized air for agitation.

## Extended-Haul Dosage Chart

U.S. oz. per cwt (mL per 100 kg cementitious)

Concrete temperature	Retardation (hours)				
	0.5 to 1	> 1 to 1.5	> 1.5 to 2	> 2 to 2.5	> 2.5 to 3
100°F to 109°F (38°C to 43°C)	5.0 (325)	5.5 (360)	6.0 (390)	7.0 (460)	7.5 (490)
90°F to 99°F (32°C to 37°C)	4.0 (260)	4.5 (290)	5.5 (360)	6.0 (390)	7.0 (460)
80°F to 89°F (27°C to 32°C)	3.0 (195)	3.5 (230)	4.5 (290)	5.0 (325)	6.0 (390)
70°F to 79°F (21°C to 26°C)	2.0 (130)	3.0 (195)	3.5 (230)	4.5 (290)	5.5 (360)
60°F to 69°F (16°C to 21°C)	1.0 (65)	2.0 (130)	3.0 (195)	4.0 (260)	4.5 (290)

## Technical Data

Consistency	Liquid
Color	Amber/brown
Density	8.93 lbs. per U.S. gal. (1.07 kg per L)
Primary function	Stabilization of freshly batched concrete, returned concrete and washwater
ASTM C494 classification	Type B and Type D
AASHTO M194 classification	Type B and Type D
Corrosivity	Non-corrosive. <i>Polychem Renu</i> does not contain calcium chloride or other chloride-based components. Its use will not contribute to the increased corrosion of reinforcing steel in concrete.

## ADDITIONAL INFORMATION

Refer to the SDS for specific data related to health and safety as well as product handling.

For information on MAPEI's commitment to sustainability and transparency, as well as how MAPEI products may contribute to green building standards and certification systems, contact [sustainability\\_USA@mapei.com](mailto:sustainability_USA@mapei.com) (USA) or [sustainability-durabilite@mapei.com](mailto:sustainability-durabilite@mapei.com) (Canada).

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Before using, the user must determine the suitability of our products for the intended use, and the user alone assumes all risks and liability. **ANY CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING TO US WITHIN FIFTEEN (15) DAYS FROM DATE IT WAS, OR REASONABLY SHOULD HAVE BEEN, DISCOVERED.**

## CONTACT INFORMATION

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### Customer Service

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For the most current product data and BEST-BACKED<sup>SM</sup> warranty information,  
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