

# CRETESHIELD® UltraMix™ TECHNICAL DATA

## SUMMARY OF FEATURES AND BENEFITS

- Compatible for Ready-Mix and Precast Applications
- Reduces Corrosion of Concrete Steel Reinforcement
- Increases Concrete Resistance to Chemical Attack
- Improves Durability by Resisting Traffic/Vehicular Wear
- Significantly Increases Concrete Resistance to Underwater Abrasion
- Increases Concrete Strength and Surface Hardness
- Ready-to-Use; No Mixing or Dilution Required
- Increases Cement Efficiency
- Promotes and Prolongs Concrete Workability
- Safe for Indoor Use; Low VOCs

### DESCRIPTION AND USE

Creteshield® UltraMix™ is a high-performance, ASTM C494-certified, concrete admixture added at the batch plant or to the concrete truck at the job site. Creteshield® UltraMix™ precipitates a chemical reaction within the concrete, increasing the concrete's strength, durability, abrasion resistance, resistance to chemical attack (including deicing salts and brines) and resistance to reinforcing steel corrosion while enabling accelerated finishing time. Creteshield® UltraMix™ limits scaling, Alkali-Silica Reaction (ASR) and Alkali-Aggregate Reaction (AAR) attack, aggregate pop-outs, and slab curling due to premature water loss. Because Creteshield® UltraMix™ is thoroughly integrated into the concrete, it offers significantly increased protection of concrete steel reinforcement. Creteshield® UltraMix™ is specially formulated for structural concrete applications such as parking structures, dams, bridges, locks, levees, spill-ways, marine/underwater piles/piers/structures, airport aprons, runways, deicing pads and more. Use of Creteshield® UltraMix™ is independently proven to substantially increase the lifespan of concrete structures, decreasing the instances of costly rip and replace remediation, which results in lower costs and environmental impacts.

### CREATE HARDER, MORE DURABLE, AND LONGER LASTING CONCRETE STRUCTURES

Creteshield® UltraMix™ creates harder, more impermeable concrete, resulting in attractive, durable, and long-lasting concrete slabs and structures. The advanced formulation and proprietary engineering features of Creteshield® UltraMix™ result in a vastly superior resistance to chemical attack, as well as steel reinforcement corrosion control. Creteshield® UltraMix™ increases the concrete surface resistance to abrasive wear from vehicular traffic, extending the service life of pavement, roadways, and parking structures. In underwater

### CRETESHIELD® UltraMix™ PERFORMANCE CRITERIA

Test	Reference	Creteshield® UltraMix™	Change from Reference
ASTM C 1138 Underwater Abrasion, 90 Day (Mass Loss, lbs)	0.74	0.25	66% Improvement
ASTM C 1138 Underwater Abrasion, 180 Day (Mass Loss, lbs)	0.82	0.34	59% Improvement
ASTM C1567 Potential Alkali-Silica Reactivity (Percent Expansion, %)	0.098	0.085	13% Improvement
ASTM C779 (C) Abrasion Resistance 180 Days (depth of wear, in)	0.10	0.04	60% Improvement in Slab Resistance to Abrasion
ASTM C1585 Rate of Absorption of Water (Absorption, mm)	5.80	4.74	18% Reduction in Absorption
ASTM C156 Water Loss (kg/m <sup>2</sup> )	-	0.52	-
ASTM C39 Compressive Strength 1 Day (PSI)	2423	3214	33% Strength Increase
ASTM C39 Compressive Strength 28 Days (PSI)	5576	6183	11% Strength Increase
ASTM C39 Compressive Strength 90 Days (PSI)	5870	6697	14% Strength Increase
ASTM C39 Compressive Strength 180 Days (PSI)	6764	7184	6% Strength Increase
ASTM C78 Flexural Strength 28 Days (PSI)	729	823	13% Strength Increase
ASTM C1583 Surface Tensile Strength 180 Days (PSI)	316	396	25% Strength Increase

applications, Creteshield® UltraMix™ increases the surface resistance to abrasive wear present with dams, locks, levees, spillways, sewage pipes, extending the service life of underwater concrete structures and pipes.

### APPLICATION INSTRUCTIONS

Creteshield® UltraMix™ is ready to use as packaged in proper dosages. Do not mix or dilute. Creteshield® UltraMix™ can be dosed at a rate of 2-40 fluid ounces per hundredweight (cwt).



Creteshield® UltraMix™ can be added to the concrete truck mixing drum onsite prior to placing concrete, or incorporated at the batch plant via an admixture delivery system. When adding Creteshield® UltraMix™ to the concrete truck drum, it is important that **NO ADDITIONAL WATER IS ADDED**. Carefully measure the appropriate dosage rate into the drum using thoroughly cleaned, and dry, measuring tools and buckets.

**DO NOT EXCEED MAXIMUM DOSAGE RATE OF 40 OZ/CWT.**

Creteshield® UltraMix™ is shipped in five (5) gallon buckets (typically on the job site) or dispensed directly into the concrete truck drum at the ready-mix providers batch plant (via integrated admixture delivery system – 55 gallon drum(s) and/or 270 gallon tote(s)). When Creteshield® UltraMix™ is poured into the concrete truck drum at the job site, mix the drum contents an additional 30 revolutions prior to placement.

In hostile weather conditions, Creteshield® UltraMix™ may be applied topically during the finishing process to renew the surface and to minimize premature drying (elephant skin) as well as preventing tearing and curling. Apply as needed using a low-pressure pump sprayer at a rate of no more than 500 SF / GL during final finishing operations.

Please contact the OBEX Technical Support Team if there are any questions about dosage rates for the intended concrete placement and application. Advanced planning is critical to all successful

concrete placement, including the use of Creteshield® UltraMix™. Since every batch of concrete is unique, and concrete behavior varies depending on design mix, material composition, and surrounding environmental conditions, the application rates of Creteshield® UltraMix™ to achieve a desired slump, cure time, strength, etc. may vary.

When utilizing Creteshield® UltraMix™ at the batch plant or via placement in the concrete truck mixing drum, follow ASTM C94 Standard Specification for Ready-Mixed Concrete.

**PHYSICAL PROPERTIES**

Appearance:	Milky White Liquid
VOC Content:	Estimated 1.66%
Density:	8.84 lbs/GL
Freezing Point:	32° F / 0° C

**SHIPPING AND STORAGE INFORMATION**

Creteshield® UltraMix™ is available in 5 gallon pails, 55 gallon drums, and bulk tote packaging. Creteshield® UltraMix™ is not regulated by DOT / IATA / IMDG as dangerous goods.

Creteshield® UltraMix™ should be kept in the original container when possible, with the lid tightly fastened. Creteshield® UltraMix™ has an optimized shelf life of 12 months from the date of manufacture. This





date is available on the batch reference number on the original container.

Keep in a cool, dry place raised off the floor. Store in a temperature range of 40–90°F or 4–38°C. **DO NOT ALLOW TO PRODUCT TO FREEZE.**

#### FIRST AID / SAFETY INFORMATION

Ingestion: Not expected to be toxic. Never give an unconscious person anything to ingest. If swallowed, immediately give two glasses of water, seek medical attention. Inhalation: May cause irritation. Remove to fresh air and provide oxygen. If not breathing, give artificial respiration. Seek medical attention if irritation persists. Eye Contact: Flush with plenty of water for at least 15 minutes. Seek medical attention if irritation persists. Skin Contact: May cause irritation. Wash affected area with soap and water. Remove contaminated clothing and shoes. Seek medical attention if irritation persists.

**WARNING: FOR PROFESSIONAL USE ONLY. BEFORE USING PRODUCT, READ SAFETY DATA SHEET (SDS) AND INSTRUCTIONS ON PACKAGING. ALKALINE CONCENTRATE: CONTACT CAN DAMAGE EYES, SKIN AND OTHER BODY TISSUES. HANDLE WITH CARE. EYE AND SKIN IRRITANT. POSSIBLE DIGESTIVE TRACT IRRITANT; DO NOT TAKE INTERNALLY. KEEP OUT OF REACH OF CHILDREN. SPRAY MIST IS RESPIRATORY TRACT IRRITANT. USE ONLY WITH ADEQUATE VENTILATION. Do not breathe vapors or spray mist. Avoid contact with eyes, skin, clothing. Observe appropriate safety and job site controls. Wear appropriate protection including eye protection and chemical-resistant gloves. Ensure fresh air flow during application and until dry. If you experience headaches, dizziness, eye watering, or if air monitoring shows vapor/mist levels above applicable limits, wear a P100/organic**

vapor respirator (NIOSH TC-84A approved), used according to manufacturer's instructions.

**SEE SDS FOR A FULL LIST OF HEALTH AND SAFETY WARNINGS**

