



032-195-2816  
Environmentally  
Preferred Coating

# KISTAL 9

## Integral Waterproofing Admixture by Crystallisation

### DESCRIPTION

KISTAL 9 is a chloride free, unique chemical admixture supplied in the form of grey powder. It is added to concrete and mortars during batching, hence reducing time and labour than other waterproofing methods. Its unique crystallization properties impart both self-healing and waterproofing properties for any concrete throughout its lifetime.

### RECOMMENDED USE

- Basement
- Dams
- Driveway Slab
- Environmental Deck
- Ground slab and suspended slab
- Lift Pit
- Marine and other water retaining structures
- Ponds
- Potable Water Tank
- Precast structures
- Raft foundation and retaining walls
- Reservoirs
- Roof and Roof Terrace
- Shotcrete
- Swimming Pool and Water Feature
- Tunnels and pipelines

### ADVANTAGES

- Able to withstand high hydrostatic pressure >5 bars.
- Can seal hairline cracks/ static cracks up to 0.4mm.
- Compactible with green materials such as slag powder, fly ash, silica fumes etc.
- Cost saving against waterproofing membranes or coatings.
- Economical and simple to apply compared to other systems.
- Facilitates faster backfilling – save money and time.
- Forms as an integral part of concrete.
- No effect on setting time or water demand.
- Non-toxic. Complies with SS375: 2001 – Potable water.
- Protection of concrete against aggressive chemicals including chloride attack to reinforcement steel from corrosion.
- Low sulphate content (Complies to BS12)

### PACKAGING

KISTAL 9 is supplied in 20 kg bags

REV. TDS-K9-V4

Dated: 19-Feb-2023

KENSETSU INTERNATIONAL (S) PTE LTD



## **MIX DESIGN GUIDELINES**

KISTAL 9 is added into the concrete mix at the rate of 0.8% - 1.2% by weight of cement content. Dosage of KISTAL 9 to meet with requirements must be assessed throughout the trials mixes.

### **Batching and Mixing**

The correct quantity of KISTAL 9 should be measured based on approved mix design. Add KISTAL 9 in powder form to the drums of the ready-mix concrete truck. Mix the materials for minimum 5 minutes to ensure the KISTAL 9 has been evenly distributed throughout the mix.

### **Joints**

KISCOTE R waterstop must be provided in-between construction and movement joints prior to the next pouring of concrete.

### **King Post / Pipe Penetration**

- KISCOTE R10 – 20 x 10mm dimension waterstop must be provided around pipe penetration prior to the pouring of concrete.

### **Curing**

All structural concrete added with KISTAL 9, good curing practice must be maintained. Use of curing compound, spraying with water or any other means of preventing drying which caused shrinkage and cracking should be practiced.

## **STORAGE**

KISTAL 9 should be stored in a cool and dry area, tightly sealed in its original packing, and a 12-month shelf life can be expected from date of manufacturing.

## **HEALTH & SAFETY**

Gloves and goggles should be worn. Any contact to the eyes and skin should be washed off with clean water. In the event of prolong irritation, seek medical advice. Powder products should be handled to minimize dust formation. Use a mask if excessive dusting is unavoidable. Refer to KISTAL 9 SDS for further information.



## **TECHNICAL PROPERTIES**

<b>KISTAL 9</b>	
Appearance	Powder
Colour	Grey
Suitable pH range	3.0 (acid) – 11.0 (alkaline)
Water penetration (DIN 1048, Part 5)	<20mm
Water permeability (DIN 1048 Part 5)	$<5.0 \times 10^{-13}$
Coefficient of water permeability of hardened concrete (LTA M&W specification for civil & structural works – chapter 14 Appendix 1 – Admaterials in-house method ADM/CE/017: 2013)	$4.53 \times 10^{-13}$
Rapid chloride permeability test (ASTM C1202)	Moderate
Water soluble chloride by mass of admixture (BS EN 480-10:2009)	<0.01%
Sulfate content (BS EN 196-2)	Complies to BS 12
Chemical resistant test (ASTM C267:2001(2012))	No effect
Weight gain and water penetration ratio (HDB in-house test method)	0.21

### **IMPORTANT NOTES**

Any information and/ or specification contained herein is to the best of the company knowledge, true and accurate, it is always recommended that trial to be carried out to confirm suitability of use for all products, as no warranty is given or implied in connection with any recommendations and/or suggestions made by the company representatives, agents and/or distributors.

All information contained in this document is effective from date shown and supersedes all previous version. Please check with your local KENSETSU office to confirm that this is up to date version.

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