

**MS-5-iSC****INTELLIGENT SELF-CURING PC MODIFIED SILICA FUME GEL****DESCRIPTION**

MS-5-iSC is an advanced additive formulated using Nano-hydrophilic polymer technology embedded within a microsilica gel matrix. It is designed to enable intelligent Self-Curing (iSC) by absorbing and retaining free water within its porous structure, thereby supplying the moisture needed to sustain cement hydration. This internal curing mechanism effectively minimizes early-age drying shrinkage and reduces the risk of cracking caused by premature water evaporation. MS-5-iSC improves the rheological properties of concrete. It is based on a highly pozzolanic mineral admixture that reduces water absorption and increases the compressive strength and makes concrete impermeable. Workability retention is special properties of MS-5-iSC.

This advanced-technology product can be controlled using the following standards:

ASTM C1202

BS EN 12390-8, BS 1881-122

**ADVANTAGES**

- Enables internal curing by storing and gradually releasing water required for cement hydration
- Reduces surface water evaporation in hot, dry, or windy conditions
- Reduces water-cement ratio
- Reduces cement content in concrete
- Increases workability and workability retention of concrete
- Increases flexural, tensile and compressive strength of concrete
- Achieve to early compressive strength of concrete
- Improves pumpability of concrete and reducing depreciation of concreting Equipments
- Improves concrete consistency
- Enables economies in mix designs to be achieved when special conditions such as chemicals attack, dynamic load, etc.
- Increases durability of concrete
- Increases the abrasion resistance of concrete
- Reduce the risk of cracks in concrete

**FIELD OF APPLICATION**

- Concrete production and transportation in hot, cold, or windy climates
- Concrete for massive structures such as dams, water treatment plants, water channels, and bridges
- Produces High Strength Concrete (HSC) in special conditions (high dynamic loads)
- Produces non-osmosis concrete for the regions exposed to chemicals attack
- Reinforced and non-reinforced concrete
- Dams, water and wastewater treatment, bridges, channels, etc.





## DOSAGE

The optimum dosage of MS-5-iSC can be determined by trials in the site. Depending on concrete mix design (concrete type, workability, compressive strength, sizes and types of aggregates, cement content, water/cement ratio, ambient temperature and concreting conditions), a dosage of between 3.0 and 10.0 percent by weight of cement is recommended.

For use with other range of dosage, contact ABADGARAN Technical Services Department.

Note: please contact our engineering office in case of simultaneously use of more than one additive.

## DIRECTION OF USE

MS-5-iSC can be added to concrete in two ways:

- 1- MS-5-iSC could be added to ready-mix concrete before placing concrete.
- 2- MS-5-iSC could be added to a part or whole of concrete mixing water then added to the concrete mix.

## PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Slurry

Color: Grey

Specific gravity:  $1.26 \pm 0.05 \text{ g/cm}^3$

## STORAGE

Shelf life: 1 year in the original package.

Storage condition: should be protected from direct sunlight and frost. Keep container in the temperature range between  $+10^\circ\text{C}$  and  $+30^\circ\text{C}$ .

Packing: 24 kg container

## HEALTH AND SAFETY

This product does not contain any substances hazardous to human health and the environment. However, it should not be swallowed or allowed to be in contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water. For further information, refer to the material safety data sheet.

MS-5-iSC is not flammable. MSDS is available at ABADGARAN website.

## TECHNICAL SERVICE

The ABADGARAN INTERNATIONAL GROUP Technical Department is available to assist you in the correct use of our products and its resources are at your disposal entirely without obligation.

All data presented in this technical datasheet are based on our last researches in ABADGARAN CONSTRUCTION CHEMICALS laboratories and are just as a guide for choosing appropriate material. Therefore, users should conduct a sufficient investigation to establish the suitability and conformity of any product for intended uses.

