

# MICRO-AIR<sup>®</sup> 111

## Air-entraining agent for concrete

### Description of Product

MICRO-AIR 111 is an air-entraining admixture, which creates microscopic air bubbles that are strong, small and closely spaced. These air bubbles improve the plasticity of the fresh concrete and reduce the sulphate attack and water penetration of the cured concrete.

### Applications

Entraining controlled air bubbles in a wide range of concrete types such as:

- Airport runways
- Road works
- Normal mix designs to reduce bleeding and improve cohesive properties
- Concrete containing big quantity of fine materials
- Mass concrete, such as dams, to improve and ease placing, compaction

### Advantages

- Helps to reduce the w/c ratio
- Reduce segregation
- Reduce bleeding
- Increase resistance of the hardened concrete to sulphate and frost
- Increase workability
- Improves surface finish
- Enables air-entrainment level of approximately 8.5±1% into concrete mixes without loss in strength
- Cohesiveness of the concrete mix will help concrete placing

### Compatibility

MICRO-AIR 111 is compatible with concrete containing RHEOBUILD and POZZOLITH admixtures produced by BASF. It is also compatible with all brands of Portland cement available in Egyptian market.

The use of MICRO-AIR 111 with BASF admixtures forms a desirable combination for producing the highest quality, normal or lightweight concrete.

### Packaging

MICRO-AIR 111 is supplied in 210ltr drums.

### Typical Properties

Specific gravity:	1.084 ± 0.005 at 25°C
pH:	6-7.5
Colour:	Dark brown
Chloride content:	Nil to BS 5075 :1982

### Standards

MICRO-AIR 111 meets the requirements of:

ASTM C-260-86

ASTM C494, Type A and D

AASHTO M-154

CRD-C 13-77

BS 5075: 1982, Part 2

### Application Procedure

MICRO-AIR 111 should be added to the concrete mix during the mixing cycle at the same time as the water or the aggregate. For optimum performance, MICRO-AIR 111 should be added to damp, fine aggregate.

As stated in ACI 212 and other publications, when two or more admixtures are used, they must be added to the mix separately and must not be mixed with each other prior to adding to the concrete mix. Never add MICRO-AIR 111 to dry cement. No extension to normal mixing time is necessary.



The Chemical Company

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## Dosage

MICRO-AIR 111 is added to the concrete mix in such a quantity that will produce the required effect in the concrete.

The exact quantity of MICRO-AIR 111 should be determined by several trial mixes keeping in mind that the following factors will affect concrete in the wet state: w/c ratio; concrete and ambient temperatures; cement content; sand to aggregate ratio; sand grading; method of placement.

The required amount of air is generally obtained by the addition of 0.4-1ltr/100kg of cement.

In concrete mixes that contain RHEOBUILD or POZZOLITH admixtures, the required of MICRO-AIR 111 is generally less than the amount required in plain concrete.

## Storage

MICRO-AIR 111 admixtures should be stored and dispensed at 2°C or higher. Although freezing does not harm this product, precautions should be taken to protect it from freezing. If it freezes, thaw and reconstitute by mild mechanical agitation. Do not use pressurised air for agitation.

## Shelf Life

Up to 24 months if stored according to manufacturer's instructions in unopened containers.

## Safety Precautions

MICRO-AIR 111 is a caustic solution. In case of contact with skin, eyes or clothing, immediately flush the exposed area with water for at least 15 minutes. Remove contaminated clothing and shoes. Call a doctor – especially if contact is with eyes. Wash clothing before re-use and discard shoes. Always keep the product out of the reach of children.

## Note

Field service, where provided, does not constitute supervisory responsibility. For additional information, contact your local BASF representative.

BASF reserves the right to have the true cause of any difficulty determined by accepted test methods.

## Quality Statement

All products manufactured by BASF Egypt, or imported from BASF affiliate companies worldwide, are manufactured to procedures certified to conform to the quality, environment, health & safety management systems described in the ISO 9001:2000, ISO 14001:2004 & OHSAS 18001:1999 standards.

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\* Properties listed are only for guidance and are not a guarantee of performance.

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