

## Air entraining admixture

### Description of Product

MICRO-AIR<sup>®</sup> 116 is specifically formulated for use as an air entraining admixture for concrete and is manufactured to a precise quality control specification which ensures uniform, predictable performance. It is based on the salt of an ether sulphate.

MICRO-AIR<sup>®</sup> 116 complies with:

- BS 5075, Part 2
- EN 934 – 2 T5

### Application

MICRO-AIR<sup>®</sup> 116 entrains millions of semi-microscopic air bubbles within the mortar fraction of concrete, evenly distributed by thorough mixing, to give more stable air contents than other air entraining systems.

MICRO-AIR<sup>®</sup> 116 has been specifically formulated to produce the optimum air bubble size and spacing factor for durability, and to minimize strength loss possibilities by providing a maximum level of entrained air for given mix designs.

MICRO-AIR<sup>®</sup> 116 also promotes more rapid and thorough hydration of the cement, giving increased strength in lean mixes, and minimizing strength loss due for air content effects in rich mixes

### Features and Benefits

- Improved freeze/thaw resistance.
- Increase resistance to the disruptive effect of de-icing salts.
- Improved resistance to sulphate attack on concrete.
- More durable concrete.
- Reduced permeability.
- Less bleed water.
- Lower incidence of sand/water runs.
- Improved finish ability and surface finish.
- Improved cohesion, lessens segregation.
- Improved workability - even with poor shaped aggregate.
- Improves harsh mixes, enabling marginal sand, deficient in fines to be utilized.
- Reduced honeycombing.

### Fields of Applications

MICRO-AIR<sup>®</sup> 116 can be used in all types of concrete mixes, where a durable concrete with a better surface finish is required. Such applications cover:

- Mortar manufacture.
- Ready mixed concrete.
- All types of slipform work.
- Extruded Concrete.
- Precast Concrete.
- Geographic locations where irregular aggregate shapes and grading size deficiencies (dredged / washed sands) cause workability and surface finish problems.
- Semi-dry precast units.
- Site concrete.
- Concretes containing PFA or GGBS.
- And many more instances.

### Mix Designs

MICRO-AIR<sup>®</sup> 116 will have a two fold physical effect when added to a concrete mix:

- It will increase workability.
- It will increase the volume of the mix the amount depending on dosage/specification requirements

To maintain workability, it will be necessary to reduce original water content/volume of the mix by approximately 12 Litres/m<sup>3</sup>.

To maintain the mix yield, assuming the plain concrete has a nominal 1% air content, then for a 6% air entrained, a 5% volume of mix water (12litres/1000litres) already reduced to maintain workability total 3.8%. Since MICRO-AIR<sup>®</sup> 116 effectively acts as a fine aggregate in particle size, the volume reduction to maintain yield is normally carried out by adjusting the sand content. In this example the weight adjustment would be: -3.8% of 1000litres x SG Sand (assumed 2.65) = 100.7kg sand reduction.

MICRO-AIR<sup>®</sup> 116 may affect the strength of the concrete mix at 28 days, depending on cement content range and materials involved. As a general rule the following applies:-

- It will increase workability.
- At cement contents >325kg/m<sup>3</sup> - some loss in strength can be expected

As a general rule 5kg cement change per m<sup>3</sup> concrete is equivalent to a change in 28 days compressive strength of 1N/mm<sup>2</sup>, should adjustments for strength be necessary.

### Technical Data/Typical Properties

Appearance	Dark Brown Liquid
Specific gravity @ 20°C	1.02
Chloride Content	Nil
Nitrate Content	Nil
Alkali content (%)	1.6%
Freezing Point	-3°C

### Compatibility

MICRO-AIR<sup>®</sup> 116 is compatible with all Portland cement systems, and effective in mixes incorporating PFA, and blast furnace slag (GGBS). For additional information, or areas of doubt, please consult BASF IC Admixture Systems Technical Services Department.

BASF IBC Admixture Systems Limited can advise on suitable equipment for installation, covering manual, semi-automatic, automatic and computerized systems.

### Method of Use

MICRO-AIR<sup>®</sup> 116 is a liquid admixture, for ease of addition, and is supplied ready to use, requiring no on-site dilution. It should be added to the mix at the same point as the mix water.

### Packaging

MICRO-AIR<sup>®</sup> 116 is available in 25 Litre, 210 Litre, 1000 Litre containers and Bulk.

### Dosage

The amount of MICRO-AIR<sup>®</sup> 116 required to meet a given air content specification depends purely the materials, mix design, and general conditions prevailing at time of use. Typical MICRO-AIR<sup>®</sup> 116 addition rates range is 30ml to 60ml per 50kg. Addition rates above and below this range are acceptable providing specified air content is achieved. Many factors affect air entrainment efficiency in concrete mixes.

### Storage

Store away from direct sunlight in ambient temperatures and in dry conditions

The manufacturer would advise that trial mixes should be undertaken, using job materials, in simulated job conditions to determine suitable dosage rates and performance.

### Shelf life

12 months in manufacturers sealed drums.

### Dispensing

BASF IBC Admixtures should be accurately dispensed through a calibrated dispensed system suitable for the mixing plant and mix cycle concerned

### Watchpoints

If MICRO-AIR<sup>®</sup> 116 admixture has frozen, thaw at temperatures above 2°C and completely reconstitute by mild agitation. Do not use pressurised air for agitation.

BASF IBC Admixture Systems Limited,  
Unit 143 Baldoyle Industrial Estate,  
Baldoyle,  
Dublin 13, Ireland  
Tel: +353 (01) 832 1033  
Fax +353 (01) 839 3539  
[www.admixturesystems.ie](http://www.admixturesystems.ie)

## MICRO-AIR<sup>®</sup> 116, BASF IBC Admixture Systems Limited, Version 1

### Health and Safety

\*For full information on Health and Safety matters regarding this product the relevant Health and Safety Data Sheet should be consulted.

The following general comments apply to all products.

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs, (which may also be tainted with vapour until the product is fully cured and dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek medical attention. Keep away from children and animals. Reseal containers after use.

### Spillage

Chemical products can cause damage; clean spillage immediately.

### DISCLAIMER

"BASF IBC Admixture Systems Limited" (the Company) endeavours to ensure that advice and information given in Product Data Sheets, Method Statements and Material Safety Data Sheets (all known as Product Literature) is accurate and correct. However, the Company has no control over the selection of its products for particular applications. It is important that any prospective customer, user or specifier, satisfies him/her-self that the product is suitable for the specific application. In this process, due regard should be taken of the nature and composition of the background/base and the ambient conditions both at the time of laying/applying/installing the material and when the completed work is to be brought into use.

Accordingly, no liability will be accepted by the Company for the selection, by others, of a product, which is inappropriate to a particular application.

Products are sold subject to the Company's standard conditions of sale and all customers, users and specifiers, should ensure that they examine the Company's latest Product Literature.