Protex-A-Cote international co.
- Head office Jerusalem
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Super Flow

Supe Flow *is a synthetic polymer of the Ligno sulphonate family.*

USES

Super Flow can be used with all types of Portland cement and/or blast furnace slag cements with fly ash, pozzolan, fillers fume-silica etc…
However the diversity of these cements is such that site trials will ensure the best results.
For other cements our Technical Department should be consulted as a precaution.
Super Flow *is* mainly used in the following fields:

- Ready-mix concretes
- Highly-reinforced concretes
- Industrial floors
- Prestressed concretes
- Heavy precast concretes

ADVANTEGES

- Flowing concrete is obtained from concretes with a dry or plastic consistency without adding water.
- Important water reduction is obtained while concretes keep the same workability.
- Setting time, shrinkage remains practically unchanged.
- Optimization of cement content to get desired mechanical strengths.
- Safe with prestressed concrete.

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STANDARDS

Super Flow complies with many standards including:

- ASTM C494 Type D & G.
- BS 5075 part 1 and part 3.
- NF P 18103, 18333 and 18336.

SPECIFICATIONS

Form: brown liquid
Specific Gravity: 1.20 ± (0.02) kg/dm^3 a 20^0 C.
pH: 7(+/-1)
Freezing Point: -2^0 C approx.
Chloride content: nil

PROPERTIES

FRESH CONCRETRE

Thanks to its dispersing action on the cement and other fine particles contained in concrete, ***Super Flow*** is used to produce flowing concretes.
When concrete composition has been correctly determined, there is no segregation.
Conversely, high water reductions can be obtained at equal workability.

HARDENED CONCRETES

The mechanical strengths of flowing and primary concretes are not changed as a result of using ***Super Flow***.
Increased mechanical strengths: increases of over 30% can be obtained when water is reduced at equal workability.

CEMENT SAVINGS

The physico-chemical properties of ***Super Flow*** allows he user to optimize the cement content when a specified mechanical strength is requested.

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DIRECTIONS FOR USE

▪ **DOSAGE**

Site trails should be conducted to determine the best dosage for the purpose under site conditions.

However, as a guide, the rate of addition is in the range of 0.8 - 1.2 liter/100kg of Cement.

▪ **Other Parameters for Use**

The composition of the concrete to be fluidified has to be established carefully; the grain size range must contain more fines than in the standards concretes and be of the concrete type.
Super Flow can be used with other Protex admixtures when secondary effects are desired, (set acceleration or retardation, water proofing, air entraining, stabilization of slump, etc.…).

PACKAGING

1000 liter bulks.

STORAGE

The quality is guaranteed for 18 months from the manufacturing date, provided the product is kept sealed in its original packaging.
The storage temperature should exceed 0^0 C.

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▪TECHNICAL ASSISTANCE

Our company can, when requested by one of our representatives, provide technical consulting and on-site assistance More technical data and guidance can be given on request.

Information contained in this document is given to the best of our knowledge and based on extensive testing. In no event can it be considered as a warranty, involving our liability in case of misapplication. A trial before application will ensure that the product conforms to the required conditions for use.
Chloride: Nil means no chloride has been introduced in the product and the chloride content in inferior to 0.1%. Our specialists will assist in solving any difficulties encountered by the user.

Precautions

Health and Safety instructions

Super Flow is non-toxic. Any splashes on the skin should be washed immediately with water. Splashes on the eyes should be washed immediately with water and medical advice .should be sought

Fire

Super Flow is nonflammable.

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MATERIAL SAFETY DATA SHEET

Section 1: Product Identification

Name: **Superflow**

HMIS Codes: **Health: 1** **Fire: 0** **Reactivity: 0**

Emergency Telephone Number: +972 5022 63563

Information Contact Number: +972 5022 63563

Section 2: Hazards

HARMFUL The main risk to health from this product is due to the residual chemical content. May cause damage to mouth, throat and stomach if ingested. May cause irritation and damage to eyes, and irritation to skin on prolonged contact. May cause irritation to nose and throat on inhalation of mists. Mixing with acids may generate odour which may aggravate asthma and other breathings complaints.

Section 3: Precautionary Measures and Handling Procedures

Precautionary Measures: Do not smoke or consume food or beverage in the workplace. Wash hands before eating, drinking, or smoking and after handling. Change contaminated clothing before leaving work premises.

Handling Procedures: Should be handled in ways to minimize generation of vapour and mists, and to prevent spills.

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Section 4: Personal Protective Equipment and Ventilation (Routine Handling)

Personal Protective Equipment:

Eye Protection: Use safety glasses and/or other protective eyewear as specified by a safety professional where risk of eye injury is present. When loading or unloading tanker, a face shield should be worn.

Skin Protection: Long-sleeved work clothing (e.g. lab coat) should be worn when working with this material. Employees should also wear impervious rubber gloves. Exposed skin area should be washed thoroughly after contact.

Respiratory Protection: Under normal open air conditions no protection is required. If misting is possible and engineering controls are not feasible or sufficient use a respirator which protects against dust and mists in accordance with manufacturer instructions and use limitations.

Ventilation: Ventilation should be adequate to maintain vapor and mist levels below harmful limits. The sharp odour of sulphur dioxide may be generated from this liquor if acidified (from the residual sulphite content). If any sharp odour is perceptible then the use of a sulphur dioxide / acid gas respirator is recommended.

Section 5: Emergency Procedures (First Aid) and Acute Health Effects

Eyes:

Effect: Direct contact may cause redness and irritation.

First Aid: Immediately flush eyes with large amounts of water for at least 15 minutes. Seek immediate medical attention.

Skin:

Effect: Direct prolonged contact may be irritating to the skin and produce itching, burning, and redness.

First Aid: Remove contaminated clothing immediately. Wash off affected area thoroughly with lots of water. If irritation or other symptoms develop, seek medical attention.

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Inhalation: **Effect:** Exposure to mists may cause irritation to the nose and throat.

First Aid: Remove from exposure to fresh air. If symptoms persist seek medical attention.

Ingestion: **Effect:** Not likely to occur under normal use. May cause damage to mouth, throat and stomach if ingested, although a specific toxic effect is not expected.

First Aid: Do not induce vomiting. Rinse mouth with water, and then drink a large amount of water. Seek immediate medical attention.

Section 6: Physical Characteristics

Appearance:	Red to brown liquid
Odour:	None to mild
Boiling Point:	>100°C

The following values are typical of the product

Total Solids:	43 %
Density:	1.9 g/ml @ 20°C
Viscosity:	400 mPas @ 20°C
pH:	6.8
Insoluble Components:	ca 0.5% of solution
Ash Content:	36% on dry solids (2h/850°C)
Reducing Substances:	2% of dry solids
Sulphur:	5.2% of dry solids
Sodium:	13% of dry solids

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Section 7: Fire, Explosion, and Reactivity Hazards

Fire and Explosion Hazards

Signal Word: NONE

Hazard Classification: Combustible material once water has evaporated.

Flash Point (Method): None below 100°C

Auto Ignition Temperature: None below 100°C

Flammable Limits: Not Applicable on liquid sample

Extinguishing Media: Determined by surrounding fire

Fire Fighting Personal Protective Equipment: Determined by surrounding fire

Special Procedures: Determined by surrounding fire

Reactivity Hazards

Stable: Yes **Hazardous**

Polymerisation: Will not occur **Neutralisation:**

None required **Decomposition Products:** Normal

combustion gases

Conditions to Avoid: None expected in normal use

Chemical Incompatibility: Contact with acids should be avoided due to possible release of small amounts of sulphur dioxide gas. Note that significant amounts of acid will be required for this to occur.

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Section 8: Health Hazards and Toxicity Data

Signal Word: HARMFUL

General Health Hazards: Contact with eyes, skin and respiratory tract may be harmful.

Eyes: Direct contact may cause redness and irritation.

Skin: Direct prolonged contact may be irritating to the skin and produce itching, burning, and redness.

Inhalation: Exposure to mists may cause irritation to the nose and throat

Ingestion: Not likely to occur under normal use. May cause serious damage to mouth, throat and stomach if ingested, although a specific toxic effect is not expected.

None of the components are listed as potential carcinogens.
None of the components are considered toxic.

Section 9: Spill and Leak Procedures

Spillage Action: Ensure adequate ventilation. Contain spill by erecting soil dams. Pump spilled liquid to containers for disposal. Wash down area with water once spill has been collected. Small spills: collect material and place into containers for later disposal. Large spills: collect material for reclamation or for disposal in sealed containers. Spills onto dirt roads or soil will result in harder soil due to binding action of Lignosulphonates.

Protective Equipment: Impervious gloves and shoes, adequate ventilation, respirator if required. Additional protective equipment (e.g. chemical suits) should be considered depending on the size of the spill.

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Section 10: Disposal Procedures

Disposal Procedures: Dispose according to local regulations. For small volumes (less than 100 litres such as samples) disposal to the municipal sewers with massive dilution should be acceptable. For larger volumes arrange for return to Protex for reprocessing.

Section 11: Ecological Procedures

Ecological Hazards: A large spill into a natural water system is expected to cause acute short term toxicity to aquatic life due to depletion of dissolved oxygen levels in the water. Once sufficient natural dilution has occurred no long term effects are expected. The main organic component will tend to bind to soil particles, and will naturally decompose over time are used commercially as soil binders for dirt roads). The residual chemical content will not cause toxic contamination of ground water.

Toxicity Test Data: Non-toxic at 100% for Daphnia (water flea) and Poecilla (guppy fish)

Section 12: Composition

Component %	**on Dry Solids**
Sulphonated lignins and other organic compounds	40 - 43
Sugars	< 1
Sodium Sulphite	< 5
Sodium Carbonate / bicarbonate	< 5
Water insoluble matter	ca 0.5%
Water	balance

Section 13: Additional Comments

The following label hazard ratings are recommended:

NFPA	**HMIS**
Fire 0	Flammability 0
Health 1	Health 1
Reactivity 0	Reactivity 0
Specific Hazard None	

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Section 14: Regulatory Information

Transportation: Not regulated as a hazardous material by the US Department of Transportation.

Section 15: Exposure Limits

No exposure limits have been specifically investigated for this product. The primary risks would be associated with skin exposure, inhalation of mists and ingestion. Acute toxicity is not expected on skin exposure. Provided the product is rinsed off the skin promptly after exposure no long term effects are expected.

Abbreviations:

N/A Not Applicable