

# Technical Data Sheet



Version2.0  
Date: 15/12/2021

## FDN-A

### SODIUM NAPHTHALENE SULPHONATE FORMALDEHYDE

#### ▲ Properties, Features & Characteristics:

1. The main ingredient of this product is  $\beta$ -naphthalene sulfonate formaldehyde condensate. It is a high-purity product with stable physical and chemical properties.
2. Appearance: light brown powder & dark brown liquid. The sodium sulfate content is within 5% and almost no chloride exists.
3. The water reduction of this product is around 21% and about 12-20% of cement can be reserved at the addition rate of 0.75% (for powder) by the total weight of cementing materials.
4. The product is non-toxic, odorless, non-flammable and non-corrosive to steel bars.
5. The product has the properties of high dispersion, low air content, non-air-entraining, high-range water reducing and early-strength improving. It is widely used in pre-cast & ready-mixed concrete, armored concrete and pre-stressed reinforced concrete for large construction projects such as dam and port construction, road building and dwelling house erection etc.
6. Low chloride feature makes it impossible to corrode steel bars underlying concrete. The suitability of the material has been proved by its usage on reinforced and pre-stressed concrete. It is in particular suitable to improve the fluidity of the concrete and increase the durability such as impermeability, carbonation resistance and frost resistance. Therefore it improves the workability of the concrete and makes the concrete easy for pumping and compacting. It can be applied to national key projects bearing good durability and long-term stability.
7. It is compatible with Portland cement, normal Portland cement, Portland slag cement, fly-ash cement and Portland Pozzolanic cement etc. And it is also compatible with other admixtures, such as air-entraining agent, retarder.
8. The suitable temperature for application of this product ranges from  $-5^{\circ}\text{C}$  to  $+45^{\circ}\text{C}$ .

#### ▲ Homogeneity index:

Test items	FDN-A type powder targets
Moisture content (%)	8 max
Solid content (%)	92 min
Fineness (%)	0.315mm Sieve residue<0.50
Density (g/ml)	——
PH value of 10g / L	7~9
Sodium sulfate content (%)	$\leq 5$
Chloride ion content (%)	$\leq 0.1$

Total alkali (%)	≤10
Insoluble substance (%)	≤0.3
Fluidity of cement paste (mm)	195~260
Appearance	Light brown powder

▲ Technical performance indicators (reference value):

Test items		GB8076-2008 Indicators	Measured value	Test items		GB8076-2008 Indicators	Measured value
Water reduction (%)		≥15	21	Ratio of Compressive strength (%)	1d	≥140	170
Water penetration (%)		≤90	80		3d	≥130	160
Air content (%)		≤3.0	2.0		7d	≥125	145
Temporal Distribution for setting (min)	Initial setting time	-90~+120	-90 ~ +120		28d	≥120	135
	Terminal setting time			Ratio of shrinkage (%)	28d	≤135	135
Corrosion to steel bars		None	None				
Note: Standard Blend Dosage:0.75% for powder (as cement amount);1.75%for liquid(as cement amount)							

▲ Usage:

1. The suitable dosage for powder ranges from 0.5 % to 1.2% in line with strength grade and scope of applications. The recommended blend dosage for powder is 0.75% by the total weight of cementitious materials. users can determine the optimal dosage according to the adaptability of the product and cement.
2. The powdery product can be mixed previously with cementitious materials or dissolved beforehand into liquid state. Do not add it directly into wet aggregate.
3. This product is non-toxic, non-corrosive, but inedible. When it contacts with eyes or skin, the affected area shall be immediately rinsed with plenty of water for minutes. Consult physician if irritation persists.
4. When using the powdery product, the user should wear face masks, gloves and other protective products.
5. The product is valid for one year. If it exceeds the validity, it must be tested before deciding to continue to use it or not.

▲ Packing & Storage:

The powdery product is packed in the waterproofing woven bag with plastic liner and the net weight is 25Kg or 40KG per bag or 650MT per big bag .It doesn't degenerate within its shelf life. The powdery product should be stored in dry and ventilated warehouse. Pay attention not to stave the bag and keep waterproofing during the storage and transportation. If it is affected with damp and agglomeration, it can be dissolved into liquid state or crushed into powder before using it and there is no influence on the performances.