Nasaco International Limited

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PRODUCT DATA SHEET

DOWFROTH* 400

DOWFROTH 400 flotation frother is a polypropylene glycol It is a strong frother used in a variety of applications, particularly where the ore is difficult to float and a frother blend may be required. It retains the selectivity inherent in synthetic frothers.

DOWFROTH 400 is recommended in situations where a stronger frother is required, it is used in a wide range of sulphide and industrial mineral flotation applications. Although most commonly used in alkaline flotation, DOWFROTH 400 is being used in both acid and alkaline flotation systems from pH 3.5 to pH 12.3

DOWFROTH 400 is water soluble and can be diluted to facilitate dosage in plants requiring a high degree of control of low frother dose. The product is stable under normal storage conditions.

PHYSICAL PROPERTIES

Flash Point	168°C	(Setaflash)
Appearance	Clear liquid	
Odour	Slight	
Specific Gravity	1.007	(25/25°C)
Water Solubility	Completely Miscible	
Freezing Point	-45°C	
Viscosity	31mm²/s (cSt)	(37°C)

Safety and Handling

Nasaco International Limited encourages its customers to use their products in ways which promote safe handling and good industrial practise. Before handling this product, ALWAYS carefully read and understand the instructions and hazard warnings on the container label. Further information may be obtained from the Material Safety Data Sheet for DOWFROTH 400.

Normal safe handling will not result in health or industrial hygiene hazard. If DOWFROTH 400 comes into contact with the eye it may cause moderate eye irritation and corneal injury. The following guidelines should be followed:

- Wear Chemical Workers goggles, clean body covering clothing and rubber gloves when handling DOWFROTH 400
- Contaminated clothing should be thoroughly washed before re-use
- If eye contact occurs the eyes should be flushed with water for 15 minutes and medical advice sought.

Application

The three variables in the application of DOWFROTH 400 are dosage, point of addition and frequency of addition.

Dosage rates of frother vary from operation to operation, they are largely dependent of ore type, grind size and water chemistry. Whilst dosages vary from 5 to 50 g/t, normal rates are from 5 - 20g/t.

Because of the hydrophyllic nature of DOWFROTH 400, the addition of the frother at the head of the flotation circuit without preconditioning is normally sufficient for most operations. In some cases, stage addition of frother can lead to improved economics by reducing overall frother dosage, often addition at the head of the roughers and in the scavengers is sufficient. Testwork will define the optimum.

The chemical nature of DOWFROTH 400 means that is best suited to operations with a coarser particle size in flotation. It is a selective frother and will tend to give improved concentrate grades. In plants where a wide range of particle sizes exists, consideration should be given to the blending

of frothers, combining a 'fine' and 'coarse' particle frother can lead to better metallurgical performance.

Protective Clothing

Personnel handling chemicals should wear clean body covering clothing, gloves and chemical workers goggles.

Contamination incidental to normal handling is unlikely to occur, if however skin or eye contact does occur, the following first aid guidelines should be followed.

First Aid

Skin - If skin contact occurs, wash the effected area with plenty of water and a neutral soap for a minimum of five minutes.

Eye - If eye contact occurs, wash with plenty of clean water for a minimum of fifteen minutes, holding the eye open. Medical advice should be sought.

Ingestion - In the case of ingestion, induce vomiting and immediately seek medical attention.

Storage and Handling

Recommended materials of construction for storage and distribution systems of DOWFROTH 400 include: Black iron, mild and stainless steel, brass and copper. DOWFROTH 400 has a shelf life of at least three years, the low freezing point allows outside storage - out of direct sunlight.

Extensive evaluation has shown that DOWFROTH frothers are compatible with various types of distribution systems.

DOWFROTH may be diluted before addition to aid in the control of dosage rates.

Toxicity and Environmental Impact

DOWFROTH frothers exist at low concentrations in flotation cells. A majority of the frother is present in the concentrate and is incinerated in smelting operations. The remainder is usually transferred to the tailings pond or recycled.

The LC_{50} for Fathead Minnow is > 100 mg/l. The product is regarded as Practically non-toxic.

The recommended method of disposal is by burning under controlled conditions. Customers are advised to check with local, state or national legislation governing disposal of waste material.

Fire

In the case of fire, types A and B extinguishers should be used.

Packaging and Shipping

DOWFROTH 400 is packed in 212 liter mild steel drums or bulk containers. Net and gross weights are:

Net Weight: 210kg
Gross Weight: 228kg

DOWFROTH 400E is not classified according to the Commission of the European Communities (Directive 67/548/EEC)

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