



# High Expansion<sup>®</sup>

## 1-1/2%

High Expansion  
Foam Concentrate  
NFC720



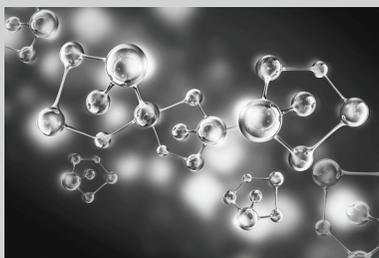
### Assurance

*Firefighting and environmental performance you can rely on*

National Foam prides itself on the open and honest way in which we conduct our business throughout the world. Our foam concentrates are an extension of our ethical beliefs and we pride ourselves in being the responsible foam manufacturer, balancing high performance with minimal environmental impact.

### Fluorine Free Formulations

High Expansion is a superior quality synthetic foam concentrate. This unique formulation is free from fluorosurfactants and is a blend of high activity foaming agents formulated to produce an effective firefighting foam concentrate. When minimizing environmental persistence is paramount, National Foam's commitment and long track record of formulating specialty foam concentrates for minimal environmental impact and maximum performance offers Assurance.



- ✔ Stable, extremely long lasting, uniform bubble structure.
- ✔ Suitable for use with fresh or sea water.
- ✔ Compatible with standard proportioning equipment.
- ✔ Suitable for use with foam compatible dry powder extinguishing agents.

National Foam High Expansion Foam Concentrate is a superior quality synthetic foam concentrate used at 1-1/2% concentration for extinguishing fires where total flooding application is desired. High expansion foam effects extinguishment in two ways. Total flooding of the involved area limits the amount of oxygen required to support free combustion, and provides a slow continuous release of foam solution for cooling and penetration.

NF High Expansion Foam is a low energy foaming agent, and although designed for use with high expansion equipment, it can be used in both air-aspirating and non air-aspirating foam making devices. The special surface active agents in NF High Expansion Foam concentrate give the foam the ability to drain very slowly when used with high expansion generators. This gives the finished foam the ability to travel long distances and retain water to provide effective fire fighting capabilities.

### Applications

NF High Expansion Foam is suitable for use in combating fires in buildings, process areas, warehouses, aircraft hangar systems, or anywhere total flooding is desired. High Expansion Foam systems can be used for protection of LNG storage areas by quickly blanketing the flammable liquid surface, and helping to control vapor release.

High Expansion is also useful as a wetting agent in combating Class A fires. Although developed for use in high expansion foam generating equipment, NF High Expansion Foam can be used in both medium and low expansion foam equipment. Medium expansion foam is particularly effective for vapor suppression applications.

### Typical Physical Properties

|                                     |             |
|-------------------------------------|-------------|
| Appearance.....                     | Pale Yellow |
| Specific Gravity at 77°F(25°C)..... | 0.99        |
| pH.....                             | 6.9         |
| Viscosity at 77°F (25°C).....       | 11 cST      |
| Min Usable Temperature.....         | 35°F(2°C)   |
| Max Usable Temperature.....         | 120°F(49°C) |
| Freeze Point.....                   | 23°F (-5°C) |

### Storage and Handling

NF High Expansion is ideally stored in its original shipping container or in tanks or other containers that have been designed for such foam storage. Recommended

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construction materials are stainless steel (Type 304L or 316), high-density cross-linked polyethylene, or reinforced fiberglass polyester (isophthalic polyester resin) with a vinyl ester resin internal layer coating (50-100 mils).

Foam concentrates are subject to evaporation, which accelerates when the product is exposed to air. Storage tanks should be sealed and fitted with a pressure vacuum vent to prevent free exchange of air. The recommended storage environment is within the UL-listed temperature range of 35°F to 120°F (2°C to 49°C).

NF High Expansion Foam is freeze/thaw stable. Should the product freeze during shipment or storage, no performance loss is expected upon thawing.

It is recommended that NF High Expansion Foam not be mixed with any other type of foam concentrate in long-term storage. Such mixing could lead to chemical changes in the product and a possible reduction in or loss of its firefighting capability. Most expanded foams are compatible for side-by-side application during an incident.

### Shelf Life, Inspection, and Testing

The shelf life of any foam concentrate is maximized by proper storage conditions and maintenance. Factors affecting shelf life are wide temperature changes, extreme high or low temperatures, evaporation, dilution, and contamination by foreign materials. Properly stored National Foam High Expansion foam concentrates have been tested and shown no significant loss of firefighting performance, even after 15 years.

Annual testing of all firefighting foams is recommended by the National Fire Protection Association (NFPA). National Foam provides a Technical Service Program to conduct such tests. Refer to National Foam product data sheet NFC960 for further details on Technical Service Program, or contact your National Foam representative.

### Environmental and Toxicological Information

High Expansion is biodegradable. However, as with any substance, care should be taken to prevent discharge from entering ground water, surface

water, or storm drains. With advance notice, High Expansion can be treated by local biological sewage treatment systems. Since facilities vary widely by location, disposal should be made in accordance with federal, state and local regulations. Refer to National Foam Technical Bulletin NFB110 for further information.

The Biological Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) of NF High Expansion Foam is:

BOD<sub>20</sub> ..... 722,000 mg/kg  
 COD ..... 1,320,000 mg/kg

High Expansion has not been tested for acute oral toxicity, primary eye, or primary skin irritation.

Repeated skin contact will remove oils from the skin and cause dryness. High Expansion is a primary eye irritant, and contact with the eyes should be avoided. Users are advised to wear protective equipment. If High Expansion enters the eyes, flush them well with water and seek immediate medical attention. For further details, see the High Expansion Safety Data Sheet NMS720.

### Ordering Information

| Container                                       | Shipping Weight          | Shipping Dimensions                     | Part Number |
|---|--------------------------|---|-------------|
| 5-Gallon Pails (19 liters)                      | 44 lb. (20.0 kg)         | 1.13 cu. ft. <sup>3</sup> (0.032 cu. m) | 1120-2340-6 |
| 55-Gallon Drums (208 liters)                    | 479 lb. (217.3 kg)       | 11.1 cu. ft. <sup>3</sup> (0.314 cu. m) | 1120-2481-6 |
| 275-Gallon IBC Reusable Tote Tank (1041 liters) | 2418 lb. (1096.8 kg)     | 48.2 cu. ft. <sup>3</sup> (1.365 cu. m) | 1120-2725-6 |
| 330-Gallon IBC Reusable Tote Tank (1249 liters) | 2894 lb. (1312.7 kg)     | 55.8 cu. ft. <sup>3</sup> (1.580 cu. m) | 1120-2033-6 |
| Bulk  | 8.3 lb./gal. (0.99 kg/l) |   | 1120-2001-6 |

### National Foam

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National Foam operates a continuous programme of product development. The right is therefore reserved to modify any specification without prior notice and National Foam should be contacted to ensure that the current issues of all technical data sheets are used.  
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