SAFETY DATA SHEET – NMS#722
HI-EX® 2%
High Expansion Foam Concentrate

1. IDENTIFICATION

Product Name	HI-EX 2% High Expansion Foam Concentrate
Recommended use of the chemical and restrictions on use	
Identified uses	Firefighting Foam Concentrate
Restrictions on Use	See Section 15
Company Identification	National Foam 350 East Union Street West Chester, PA 19382
Customer Information Number	(610) 363-1400
Emergency Telephone Number	Infotrac at (800) 535-5053
Issue Date	December 8, 2016
Supersedes Date	January 29, 2016

Safety Data Sheet prepared in accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200) and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

2. HAZARD IDENTIFICATION

Hazard Classification
Eye Damage/Irritation - Category 1
Skin Corrosion/Irritation - Category 2
Flammable Liquids - Category 4
Acute Hazards to the Aquatic Environment - Category 2 (OSHA non-mandatory)

Label Elements
Hazard Symbols

Signal Word: Danger

Hazard Statements
Causes serious eye damage.
Causes skin irritation.
Combustible liquid.
Toxic to aquatic life.

Precautionary Statements

Prevention
Wash hands thoroughly after handling.
Wear protective gloves, eye protection and face protection.
Keep away from flames and hot surfaces. No smoking.
Avoid release to the environment.

Response
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.
If on skin: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
In case of fire: Use extinguishing measures that are appropriate to local circumstances.

2. HAZARD IDENTIFICATION

Storage
Store in a well-ventilated place.
Keep cool.
Disposal
Dispose of contents/container in accordance with local regulations.

Other Hazards
None identified.

Specific Concentration Limits
The values listed below represent the percentages of ingredients of unknown toxicity.

Acute oral toxicity	15 - 25%
Acute dermal toxicity	20 - 30%
Acute inhalation toxicity	45 - 55
Acute aquatic toxicity	40 - 50%

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CAS Number	Concentration
Water	7732-18-5	30 - 40%
Propylene glycol n-Propyl Ether	1569-01-3	15 - 25%
Alkyl Ether Sulfate	Proprietary	5 - 15%
Surfactant	Proprietary	1 - 10%
Synthetic detergent	Proprietary	1 - 10%
Alcohol	Proprietary	1 - 10%
Chelating Agent	Proprietary	1 - 5%

4. FIRST- AID MEASURES

Description of necessary first-aid measures
Eyes
Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.
Skin
Wash skin thoroughly with soap and water. Obtain medical attention if irritation persists.
Ingestion
Dilute by drinking large quantities of water and obtain medical attention.
Inhalation
Move victim to fresh air. Obtain medical attention immediately for any breathing difficulty.

Most important symptoms/effects, acute and delayed
Aside from the information found under Description of necessary first aid measures (above) and Indication of immediate medical attention and special treatment needed, no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed
Notes to Physicians
Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Suitable Extinguishing Media
This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a fire. Use extinguishing agent appropriate to other materials involved.

Specific hazards arising from the chemical
This product will foam when mixed with water.

Special Protective Actions for Fire-Fighters
Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing. Eliminate all sources of ignition. Use non-sparking tools for flammable materials. Prevent skin and eye contact.

Environmental Precautions
Prevent large quantities of the material from entering drains or watercourses.

Methods and materials for containment and cleaning up
Contain and absorb using appropriate inert material and transfer into suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Wear appropriate protective clothing. Prevent skin and eye contact.

Conditions for safe storage
Store in original containers between 35°F and 120°F (2°C and 49°C). Store away from sources of heat or ignition. Storage area should be: cool - dry - well ventilated - away from incompatible materials - out of direct sunlight - away from sources of ignition (heat, sparks, flames, and pilot lights)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist.

Appropriate engineering controls
Use with adequate ventilation. If this product is used in a pressurized system, there should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

Individual protection measures
Respiratory Protection
Wear respiratory protection if there is a risk of exposure. A NIOSH approved full face respirator may be worn. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Skin Protection
Gloves
Eye/Face Protection
Chemical goggles or safety glasses with side shields.
Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State	Liquid
Color	Colorless
Odor	Slight
Odor Threshold	No data available
pH	7.2
Specific Gravity	1.02
Boiling Range/Point (°C/F)	No data available
Melting Point (°C/F)	No data available
Flash Point (°C/F)	65.5/150
Vapor Pressure	No data available
Evaporation Rate (BuAc=1)	No data available
Solubility in Water	Soluble
Vapor Density (Air = 1)	Not applicable
VOC (%)	No data available
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Auto-ignition Temperature	Not applicable
Decomposition Temperature	No data available
Upper explosive limit	Not applicable
Lower explosive limit	Not applicable
Flammability (solid, gas)	Not applicable

10. STABILITY AND REACTIVITY

Reactivity
No data available.

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

Conditions to Avoid
Contact with incompatible materials

Incompatible Materials
Water reactive materials – burning metals – electrically energized equipment
Hazardous Decomposition Products
Oxides of carbon – sulfur oxides – sodium oxides – alkyl mercaptans - sulfides

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Propylene glycol n-Propyl Ether
Oral LD50 rat 2800 - 3000 mg/kg
Dermal LD50 rabbit 3550 mg/kg
Chelating Agent
Oral LD50 rat, female 1780 mg/kg
Dermal LD50 rabbit >5000 mg/kg

Specific Target Organ Toxicity (STOT) – single exposure
No relevant studies identified.

Specific Target Organ Toxicity (STOT) – repeat exposure
No relevant studies identified.

Serious Eye damage/Irritation
Surfactant: Severe eye irritant (based on similar material)
Chelating Agent: Irritating to eyes in rabbit study.
Alkyl ether sulfate: Causes serious eye damage. (70% solution)
Propylene glycol n-Propyl Ether: Causes serious eye irritation.
Synthetic detergent: Severely irritating to eyes in rabbit study.

Skin Corrosion/Irritation
Alkyl ether sulfate: Causes skin irritation.

Respiratory or Skin Sensitization
Available data indicates this product is not expected to cause skin sensitization.

Carcinogenicity
Not considered carcinogenic by NTP, IARC, and OSHA.

Germ Cell Mutagenicity
Available data indicates this product is is not expected to be mutagenic.

Reproductive Toxicity
No relevant studies identified.

Aspiration Hazard
Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Alcohol
LC50 fathead minnow 1.01 mg/l 96hr (based on similar substance)
EC50 daphnia magna 0.7665 mg/l 48 hr (based on similar substance)
EC50 green algae 0.66 mg/l 75hr (based on similar substance)

Mobility in soil
No relevant studies identified.

12. ECOLOGICAL INFORMATION

Persistence/Degradability
Concentrate:
BOD_5: 535,000 mg/l
COD: 1,370,000 mg/l
2% Solution
BOD_5: 9050 mg/l
COD: 24, 200 mg/l

Bioaccumulative Potential
No relevant studies identified.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Disposal Methods
This product, as sold, is not a RCRA-listed waste or hazardous waste as characterized by 40 CFR 261. However, state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Therefore, applicable local and state regulatory agencies should be contacted regarding disposal of waste foam concentrate or foam/foam solution.
Concentrate
Prevent foam concentrate from entering ground water, surface water or storm drains. Small quantities of foam concentrate may be collected on absorbents which can then be disposed of. Disposal should be made in accordance with local, state and federal regulations.
Foam/Foam Solution
Prevent foam/foam solution from entering ground water, surface water or storm drains. Small quantities of foam solution may be collected on absorbents which can then be disposed of. Disposal should be made in accordance with local, state and federal regulations.
NOTE: Please consult National Foam for additional information regarding the disposal of foam concentrates and foam solutions.

14. TRANSPORT INFORMATION

Shipping Information

Shipping Description	Fire Extinguisher Charges or Compounds N.O.I., Class 70
National Motor Freight Code	69160 Sub 0

This information is not intended to convey all transportation classifications that may apply to this product. Classifications may vary by container volume and by regional regulations. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules when transporting this material.

15. REGULATORY INFORMATION

United States TSCA Inventory
All components of this product are in compliance or are exempt from inventory listing requirements of the US Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

15. REGULATORY INFORMATION

Canada DSL Inventory
All ingredients in this product have not been verified for listing on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL).

SARA Title III Sect. 311/312 Categorization
Immediate (Acute) Health Hazard, Fire Hazard

SARA Title III Sect. 313
This product does not contain any chemicals that are listed in Section 313 at or above de minimis concentrations.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
None

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

Legend
ACGIH: American Conference of Governmental Industrial Hygienists
BOD_5:Biochemical Oxygen Demand (5 day)
CAS#: Chemical Abstracts Service Number
COD: Chemical Oxygen Demand
EC50: Effect Concentration 50%
IARC: International Agency for Research on Cancer
LC50: Lethal Concentration 50%
LD50: Lethal Dose 50%
N/A: Denotes no applicable information found or available
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
RQ: Reportable Quantity
STEL: Short Term Exposure Limit
N/A: Denotes no applicable information found or available
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
RQ: Reportable Quantity
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TSCA: Toxic Substance Control Act

Revision Date: December 8, 2016
Replaces: January 29, 2016
Changes made: Update to Section 13.

Information Source and References
This SDS is prepared by Hazard Communication Specialists based on information provided by internal company references.

16. OTHER INFORMATION

Prepared By: EnviroNet LLC.

HI-EX is a trademark of Angus International.

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