SAFETY DATA SHEET – NMS#515
Avio^{F3} Green KHC 3%
Fluorine Free Foam Concentrate

1. IDENTIFICATION

Product Name	Avio^{F3} Green KHC 3% Fluorine Free Foam Concentrate
Recommended use of the chemical and restrictions on use	
Identified uses	Firefighting Foam Concentrate
Restrictions on Use	See product data sheet
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	February 21, 2020
Supersedes Date	May 28, 2019

Safety Data Sheet prepared in accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200, the Canadian Hazardous Products Regulations (HPR) 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

Label Elements
Hazard Symbols

Signal Word: Danger

Hazard Statements
Causes serious eye damage.
Causes skin irritation.

Precautionary Statements

Prevention
Wash hands thoroughly after handling.
Wear protective gloves, eye protection and face protection.

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.

Storage
None

Disposal
Dispose of contents/container in accordance with local regulation.

Other Hazards
None identified.

2. HAZARD IDENTIFICATION

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

Acute oral toxicity	<5%
Acute dermal toxicity	5 - 15%
Acute inhalation toxicity	40 - 50%
Acute aquatic toxicity	10 - 20%

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CAS Number	Concentration*
Diethylene Glycol Monobutyl Ether	112-34-5	10 - 30%
Sodium Lauryl Sulfate	151-21-3	7 - 13%
Lauramine oxide	1643-20-5	7 - 13%
Dimethyltetradecylamine oxide	3332-27-2	1 - 5%

*Exact concentration withheld as trade secret.

4. FIRST- AID MEASURES

Description of necessary first-aid measures
Eyes
Immediately flood the eye with plenty of water for at least 20 minutes, holding the eye open. Obtain medical attention.
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. Do not induce vomiting.
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
None known

5. FIRE - FIGHTING MEASURES

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. Prevent skin and eye contact.

Environmental Precautions
Prevent foam concentrate or foam solution from entering ground water, surface water, or storm drains. Discharge and disposal of concentrate or foam solution should be made in accordance with federal, state, and local regulations.

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). Storage area should be: - cool - dry - well ventilated - under cover - out of direct sunlight

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist.
Diethylene Glycol Monobutyl Ether
ACGIH TLV: 10 ppm (67.5 mg/m^3), 8hr TWA, measured as inhalable fraction and vapor
Lauramine oxide
None established
Dimethyltetradecylamine oxide
None established
Sodium Lauryl Sulfate
None established

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
Chemical resistant 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	Characteristic
Odor Threshold	No data available
pH	8.5
Specific Gravity	1.0
Boiling Range/Point (°C/F)	No data available
Melting Point (°C/F)	No data available
Flash Point (°C/F)	>200°F
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 – alkali metals – oxidizing agents

Hazardous Decomposition Products
Oxides of carbon – sulfur oxides – nitrogen oxides – sodium oxides

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Diethylene Glycol Monobutyl Ether
Oral LD50 (rat) 3305 mg/kg
Dermal LD5 (rabbit) 2764 mg/kg
Lauramine oxide
Oral LD50 rat 1064 mg/kg
Dimethyltetradecylamine oxide
Oral LD50 rat >1500 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
Diethylene Glycol Monobutyl Ether: Causes serious eye irritation.
Lauramine oxide: Causes serious eye damage.
Dimethyltetradecylamine oxide: Causes skin irritation.
Sodium Lauryl Sulfate: Causes serious eye damage.

Skin Corrosion/Irritation
Lauramine oxide: Causes skin irritation.
Sodium Lauryl Sulfate: Causes skin irritation.
Dimethyltetradecylamine oxide: Causes skin irritation

Respiratory or Skin Sensitization
No relevant studies identified.

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

Germ Cell Mutagenicity
No relevant studies identified.

Reproductive Toxicity
No relevant studies identified.

Aspiration Hazard
Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Avio^{F3} Green KHC 3%
LC50 Fish (Fundulus heteroclitus), 96h, 77.1 mg/l
EC50 Daphnia magna, 48h, 30.7 mg/l
EC50 Daphnia magna, 24h, 130 mg/l
NOEC chronic fish (Fundulus heteroclitus) 50 mg/l
Sodium Lauryl Sulfate
EC50 Daphnia magna, 48h, 1.18 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity, cont.
Lauramine oxide
LC50 Fish, 96h, 31.8 mg/l
EC50 Daphnia magna, 48h, 3.9 mg/l
ErC50 Algae, 72h, 0.2 mg/l
Aquatic Chronic - Category 2, Toxic to aquatic life with long lasting effects (ECHA classification)

Mobility in soil
No relevant studies identified.

Persistence/Degradability
This product is readily biodegradable.
BOD: 0.56 g O_2/l (5 days)
COD: 0.76 g O_2/l
Biodegradation: 99% (28 days)

Bioaccumulative Potential
This product is not expected to bioaccumulate.

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 Angus Fire 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 with the inventory listing requirements of the US Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

Canada DSL Inventory
All ingredients in this product have been verified for listing on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL).

SARA Title III Sect. 311/312 Categorization
Skin irritation – Serious eye damage

SARA Title III Sect. 313
This product contains the following chemicals that are listed in Section 313 at or above de minimis concentrations: Diethylene glycol monobutyl ether

California Proposition 65

WARNING: This product can expose you to formaldehyde, which is known to the State of California to cause cancer, and methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov."

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
Diethylene Glycol Monobutyl Ether (112-34-5) 15% by weight maximum

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 3
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
ECHA: European Chemicals Agency
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

16. OTHER INFORMATION

Legend, cont.
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TSCA: Toxic Substance Control Act

Revision Date: February 21, 2020
Replaces: May 28, 2019
Changes made: Updates to sections 2, 8 and 12.

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

Prepared By: EnviroNet LLC.

The information and recommendations presented in this SDS are based on sources believed to be accurate. National Foam assumes no liability for the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of the material for their particular purposes. In particular, we make NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use or disposal of the material is in accordance with applicable Federal, State, and local laws and regulations.