

10.10 Army Duck Anti microbials and Mildew

# MATERIAL SAFETY DATA SHEET



FAB NAT DUCK  
MM0086  
MMI Textiles

StarChem LLC  
Product Safety & Regulatory Affairs  
10150 Greenville Highway  
Wellford, SC 29385  
USA

TRANSPORTATION EMERGENCY  
CALL CHEMTREC: (800) 424-9300

NON-TRANSPORTATION  
StarChem LLC Emergency : (864) 949-2162  
StarChem LLC Information : (866) 377-5269

## 1. Product and Company Identification

Product Name: MIGRASSIST NYL  
Material Number: 2660567  
Chemical Family: Textile auxiliary containing nonionic surfactant and isopropyl alcohol

## 2. Hazards Identification

**Emergency Overview**  
  
**CAUTION!** Color: Clear, Colorless Form: Liquid Odor: Mild.  
Combustible. May cause eye, skin, and respiratory tract irritation. May cause nausea or dizziness. Vapors or mist may be a fire and explosion hazard when exposed to high temperature or ignition. Closed container may forcibly rupture under extreme heat. Vapors may spread long distances and ignite.

### Potential Health Effects

Primary Routes of Entry: Skin Contact, Eye Contact, Ingestion, Inhalation  
Medical Conditions Aggravated by Exposure: Skin disorders, Respiratory disorders, Eye disorders

### HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

#### Inhalation

##### **Acute Inhalation**

For Product: **MIGRASSIST NYL**

May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.

For Component: **Tallow alkyl amines, Ethoxylated**

Inhalation is unlikely due to the low vapor pressure. If misted or handled at elevated temperatures, high concentrations may cause respiratory tract irritation.

For Component: **Nonylphenol Ethoxylate**

May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.

**For Component: Isopropanol**

May cause nervous system effects which can include symptoms of dizziness, incoordination, headache, numbness, and/or confusion.

**Chronic Inhalation**

**For Component: Isopropanol**

Chronic exposure to organic solvents has been associated with various neurotoxic effects including permanent brain and nervous system damage.

**Skin**

**Acute Skin**

**For Product: MIGRASSIST NYL**

May cause irritation with symptoms of reddening and itching.

**For Component: Tallow alkyl amines, Ethoxylated**

May cause irritation with symptoms of reddening and itching.

**For Component: Nonylphenol Ethoxylate**

Causes irritation with symptoms of reddening, itching, and swelling. Essentially non-toxic by skin absorption.

**For Component: Isopropanol**

Not expected to be irritating.

**Chronic Skin**

**For Component: Tallow alkyl amines, Ethoxylated**

Prolonged or repeated skin contact may cause dermatitis with symptoms of red, itchy, dry skin.

**For Component: Nonylphenol Ethoxylate**

Prolonged or repeated skin contact may cause dermatitis with symptoms of red, itchy, dry skin.

**For Component: Isopropanol**

Chronic exposure may cause symptoms similar to those described in chronic inhalation.

**Eye**

**Acute Eye**

**For Product: MIGRASSIST NYL**

May cause irritation with symptoms of reddening, tearing and stinging.

**For Component: Tallow alkyl amines, Ethoxylated**

Causes irritation with symptoms of reddening, tearing, stinging, and swelling. May cause corneal injury.

**For Component: Nonylphenol Ethoxylate**

Causes irritation with symptoms of reddening, tearing, stinging, and swelling.

**For Component: Isopropanol**

May cause irritation with symptoms of reddening, tearing and stinging.

**Ingestion**

**Acute Ingestion**

**For Product: MIGRASSIST NYL**

Not expected to be harmful if swallowed.

**For Component: Tallow alkyl amines, Ethoxylated**

Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea. Moderately toxic by ingestion.

**For Component: Nonylphenol Ethoxylate**

Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea.

**For Component: Isopropanol**

Not expected to be harmful if swallowed.

**Carcinogenicity:**

No Carcinogenic substances as defined by IARC, NTP and/or OSHA.

**3. Composition/Information on Ingredients**

**Hazardous Components**

<u>Weight %</u>	<u>Components</u>	<u>CAS-No.</u>
25 - 35%	Tallow alkyl amines, Ethoxylated	61791-26-2
10 - 20%	Nonylphenol Ethoxylate	9016-45-9
3 - 7%	Isopropanol	67-63-0

**4. First Aid Measures**

**Eye Contact**

In case of contact, flush eyes with plenty of lukewarm water. Get medical attention if irritation develops.

**Skin Contact**

In case of skin contact, wash affected areas with soap and water. Immediately remove contaminated clothing and shoes. Get medical attention if irritation develops.

**Inhalation**

If inhaled, remove to fresh air. Get medical attention if irritation develops.

**Ingestion**

If ingested, do not induce vomiting unless directed to do so by medical personnel. Get medical attention.

**5. Fire-Fighting Measures**

**Suitable Extinguishing Media:** All extinguishing media are suitable.

**Special Fire Fighting Procedures**

Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. Use cold water spray to cool fire-exposed containers to minimize risk of rupture.

**Unusual Fire/Explosion Hazards**

Combustible Liquid. Vapors or mist may be a fire and explosion hazards when exposed to high temperature or ignition. Toxic and irritating gases/fumes may be given off during burning or thermal decomposition.

## 6. Accidental release measures

### Spill and Leak Procedures

Cleanup personnel must use appropriate personal protective equipment. Cover spill with inert material (e. g., dry sand or earth) and collect for proper disposal. Remove all sources of ignition, including flames, heat, and sparks.

## 7. Handling and Storage

### Storage Period

Not Established

### Handling/Storage Precautions

Keep away from heat, sparks and open flames. Ground and bond containers and equipment before transferring to avoid static sparks. Avoid breathing dust, vapor, or mist. Avoid contact with skin or clothing. Avoid contact with eyes. Use only with adequate ventilation/personal protection. Wash thoroughly after handling. Keep container closed when not in use. Protect from freezing.

## 8. Exposure Controls / Personal Protection

### Isopropanol (67-63-0)

US. ACGIH Threshold Limit Values

Time Weighted Average (TWA): 200 ppm

US. ACGIH Threshold Limit Values

Short Term Exposure Limit (STEL): 400 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

PEL: 400 ppm, 980 mg/m<sup>3</sup>

US. ACGIH Threshold Limit Values

Hazard Designation: Group A4 Not classifiable as a human carcinogen.

### Industrial Hygiene/Ventilation Measures

General dilution and local exhaust as necessary to control airborne vapors, mists, dusts and thermal decomposition products below appropriate airborne concentration standards/guidelines.

### Respiratory Protection

In case of insufficient ventilation wear suitable respiratory equipment.

### Hand Protection

Permeation resistant gloves.

### Eye Protection

safety glasses with side-shields.

### Skin and body protection

Wear cloth work clothing including long pants and long-sleeved shirts.

### Additional Protective Measures

Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product. Emergency showers and eye wash stations should be available.

**9. Physical and chemical properties**

**Form:** Liquid  
**Color:** Clear, Colorless  
**Odor:** Mild  
**pH:** 8 - 9.5 @ 50 g/l  
**Freezing Point:** Not Established  
**Boiling Point/Range:** > 100 °C (> 212 °F)  
**Flash Point:** 45 °C (113.0 °F) (Pensky-Martens Closed Cup (ASTM D-93))  
**Vapor Pressure:** Not Established  
**Specific Gravity:** 1.03  
**Solubility in Water:** Soluble  
**VOC Content:** Approximately 9.48 % Tested by EPA Method 24  
**Viscosity, Dynamic:** < 600 cP

**10. Stability and Reactivity**

**Hazardous Reactions**  
Hazardous polymerization does not occur.

**Stability**  
Stable

**11. Toxicological Information**

**Toxicity Data for Tallow alkyl amines, Ethoxylated**

**Acute Oral Toxicity**  
LD50: > 500 - 3,000 mg/kg (Rat)

**Acute dermal toxicity**  
LD50: > 2,000 mg/kg

**Skin Irritation**  
rabbit, Draize, Moderately irritating

**Eye Irritation**  
rabbit, Draize, Moderately irritating

**Toxicity Data for Nonylphenol Ethoxylate**

**Acute Oral Toxicity**  
LD50: 3,310 mg/kg (Rat)

**Acute Inhalation Toxicity**  
LC50: > 200 mg/l, 1 hrs (Rat)

**Acute dermal toxicity**  
LD50: > 2,000 mg/kg (Rat)

**Skin Irritation**  
rabbit, Draize, Slightly irritating

**Eye Irritation**

rabbit, Draize, Severely irritating

**Sensitization**

dermal: non-sensitizer (Human, Patch Test)

**Mutagenicity**

Genetic Toxicity in Vitro:

DNA damage and repair: negative (other mammalian cell line)

HGPRT Assay: negative (other mammalian cell line)

**Toxicity Data for Isopropanol****Acute Oral Toxicity**

LD50: 4,396 - 5,500 mg/kg (Rat)

**Acute Inhalation Toxicity**

LC50: 72.6 mg/l, 4 hrs (Rat)

**Acute dermal toxicity**

LD50: 12,800 mg/kg (Rat)

**Skin Irritation**

rabbit, Non-irritating

**Eye Irritation**

rabbit, Draize, Moderately irritating

**Sensitization**

dermal: non-sensitizer (Guinea pig, Buehler)

**Repeated Dose Toxicity**

90 Days, inhalation: NOAEL: 1500 ppm, (Rat)

**Mutagenicity**

Genetic Toxicity in Vitro:

Ames: negative (Salmonella typhimurium, Metabolic Activation: with/without)

Genetic Toxicity in Vivo:

Micronucleus Assay: negative (mouse)

**Toxicity to Reproduction/Fertility**

Two generation study, oral, daily, (Rat) NOAEL (F1): 500 mg/kg, NOAEL (F2): 500 mg/kg,

**Developmental Toxicity/Teratogenicity**

Rat, inhalation, daily, NOAEL (teratogenicity): 8,575 mg/kg,

**12. Ecological Information****Ecological Data for MIGRASSIST NYL****Biological Oxygen Demand (BOD)**

20000 ppm

**Chemical Oxygen Demand (COD)**

1125147 ppm

**Ecological Data for Tallow alkyl amines, Ethoxylated****Biodegradation**

80.4 %, Exposure time: 28 Days

**Biological Oxygen Demand (BOD)**

91 mg/g

28 Days, 263 mg/g

**Chemical Oxygen Demand (COD)**

327 mg/g

**Acute and Prolonged Toxicity to Fish**

LC50: 1.7 mg/l (Rainbow (Donaldson) Trout (*Oncorhynchus mykiss*), 96 hrs)

**Acute Toxicity to Aquatic Invertebrates**

NOEC: 20 mg/l (*Ceriodaphnia* sp, 7 hrs)

**Ecological Data for Nonylphenol Ethoxylate****Biodegradation**

aerobic, 98 %, Exposure time: 30 Days

**Biological Oxygen Demand (BOD)**

5 Days, approximately 7 mg/g

28 Days, approximately 75 mg/g

**Chemical Oxygen Demand (COD)**

approximately 252 mg/g

**Theoretical Biological Oxygen Demand (ThBOD)**

approximately 117 mg/g

**Bioaccumulation**

Carp, < 1.4 BCF

**Acute and Prolonged Toxicity to Fish**

LC50: 29 mg/l (Fathead minnow (*Pimephales promelas*), 96 hrs)

**Acute Toxicity to Aquatic Invertebrates**

LC50: 170 mg/l (Water flea (*Daphnia magna*), 48 hrs)

**Toxicity to Aquatic Plants**

500 mg/l, End Point: growth (*Selenastrum capricornutum*), 3 hrs)

**13. Disposal considerations****Waste Disposal Method**

Waste disposal should be in accordance with existing federal, state and local environmental control laws.

**Empty Container Precautions**

Do not heat or cut container with electric or gas torch. Recondition or dispose of empty container in accordance with governmental regulations. Do not reuse empty container without proper cleaning. Label

precautions also apply to this container when empty.

#### 14. Transportation information

##### Land transport (DOT)

**Proper Shipping Name:** Combustible liquid, n.o.s. (contains Isopropanol)  
**Hazard Class or Division:** Combustible liquid  
**UN/NA Number:** NA1993  
**Packaging Group:** III  
**Hazard Label(s):** None

##### Sea transport (IMDG)

**Proper Shipping Name:** FLAMMABLE LIQUID, N.O.S. (contains Isopropanol)  
**Hazard Class or Division:** 3  
**UN-No:** UN1993  
**Packaging Group:** III  
**Hazard Label(s):** Flammable liquids

##### Air transport (ICAO/IATA)

**Proper Shipping Name:** Flammable liquid, n.o.s. (contains Isopropanol)  
**Hazard Class or Division:** 3  
**UN-No:** UN1993  
**Packaging Group:** III  
**Hazard Label(s):** Flammable liquids

##### Additional Transportation Information

49CFR: Applicable for domestic transportation by highway and rail, but not air or vessel. (See 49 CFR 173.150(F)(1)). If the quantity is in a non-bulk packaging (less than 119 gallons), this material ships as non-regulated unless the Combustible Liquid is a Hazardous Substance or a Hazardous Waste. (See 49 CFR 173.150(F)(2)).

#### 15. Regulatory Information

##### United States Federal Regulations

**OSHA Hazcom Standard Rating:** Hazardous  
**US. Toxic Substances Control Act:** Listed on the TSCA Inventory.  
**US. EPA CERCLA Hazardous Substances (40 CFR 302):**

##### Components

None

##### **SARA Section 311/312 Hazard Categories:**

Acute Health Hazard, Fire Hazard

**US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):**

##### Components

None

**US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III  
Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required:**

**Components**

None

**US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes  
and Appendix VIII Hazardous Constituents (40 CFR 261):**

When discarded in its purchased form, this product meets the criteria of ignitability, and should be managed as a hazardous waste (EPA Hazardous Waste Number D001). (40 CFR 261.20-24)

**State Right-To-Know Information**

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

**Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:**

<u>Weight %</u>	<u>Components</u>	<u>CAS-No.</u>
>=1%	Water	7732-18-5
25 - 35%	Tallow alkyl amines, Ethoxylated	61791-26-2
10 - 20%	Nonylphenol Ethoxylate	9016-45-9
>=1%	Glycol	CAS# is a trade secret
>=1%	Polyether Polyol	CAS# is a trade secret
3 - 7%	Isopropanol	67-63-0

**California Prop. 65:**

To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

**16. Other Information**

**NFPA 704M Rating**

<b>Health</b>	1
<b>Flammability</b>	2
<b>Reactivity</b>	0
<b>Other</b>	

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

**HMIS Rating**

<b>Health</b>	1
<b>Flammability</b>	2
<b>Physical Hazard</b>	0

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

\* = Chronic Health Hazard

StarChem LLC's method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by StarChem LLC as a customer service.

Contact Person: Product Safety Department  
Tele: (866) 377-5269  
MSDS Number: R305817

Version Date: 12/14/2006  
Report Version: 1.0

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