



## Safety Data Sheet

Prepared in accordance with the United States Hazard Communication Standard: 29 CFR 1910.1200 (2012) Revision date: 29-July-2018

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### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name: Antifoam AF Series (AF 11)  
Product code: AF-11  
Synonyms: Antifoam, Defoamer  
Recommended use: Gas treating applications (foam control in Amine treating units)

Restrictions on use: No information available.

Supplier:  
Amine Optimization Company (a Nexo Solutions company)  
25003 Pitkin Road, Suite A100  
The Woodlands, TX 77386  
United States  
Tel: 1-832-510-8191

Emergency Telephone Number: ChemTel at 1-800-255-3924

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### 2. HAZARDS IDENTIFICATION

**According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200**

#### Classification of the product

No need for classification according to GHS criteria for this product.

#### Label elements

Revision date: 10-July-2018

The product does not require a hazard warning label in accordance with GHS criteria

### **Hazards not otherwise classified**

#### Labeling of special preparations (GHS):

This surfactant complies with the biodegradability criteria as laid down in Regulation (EC) No. 648/2004 on detergents data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them at their direct request or at the request of a detergent manufacturer.

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### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

#### **According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200**

Under the referenced regulation, this product does not contain any components classified for health hazards above the relevant cutoff value.

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### **4. FIRST AID MEASURES**

#### **Description of first aid measures**

##### **General advice:**

Remove contaminated clothing

##### **Skin contact:**

Wash thoroughly with soap and water.

##### **Eye contact:**

Wash affected eyes for at least 15 minutes under running water with eyelids held open

##### **Ingestion:**

Rinse mouth then drink plenty of water

##### **If inhaled:**

Keep patient calm, remove to fresh air.

#### **Most important symptoms and effects, both acute and delayed**

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**Symptoms:** No significant symptoms are expected due to the non-classification of the product

**Indication of any immediate medical attention and special treatment needed**

**Note to physician:** Treat symptomatically (decontamination, vital functions), no known specific antidote.

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**5. FIRE-FIGHTING MEASURES**

**Suitable extinguishing media:** Foam, dry powder or water spray.

**Special hazards arising from the substance or mixture:**

Hazards during firefighting:

Harmful vapors.

Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

**Advice for firefighters:**

Protective equipment for firefighting:

Wear a self-contained breathing apparatus in confined areas or when exposed to combustion products.

**Further information:**

Contaminated extinguishing water must be disposed of in accordance with official regulations.

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**6. ACCIDENTAL RELEASE MEASURES**

**Further accidental release measures:**

High risk of slipping due to leakage/spillage of product

**Personal precautions, protective equipment and emergency procedures:**

Use personal protective clothing. Information regarding personal protective measures see section 8.

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**Environmental Precautions:**

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

**Methods and material for containment and cleaning up:**

For large amounts: Pump off product.  
Spills should be contained, solidified, and placed in suitable containers for disposal

For small amounts: Pick up with suitable absorbent material. (e.g. sand, sawdust, general-purpose binder) Dispose of absorbed material Dispose of absorbed material in accordance with regulations.

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**7. HANDLING AND STORAGE**

**Precautions for safe handling:**

No special measures necessary provided product is used correctly.

**Protection against fire and explosion:**

No special precautions necessary.

**Conditions for safe storage, including any incompatibilities:**

Suitable materials for containers: Stainless steel 1.4401

Further information on storage conditions: keep container tightly closed and dry; store in a cool place.

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

No occupational exposure limits known.

**Advice on system design**

Provide local exhaust ventilation to control vapors/mists

### **Personal protective equipment**

#### **Respiratory protection:**

Respiratory protection in case of vapor/aerosol release. Particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type 2 for FFP2)

#### **Hand protection:**

Chemical resistant protective gloves

#### **Eye protection:**

Wear face shield or tightly fitting safety goggles (chemical goggles) if splashing hazard exists.

#### **Body protection:**

Body protection must be chosen based on level of activity and exposure.

#### **General safety and hygiene measures:**

Wear protective clothing as necessary to minimize contact. Handle in accordance with good industrial hygiene and safety practice. Wash contaminated clothing before reuse. Do not eat, drink, or use tobacco while working.

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## **9. PHYSICAL AND CHEMICAL PROPERTIES**

Form:	Liquid
Odor:	Mild, of polyol
Color:	Slightly milky, cloudy
pH value:	5 – 7.5
Freezing point	Approx -29 °C (1,013 hPa)
Boiling point:	> 149 °C

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Flash point:	Approx. 235 °C
Autoignition:	No data available.
Vapor pressure:	< 0.1 mmHg (25 °C)
Density:	1.02 g/cm <sup>3</sup> (25 °C)
Relative density:	1.01 g/cm <sup>3</sup> (25 °C)
Partitioning coefficient n-octanol/water (log Pow):	-1.58
Viscosity, dynamic:	325 mPa.s (25 °C)
Solubility in water:	insoluble
Particle size:	The substance/product is marketed Or used in a non-solid or granular form. (25 °C)
Other information:	If necessary, information on other physical and chemical parameters is indicated in this section

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## 10. STABILITY AND REACTIVITY

### Reactivity:

No hazardous reactions if stored and handled as prescribed/indicated.

### Corrosion to metals:

No corrosive effect on metals.

### Chemical stability:

The product is stable if stored and handled as prescribed/indicated.

### Possibility of hazardous reactions:

This product is chemically stable if stored and handled as prescribed/indicated.

### Conditions to avoid:

See MSDS section 7 – Handling and storage.

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**Incompatible materials:**

Acids, bases, oxidizing agents

**Hazardous decomposition products:**

Hazardous decomposition products. No hazardous decomposition products if stored and handled as prescribed/indicated.

**Thermal decomposition:**

No data available.

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**11. TOXICOLOGICAL INFORMATION**

**Primary routes of exposure:**

Routes of entry for solids and liquids are ingestion and inhalation but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

**Acute Toxicity/Effects:**

Oral

Type of value: LD50

Species: rat

Value: > 5,000 mg/kg (OECD Guideline 401)

Inhalation

Type of value: LC50

Species: rat

Value: >1.37 mg/l

Exposure time: 4 h

Highest concentration available for testing. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Dermal

Type of value: ATE

Value: > 5,000 mg/kg

Skin

Species: rabbit

Revision date: 10-July-2018

Result: non-irritant  
Method: Draize test

Eye

Species: rabbit  
Result: non-irritant  
Method: Draize test

**Chronic Toxicity/Effects:**

Repeated dose toxicity

Assessment of repeated dose toxicity: No known chronic effects.

Genetic toxicity

Assessment of mutagenicity: That substance was not mutagenic in bacteria.

Carcinogenicity

Assessment of carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity

Assessment of reproductive toxicity: The results of animal studies gave no indication of a fertility impairing effect.

Teratogenicity

Assessment of teratogenicity: Based on available data, the classification criteria are not met.

**Symptoms of exposure:**

No significant symptoms are expected due to the non-classification of the product.

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**12. ECOLOGICAL INFORMATION**

**Toxicity:**

Toxicity to fish

LC50 (96 h) > 100 mg/l, *Leuciscus idus*  
Analogous: assessment derived from products with similar chemical character.

Aquatic invertebrates

EC50 (48 h) > 100 mg/l  
Analogous: assessment derived from products with similar chemical character.



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Aquatic plants

EC50 (72 h) > 100 mg/l

Analogous: assessment derived from products with similar chemical character.

Chronic toxicity to fish

No data available

Chronic toxicity to aquatic invertebrates

No data available.

Assessment of terrestrial toxicity

No data available.

### **Microorganisms/Effect on activated sludge**

Toxicity to microorganisms

Analogous: assessment derived from products with similar chemical character.

Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.

### **Persistence and degradability:**

Assessment biodegradation and elimination (H2O)

Readily biodegradable (according to OECD criteria).

Elimination information

>60% CO<sub>2</sub> formation relative to the theoretical value (28 d) (OECD 301B; ISO 9439; 9439; 92/69/EEC,C.4-C) Readily biodegradable.

### **Bioaccumulative potential:**

Assessment bioaccumulation potential

Accumulation in organisms is not to be expected.

### **Mobility in soil:**

Assessment transport between environmental compartments

The substance will not evaporate into the atmosphere from the water surface.

Absorption to solid soil phase is possible.

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### 13. DISPOSAL CONSIDERATIONS

#### Waste disposal of substance:

Dispose of in accordance with national, state and local regulations. It is the waste generator's responsibility to determine if a particular waste is hazardous under RCRA

#### Container disposal:

Dispose of in accordance with national, state, and local regulations.

RCRA: N/A

### 14. TRANSPORT INFORMATION

#### Land Transport

USDOT Not classified as a dangerous good under transport regulations.

#### Sea transport

IMDG Not classified as a dangerous good under transport regulations.

#### Air transport

IATA/ICAO Not classified as a dangerous good under transport regulations.

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### 15. REGULATORY INFORMATION

#### Federal Regulations

#### Registration status:

Chemical TSCA, US released / listed

**EPCRA 311/312 (Hazard categories):** Refer to SDS section 2 for GHS hazard classes applicable for this product

#### NFPA Hazard codes:

Health: 1 Flammability: 1 Reactivity: 0 Special:

#### HMIS III rating:

Health: 1 Flammability: 1 Physical hazard: 0

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## 16. OTHER INFORMATION

### **Disclaimer:**

The information set forth is based on information that Amine Optimization Company believes to be accurate. No warranty, expressed or implied, is intended. The information is provided solely for your information and consideration and Amine Optimization Company assumes no legal responsibility for use or reliance thereon. In the event of a discrepancy between the information on the non-English document and its English counterpart, the English version shall supersede.

Prepared by: Amine Optimization Company - Safety, Health and Environmental Affairs  
Revision date: 10-July-2018

End of Safety Data Sheet



## **Safety Data Sheet**

Prepared in accordance with the United States Hazard Communication Standard: 29 CFR 1910.1200 (2012) Revision date: 29-July-2018

### **1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**

Product name: Antifoam AF Series (AF 12)  
Product code: AF-12  
Synonyms: Antifoam, Defoamer  
Recommended use: Gas treating applications (foam control in Amine treating units)

Restrictions on use: No information available.

Supplier:  
Amine Optimization Company (a Nexo Solutions company)  
25003 Pitkin Road, Suite A100  
The Woodlands, TX 77386  
United States  
Tel: 1-832-510-8191

Emergency Telephone Number: ChemTel at 1-800-255-3924

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### **2. HAZARDS IDENTIFICATION**

**According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200**

#### **Classification of the product**

No need for classification according to GHS criteria for this product.

#### **Label elements**

The product does not require a hazard warning label in accordance with GHS criteria

Revision date: 29-July-2018

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### **According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200**

Under the referenced regulation, this product does not contain any components classified for health hazards above the relevant cutoff value.

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### 4. FIRST AID MEASURES

#### **Description of first aid measures**

##### **General advice:**

Remove contaminated clothing

##### **Skin contact:**

Wash thoroughly with soap and water.

##### **Eye contact:**

Wash affected eyes for at least 15 minutes under running water with eyelids held open

##### **Ingestion:**

Rinse mouth then drink plenty of water

##### **If inhaled:**

Keep patient calm, remove to fresh air.

#### **Most important symptoms and effects, both acute and delayed**

**Symptoms:** No significant symptoms are expected due to the non-classification of the product

#### **Indication of any immediate medical attention and special treatment needed**

**Note to physician:** Treat symptomatically (decontamination, vital functions), no known specific antidote.

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### 5. FIRE-FIGHTING MEASURES

#### **Suitable extinguishing media:**

Foam, dry powder or water spray.

**Special hazards arising from the substance or mixture:**

Hazards during firefighting:

Harmful vapors.

Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

**Advice for firefighters:**

Protective equipment for firefighting:

Wear a self-contained breathing apparatus in confined areas or when exposed to combustion products.

**Further information:**

Contaminated extinguishing water must be disposed of in accordance with official regulations.

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**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures:**

Use personal protective clothing. Information regarding personal protective measures see section 8.

**Environmental Precautions:**

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

**Methods and material for containment and cleaning up:**

- For large amounts: Pump off product.  
Spills should be contained, solidified, and placed in suitable containers for disposal
- For small amounts: Pick up with suitable absorbent material. (e.g. sand, sawdust, general-purpose binder) Dispose of absorbed material in accordance with regulations.
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## **7. HANDLING AND STORAGE**

### **Precautions for safe handling:**

Keep container tightly closed. Protect from the effects of light

### **Protection against fire and explosion:**

No special precautions necessary.

### **Conditions for safe storage, including any incompatibilities:**

Keep in a cool place.

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## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **Advice on system design**

Provide local exhaust ventilation to control vapors/mists

### **Personal protective equipment**

#### **Respiratory protection:**

Respiratory protection in case of vapor/aerosol release. Particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type 2 for FFP2)

#### **Hand protection:**

Chemical resistant protective gloves

#### **Eye protection:**

Wear face shield or tightly fitting safety goggles (chemical goggles) if splashing hazard exists.

#### **Body protection:**

Body protection must be chosen based on level of activity and exposure.

**General safety and hygiene measures:**

Wear protective clothing as necessary to minimize contact. Handle in accordance with good industrial hygiene and safety practice. Wash contaminated clothing before reuse. Do not eat, drink, or use tobacco while working.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

Form:	Liquid
Odor:	Mild, of polyol
Color:	Slightly milky, cloudy
pH value:	5 – 7.5
Freezing point	Approx -23 °C (1,013 hPa)
Boiling point:	> 149 °C
Flash point:	205 °C
Autoignition:	No data available.
Vapor pressure:	< 0.1 mmHg (25 °C)
Density:	1.02 g/cm <sup>3</sup> (25 °C)
Relative density:	1.02 g/cm <sup>3</sup> (25 °C)
Bulk density:	1,020 kg/m <sup>3</sup>
Partitioning coefficient n-octanol/water (log Pow):	-1.58
Viscosity, dynamic:	800 mPa.s (25 °C)
Solubility in water:	insoluble
Particle size:	The substance/product is marketed Or used in a non-solid or granular form. (25 °C)
Other information:	If necessary, information on other physical and chemical parameters is indicated in this section

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## **10. STABILITY AND REACTIVITY**

### **Reactivity:**

No hazardous reactions if stored and handled as prescribed/indicated.

### **Corrosion to metals:**

No corrosive effect on metals.

### **Chemical stability:**

The product is stable if stored and handled as prescribed/indicated.

### **Possibility of hazardous reactions:**

This product is chemically stable

### **Conditions to avoid:**

See MSDS section 7 – Handling and storage.

### **Incompatible materials:**

Acids, bases, oxidizing agents

### **Hazardous decomposition products:**

Hazardous decomposition products. No hazardous decomposition products if stored and handled as prescribed/indicated.

### **Thermal decomposition:**

No data available.

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## **11. TOXICOLOGICAL INFORMATION**

### **Primary routes of exposure:**

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Routes of entry for solids and liquids are ingestion and inhalation but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

**Acute Toxicity/Effects:**

Oral

Type of value: LD50

Species: rat

Value: > 2,000 mg/kg

Dermal

Type of value: ATE

Value: > 5,000 mg/kg

Skin

Species: rabbit

Result: non-irritant

Method: Draize test

Eye

Species: rabbit

Result: non-irritant

Method: Draize test

**Chronic Toxicity/Effects:**

Teratogenicity

Assessment of teratogenicity: No data available

Other information

The product has not been tested. The statements on toxicology have been derived from products of a similar structure and composition.

**Symptoms of exposure:**

No significant symptoms are expected due to the non-classification of the product.

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Revision date: 29-July-2018

## 12. ECOLOGICAL INFORMATION

### **Toxicity:**

#### Toxicity to fish

LC50 (96 h) > 100 mg/l, *Leuciscus idus*

Analogous: assessment derived from products with similar chemical character.

#### Aquatic invertebrates

EC50 (48 h) > 100 mg/l

Analogous: assessment derived from products with similar chemical character.

Aquatic plants

EC50 (72 h) > 100 mg/l

Analogous: assessment derived from products with similar chemical character.

#### Chronic toxicity to fish

No data available

#### Chronic toxicity to aquatic invertebrates

No data available.

### **Microorganisms/Effect on activated sludge**

#### Toxicity to microorganisms

Analogous: assessment derived from products with similar chemical character.

Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.

### **Persistence and degradability:**

#### Assessment biodegradation and elimination (H2O)

Is partially eliminated in sewage treatment plants

### **Bioaccumulative potential:**

#### Assessment bioaccumulation potential

The product has not been tested

#### Bioaccumulation potential

*Information on naphthalene*

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*Bioconcentration factor: 36.5 – 168 (56 d), Cyprinus sp. (OECD Guidelines 305 C)*

**Mobility in soil:**

Assessment transport between environmental compartments

The substance will not evaporate into the atmosphere from the water surface.  
Absorption to solid soil phase is possible

**Additional information:**

Other ecotoxicological advice:

The product has not been tested. The statements of ecotoxicology have been derived from products of a similar structure and composition.

**13. DISPOSAL CONSIDERATIONS**

**Waste disposal of substance:**

Dispose of in accordance with national, state and local regulations. It is the waste generator's responsibility to determine if a particular waste is hazardous under RCRA

**Container disposal:**

Dispose of in accordance with national, state, and local regulations.

**RCRA:** N/A

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**14. TRANSPORT INFORMATION**

**Land Transport**

USDOT Not classified as a dangerous good under transport regulations.

**Sea transport**

IMDG Not classified as a dangerous good under transport regulations.

**Air transport**

IATA/ICAO Not classified as a dangerous good under transport regulations.

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**15. REGULATORY INFORMATION**

Revision date: 29-July-2018

## **Federal Regulations**

### **Registration status:**

Chemical TSCA, US released / listed

**EPCRA 311/312 (Hazard categories):** Refer to SDS section 2 for GHS hazard classes applicable for this product

<b><u>CERCLA RQ</u></b>	<b><u>CAS Number</u></b>	<b><u>Chemical name</u></b>
100 LBS	75-56; 123-91-1	Propylene Oxide; 1,4-dioxane
10 LBS	75-21-8	Ethylene Oxide

### **Safe drinking water & Toxic Enforcement Act, CA Prop 65:**

**WARNING:** This product can expose you to chemicals including ETHYLENE OXIDE, which is known to the state of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

### **Recommended use: for industrial use only**

#### **NFPA Hazard codes:**

Health: 1 Flammability: 1 Reactivity: 0 Special:

#### **HMIS III rating:**

Health: 1 Flammability: 1 Physical hazard: 0

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## **16. OTHER INFORMATION**

### **Disclaimer:**

The information set forth is based on information that Amine Optimization Company believes to be accurate. No warranty, expressed or implied, is intended. The information is provided solely for your information and consideration and Amine Optimization Company assumes no legal responsibility for use or reliance thereon. In the event of a discrepancy between the information on the non-English document and its English counterpart, the English version shall supersede.

Prepared by: Amine Optimization Company - Safety, Health and Environmental Affairs  
Revision date: 29-July-2018

End of Safety Data Sheet



## Safety Data Sheet

Prepared in accordance with the United States Hazard Communication Standard: 29 CFR 1910.1200 (2012) Revision date: 11-July-2018

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### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name: Antifoam AF Series (AF 14)  
Product code: AF-14  
Synonyms: Antifoam, Defoamer  
Recommended use: Gas treating applications (foam control in Amine treating units)

Restrictions on use: No information available.

Supplier:  
Amine Optimization Company (a Nexo Solutions company)  
25003 Pitkin Road, Suite A100  
The Woodlands, TX 77386  
United States  
Tel: 1-832-510-8191

Emergency Telephone Number: ChemTel at 1-800-255-3924

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### 2. HAZARDS IDENTIFICATION

**According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200**

#### Classification of the product

No need for classification according to GHS criteria for this product.

Revision date: 11-July-2018

## **Label elements**

The product does not require a hazard warning label in accordance with GHS criteria

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### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

#### **According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200**

This product does not contain any components classified as hazardous under the referenced regulation.

### **4. FIRST AID MEASURES**

#### **Description of first aid measures**

##### **General advice:**

Remove contaminated clothing

##### **Skin contact:**

Wash thoroughly with soap and water.

##### **Eye contact:**

Wash affected eyes for at least 15 minutes under running water with eyelids held open

##### **Ingestion:**

Rinse mouth then drink plenty of water

##### **If inhaled:**

Keep patient calm, remove to fresh air.

#### **Most important symptoms and effects, both acute and delayed**

**Symptoms:** No significant symptoms are expected due to the non-classification of the product

#### **Indication of any immediate medical attention and special treatment needed**

**Note to physician:** Treat symptomatically (decontamination, vital functions), no known specific antidote.

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## 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media:** Foam, dry powder or water spray.

**Special hazards arising from the substance or mixture:**

Hazards during firefighting:

Harmful vapors, nitrous gasses

Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

**Advice for firefighters:**

Protective equipment for firefighting:

Wear a self-contained breathing apparatus in confined areas or when exposed to combustion products.

**Further information:**

The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

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## 6. ACCIDENTAL RELEASE MEASURES

Further accidental release measures:

High risk of slipping due to leakage/spillage of the product.

**Personal precautions, protective equipment and emergency procedures:**

Use personal protective clothing. Information regarding personal protective measures see section 8.

**Environmental Precautions:**

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

**Methods and material for containment and cleaning up:**

For large amounts: Pump off product.  
Spills should be contained, solidified, and placed in suitable containers for disposal



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For small amounts: Pick up with suitable absorbent material. (e.g. sand, sawdust, general-purpose binder) Dispose of absorbed material in accordance with regulations.

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## 7. HANDLING AND STORAGE

### Precautions for safe handling:

No special measures necessary provided product is used correctly.

### Conditions for safe storage, including any incompatibilities:

Suitable materials for containers: Carbon steel (Iron)

Further information on storage conditions: Keep container tightly closed and dry; store in a cool place.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Personal protective equipment

#### Respiratory protection:

Respiratory protection in case of vapor/aerosol release. Particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type 2 for FFP2)

#### Hand protection:

Chemical resistant protective gloves

#### Eye protection:

Wear face shield or tightly fitting safety goggles (chemical goggles) if splashing hazard exists.

#### Body protection:

Body protection must be chosen based on level of activity and exposure.

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**General safety and hygiene measures:**

Wear protective clothing as necessary to minimize contact. Handle in accordance with good industrial hygiene and safety practice. Wash contaminated clothing before reuse. Do not eat, drink, or use tobacco while working.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

Form:	Liquid
Odor:	Product specific
Color:	cloudy
pH value:	8 – 11 (2.5%(m))
Flash point:	>246 °C
Density:	1.02 g/cm <sup>3</sup> (25 °C)
Solubility in water:	Partly soluble
Other information:	If necessary, information on other physical and chemical parameters is indicated in this section

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**10. STABILITY AND REACTIVITY**

**Reactivity:**

No hazardous reactions if stored and handled as prescribed/indicated.

**Oxidizing Properties:**

Not fire-propagating

**Possibility of hazardous reactions:**

No hazardous reactions when stored and handled according to instructions.  
The product is chemically stable

**Chemical stability:**

The product is stable if stored and handled as prescribed/indicated.

Revision date: 11-July-2018

**Conditions to avoid:**

See MSDS section 7 – Handling and storage.

**Incompatible materials:**

Acids, alkalines, oxidizing agents, reactive chemicals

**Hazardous decomposition products:**

No hazardous decomposition products if stored and handled as prescribed/indicated.

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**11. TOXICOLOGICAL INFORMATION**

**Primary routes of exposure:**

Routes of entry for solids and liquids are ingestion and inhalation but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

**Acute Toxicity/Effects:**

Oral

Type of value: LD50

Species: rat

Value: > 2,000 mg/kg

Dermal

Type of value: ATE

Value: > 5,000 mg/kg

Skin

Species: rabbit

Result: non-irritant

Method: OECD Guideline 404

Eye

Species: rabbit

Result: non-irritant

Revision date: 11-July-2018

Method: OECD Guideline 405

**Chronic Toxicity/Effects:**

Other information

The product has not been tested. The statements on toxicology have been derived from products of a similar structure and composition.

**Symptoms of exposure:**

No significant symptoms are expected due to the non-classification of the product.

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**12. ECOLOGICAL INFORMATION**

**Toxicity**

Aquatic invertebrates

EC50 (48 h) > 100 mg/l, Daphnia magna (OECD Guideline 202, part 1)

**Microorganisms/Effect on activated sludge**

Toxicity to microorganisms

OECD guideline 209 activated sludge, domestic/EC20 (0.5h): >1,000 mg/l

Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.

**Persistence and degradability:**

Elimination information

10-20% DOC reduction (28 d) (OECD 301 A (new version)) (activated sludge) poorly biodegradable.

The product has not been tested. The statement has been derived from substances/products of a similar structure and composition.

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**Mobility in soil:**

Assessment transport between environmental compartments

Not determined

**Additional information:**

Other ecotoxicological advice:

Do not allow to enter soil, waterways or waste water channels. The product has not been tested. The statement has been derived from substances/products of a similar structure and composition.

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**13. DISPOSAL CONSIDERATIONS**

**Waste disposal of substance:**

Dispose of in accordance with national, state and local regulations. It is the waste generator's responsibility to determine if a particular waste is hazardous under RCRA

**Container disposal:**

Dispose of in accordance with national, state, and local regulations.

**RCRA:** N/A

**14. TRANSPORT INFORMATION**

**Land Transport**

USDOT Not classified as a dangerous good under transport regulations.

**Sea transport**

IMDG Not classified as a dangerous good under transport regulations.

**Air transport**

IATA/ICAO Not classified as a dangerous good under transport regulations.

---

## 15. REGULATORY INFORMATION

### Federal Regulations

#### Registration status:

Chemical TSCA, US released / listed

**EPCRA 311/312 (Hazard categories):** Not hazardous

#### CERCLA RQ

100 LBS

10 LBS

#### CAS Number

75-56; 123-91-1

75-21-8

#### Chemical name

Propylene Oxide; 1,4-dioxane

Ethylene Oxide

#### CA Prop 65:

**WARNING:** THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

#### NFPA Hazard codes:

Health: 1      Flammability: 1      Reactivity: 0      Special:

#### HMIS III rating:

Health: 1      Flammability: 1      Physical hazard: 0

---

## 16. OTHER INFORMATION

### **Disclaimer:**

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Prepared by: Amine Optimization Company - Safety, Health and Environmental Affairs  
Revision date: 11-July-2018

End of Safety Data Sheet



## Safety Data Sheet

Prepared in accordance with the United States Hazard Communication Standard: 29 CFR 1910.1200 (2012) Revision date: 14-September-2018

---

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name: Antifoam AF Series (AF 16)  
Product code: AF-16  
Synonyms: Antifoam, Defoamer  
Recommended use: Gas treating applications (foam control in Amine treating units)

Restrictions on use: No information available.

Supplier:  
Amine Optimization Company (a Nexco Solutions company)  
25003 Pitkin Road, Suite A100  
The Woodlands, TX 77386  
United States  
Tel: 1-832-510-8191

Emergency Telephone Number: ChemTel at 1-800-255-3924

---

### 2. HAZARDS IDENTIFICATION

**According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200**

#### Classification of the product

No need for classification according to GHS criteria for this product.



Revision date: 14-September-2018

## **Label elements**

The product does not require a hazard warning label in accordance with GHS criteria

### **Hazards not otherwise classified**

#### Labeling of special preparations (GHS):

This surfactant complies with biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents. Data to support this assertion is held at the disposal of the competent authorities of the Member States and will be made available to them at their direct request or at the request of a detergent manufacturer.

---

## **3. COMPOSITION/INFORMATION ON INGREDIENTS**

### **According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200**

Under the referenced regulation, this product does not contain any components classified for health hazards above the relevant cutoff value.

---

## **4. FIRST AID MEASURES**

### **Description of first aid measures**

#### **General advice:**

Remove contaminated clothing

#### **Skin contact:**

Wash thoroughly with soap and water.

#### **Eye contact:**

Wash affected eyes for at least 15 minutes under running water with eyelids held open

#### **Ingestion:**

Rinse mouth then drink plenty of water

#### **If inhaled:**

Keep patient calm, remove to fresh air.

### **Most important symptoms and effects, both acute and delayed**

Revision date: 14-September-2018

**Symptoms:** No significant symptoms are expected due to the non-classification of the product

**Indication of any immediate medical attention and special treatment needed**

**Note to physician:** Treat symptomatically (decontamination, vital functions), no known specific antidote.

**5. FIRE-FIGHTING MEASURES**

**Suitable extinguishing media:** Foam, dry powder or water spray.

**Special hazards arising from the substance or mixture:**

Hazards during firefighting:

Harmful vapors.

Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

**Advice for firefighters:**

Protective equipment for firefighting:

Wear a self-contained breathing apparatus in confined areas or when exposed to combustion products.

**Further information:**

Contaminated extinguishing water must be disposed of in accordance with official regulations.

---

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures:**

Use personal protective clothing. Information regarding personal protective measures see section 8.

**Environmental Precautions:**

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

**Methods and material for containment and cleaning up:**

- For large amounts: Pump off product.  
Spills should be contained, solidified, and placed in suitable containers for disposal
- For small amounts: Pick up with suitable absorbent material. (e.g. sand, sawdust, general-purpose binder) Dispose of absorbed material Dispose of absorbed material in accordance with regulations.

---

**7. HANDLING AND STORAGE**

**Precautions for safe handling:**

Keep container tightly closed. Protect from the effects of light

**Protection against fire and explosion:**

No special precautions necessary.

**Conditions for safe storage, including any incompatibilities:**

Suitable materials for containers: Stainless steel 1.4301 (V2), Aluminum, High density polyethylene (HDPE), Tinned carbon steel, Glass, Low density polyethylene (LDPE), Galvanized carbon steel (Zinc).

Further information on storage conditions: No special precautions necessary.

---

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Advice on system design**

Provide local exhaust ventilation to control vapors/mists

**Personal protective equipment**

**Respiratory protection:**

Revision date: 14-September-2018

Respiratory protection in case of vapor/aerosol release. Particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type 2 for FFP2)

**Hand protection:**

Chemical resistant protective gloves

**Eye protection:**

Wear face shield or tightly fitting safety goggles (chemical goggles) if splashing hazard exists.

**Body protection:**

Body protection must be chosen based on level of activity and exposure.

**General safety and hygiene measures:**

Wear protective clothing as necessary to minimize contact. Handle in accordance with good industrial hygiene and safety practice. Remove contaminated clothing.

---

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Form:	Liquid
Odor:	Mild, of polyol
Color:	Slightly milky, cloudy
pH value:	5 – 7.5
Freezing point	Approx -37 °C (1,013 hPa)
Boiling point:	> 149 °C
Flash point:	>204 °C
Autoignition:	No data available.
Vapor pressure:	< 0.1 mmHg (25 °C)
Density:	1.02 g/cm <sup>3</sup> (25 °C)
Relative density:	1.02 g/cm <sup>3</sup> (25 °C)
Partitioning coefficient n-octanol/water (log Pow):	-1.58
Viscosity, dynamic:	475 mPa.s (25 °C)

Revision date: 14-September-2018

Solubility in water:	insoluble
Particle size:	The substance/product is marketed Or used in a non-solid or granular form. (25 °C)
Molar mass:	2,750 g/mol
Other information:	If necessary, information on other physical and chemical parameters is indicated in this section

---

## 10. STABILITY AND REACTIVITY

### Reactivity:

No hazardous reactions if stored and handled as prescribed/indicated.

### Corrosion to metals:

No corrosive effect on metals.

### Chemical stability:

The product is stable if stored and handled as prescribed/indicated.

### Possibility of hazardous reactions:

This product is chemically stable

### Conditions to avoid:

No data available.

### Incompatible materials:

No data available.

### Hazardous decomposition products:

No hazardous decomposition products if stored and  
handled as prescribed/indicated.

### Thermal decomposition:

No data available.

---

## 11. TOXICOLOGICAL INFORMATION

### Primary routes of exposure:

Routes of entry for solids and liquids are ingestion and inhalation but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

### Acute Toxicity/Effects:

#### Oral

Type of value: LD50

Species: rat

Value: > 2,000 mg/kg

#### Dermal

Type of value: ATE

Value: > 5,000 mg/kg

#### Skin

Species: rabbit

Result: non-irritant

Method: Draize test

#### Eye

Species: rabbit

Result: non-irritant

Method: Draize test

### Chronic Toxicity/Effects:

#### Other information

The product has not been tested. The statements on toxicology have been derived from products of a similar structure and composition.

Revision date: 14-September-2018

**Symptoms of exposure:**

No significant symptoms are expected due to the non-classification of the product.

---

**12. ECOLOGICAL INFORMATION**

**Persistence and degradability:**

Elimination information

>60% CO<sub>2</sub> formation relative the theoretical value (28 d) (OECD 301B; ISO 9439; 92/69/EEC, C.4-C) Readily biodegradable.

**Bioaccumulative potential:**

Bioaccumulation potential

Accumulation in organisms is not to be expected.

**Mobility in soil:**

Assessment transport between environmental compartments

Not determined

**Additional information:**

Treatment in biological waste water treatment plants has to be performed according to local and administrative regulations.

---

**13. DISPOSAL CONSIDERATIONS**

**Waste disposal of substance:**

Dispose of in accordance with national, state and local regulations. It is the waste generator's responsibility to determine if a particular waste is hazardous under RCRA

**Container disposal:**

Revision date: 14-September-2018

Dispose of in accordance with national, state, and local regulations.

RCRA: N/A

---

#### 14. TRANSPORT INFORMATION

##### Land Transport

USDOT Not classified as a dangerous good under transport regulations.

##### Sea transport

IMDG Not classified as a dangerous good under transport regulations.

##### Air transport

IATA/ICAO Not classified as a dangerous good under transport regulations.

---

#### 15. REGULATORY INFORMATION

##### Federal Regulations

##### Registration status:

Chemical TSCA, US released / listed

**EPCRA 311/312 (Hazard categories):** Refer to SDS section 2 for GHS hazard classes applicable for this product

<u>CERCLA RQ</u>	<u>CAS Number</u>	<u>Chemical name</u>
100 LBS	123-91-1; 75-56-9	1,4-dioxane; Propylene Oxide
10 LBS	75-21-8	Ethylene Oxide

##### Safe drinking water & Toxic Enforcement Act, CA Prop 65:

**WARNING:** This product can expose you to chemicals including ETHYLENE OXIDE, which is known to the state of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

##### Recommended use: for industrial use only

##### NFPA Hazard codes:

Health: 1 Fire: 1 Reactivity: 0 Special:



Revision date: 14-September-2018

**HMIS III rating:**

Health: 1      Fire: 1      Physical hazard: 0

---

**16. OTHER INFORMATION**

**Disclaimer:**

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Prepared by: Amine Optimization Company - Safety, Health and Environmental Affairs  
Revision date: 14-September-2018

End of Safety Data Sheet



## Safety Data Sheet

Prepared in accordance with the United States Hazard Communication Standard: 29 CFR 1910.1200 (2012) Revision date: 12-July-2018

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name: Antifoam AF Series (AF 17)  
Product code: AF-17  
Synonyms: Antifoam, Defoamer  
Recommended use: Gas treating applications (foam control in Amine treating units)

Restrictions on use: No information available.

Supplier:  
Amine Optimization Company (a Nexo Solutions company)  
25003 Pitkin Road, Suite A100  
The Woodlands, TX 77386  
United States  
Tel: 1-832-510-8191

Emergency Telephone Number: ChemTel at 1-800-255-3924

### 2. HAZARDS IDENTIFICATION

**According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200**

#### Classification of the product

Carc.	2	Carcinogenicity
Aquatic Acute	3	Hazardous to the aquatic environment – acute
Aquatic Chronic	3	Hazardous to the aquatic environment – chronic

Revision Date: 12-July-2018

**Label elements**

Pictogram:



Signal Word:  
Warning

Hazard Statement:

- H351 Suspected of causing cancer.
- H402 Harmful to aquatic life.
- H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P201 Obtain special instructions before use.
- P273 Avoid release to the environment.
- P202 Do not handle until all safety precautions have been read and understood.

Precautionary Statements (Response):

- P308 +P311 IF exposed or concerned: Call a POISON CENTER or doctor/physician.

Precautionary Statements (Storage):

- P405 Store locked up.

Precautionary Statements (Disposal):

- P501 Dispose of contents/container in accordance with local regulations.

**Hazards not otherwise classified**

If applicable information is provided in this section on other hazards which do not result in classification, but which may contribute to the overall hazards of the substance or mixture.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200**

Synonyms: Antifoam, Defoamer

<u>CAS Number</u>	<u>Weight %</u>	<u>Chemical Name</u>
64742-94-5	5.0 - < 7.0%	solvent naphtha
91-20-3	0.3 - < 1.0%	naphthalene

#### 4. FIRST AID MEASURES

##### Description of first aid measures

**General advice:** Immediately remove contaminated clothing.

If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). First aid personnel should pay attention to their own safety.

**Skin contact:** Wash affected areas with water while removing contaminated clothing. Seek medical attention.

**Eye contact:** Flush eyes immediately with large amounts of water for 15 minutes with eyelids held open. Seek medical attention.

**Inhalation:** Move affected individual to fresh air and keep person calm. Seek medical attention.

**Ingestion:** Do not induce vomiting. If conscious, immediately rinse mouth and drink plenty of water. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

##### Most important symptoms and effects, both acute and delayed

**Symptoms:** The most important known symptoms and effects are described in Section 2 and/or in Section 11.

Indication of any immediate medical attention and special treatment needed

**Note to physician:** Treat symptomatically (decontamination, vital functions), no known specific antidote.

#### 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media:** Use foam, dry powder or water spray.

**Unsuitable extinguishing media for safety reasons:** Water jet

**Protective equipment and precautions for firefighters:**

In the event of fire, wear self-contained breathing apparatus due to harmful vapors. Wear suitable protective equipment.

**Further information:**

The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

**6. ACCIDENTAL RELEASE MEASURES**

Further accidental release measures:

Pack in tightly closed containers for disposal. May release highly flammable and/or corrosive gases/vapors.

**Personal precautions, protective equipment and emergency procedures:**

Use personal protective clothing. Keep people away and stay on the upwind side. Breathing protection required.

**Environmental Precautions:**

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

**Methods and material for containment and cleaning up:**

For large amounts: Pump off product.

For residues: Pick up with suitable absorbent material. Dispose of absorbed material in accordance with regulations.

**NOTE:** High risk of slipping due to leakage/spilling of product.

**7. HANDLING AND STORAGE**

**Precautions for safe handling:**

Ensure thorough ventilation of stores and work areas.

**Protection against fire and explosion:**

Sources of ignition should be kept well clear. Take precautionary measures against static discharges. If delivered in plastic packing, highest permissible emptying temperature is 5° Kelvin below the flash point.

**Conditions for safe storage, including any incompatibilities:**

Segregate from acids and bases. Segregate from strong oxidizing agents.

**Further information on storage conditions:**

Keep container tightly closed and dry; store in a cool place.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Components with occupational exposure limits**

Naphthalene	OSHA PEL	PEL 10 ppm 50 mg/m <sup>3</sup> ; TWA value 10 ppm 50 mg/m <sup>3</sup> ; STEL value 15 ppm 75 mg/m <sup>3</sup>
	ACGIH TLV	Skin Designation ; The substance can be absorbed through the skin. TWA value 10 ppm ;
Solvent naphtha	OSHA PEL.	PEL 100 ppm 400 mg/m <sup>3</sup> ; TWA value 100 ppm 400 mg/m <sup>3</sup> ;

**Personal protective equipment**

**Respiratory protection:**

Wear respiratory protection if ventilation is inadequate. Breathing protection if breathable aerosols/dust are formed. Wear a NIOSH-certified (or equivalent) organic vapor/particulate respirator.

**Hand protection:**

Chemical resistant protective gloves, butyl rubber- 0.7 mm coating thickness, fluoroelastomer (FKM) – 0.7mm coating thickness. Suitable materials for short-term contact (recommended: At least protective index 2, corresponding >30 minutes of permeation time according to EN 374), nitrile rubber (NBR) – 0.4mm coating thickness. Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing. Manufacturer's directions for use should be observed because of great diversity of types. When there is a risk of frostbite from escaping gas, use thermally insulated gloves (EN 511). Consult with glove manufacturer for testing data.

**Eye protection:**

Tightly fitting safety goggles (chemical goggles) with side shields and face shield.

**Body protection:**

Body protection must be chosen based on level of activity and exposure. Protective overall and/or impermeable apron and boots as necessary.

**General safety and hygiene measures:**

Wear protective clothing as necessary to minimize contact. Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding items. Remove contaminated clothing.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Form:	Viscous, liquid
Odor:	Aromatic
Odor threshold:	No data available
Color:	Amber
pH value:	Not applicable
Boiling point:	256 °C
Flash point:	>93 °C
Melting point:	Not determined
Sublimation point:	No Data available
Flammability:	Not flammable
Lower explosion limit:	For liquids not relevant for classification and labeling. The lower explosion point may be 77 °C - 89 °C.
Upper explosion limit:	For liquids not relevant for classification and labeling.

Revision Date: 12-July-2018

Autoignition:	Not determined
Vapor pressure:	Has not been tested
Density:	approx. 0.988 g/cm <sup>3</sup> (25 °C)
Relative density:	No data available.
Vapor density:	No data available.
Partitioning coefficient n-octanol/water (log Pow):	Study scientifically not justified.
Self-ignition:	Not self-igniting
Viscosity, dynamic:	500 - 2000 mPa.s (25 °C)
Viscosity, Kinematic:	No data available.
Solubility in water:	insoluble
Solubility (quantitative):	No data available.
Solubility (qualitative):	No data available.
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.
Thermal decomposition:	No decomposition if correctly stored and handled.

## 10. STABILITY AND REACTIVITY

### Reactivity:

No hazardous reactions when stored and handled according to instructions

### Oxidizing properties:

Not fire-propagating

### Chemical stability:

The product is stable if stored and handled as prescribed/indicated.

### Possibility of hazardous reactions:

No hazardous reaction when stored and handled according to instructions.  
The product is chemically stable.

### Conditions to avoid:



Revision Date: 12-July-2018

Avoid moisture

**Incompatible materials:**

Strong acids, strong bases, oxidizing agents

**Decomposition products:**

Hazardous decomposition products. No hazardous decomposition products if stored and handled as prescribed/indicated.

**11. TOXICOLOGICAL INFORMATION**

**Primary routes of exposure:**

Routes of entry for solids and liquids are ingestion and inhalation but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

**Acute Toxicity/Effects:**

Acute toxicity

Assessment of acute toxicity: Of low toxicity after single ingestion. Virtually nontoxic by inhalation. Virtually nontoxic after a single skin contact.

Oral

Type of value: LD50

Species: rat

Value: >2,000 mg/kg

Dermal

Type of value: ATE

Value: 5000 mg/kg

Irritation/corrosion:

Assessment of irritating effects: Skin contact causes slight irritation.

Sensitization:

Assessment of sensitization. Based on the ingredients, there is no suspicion of a skin-sensitizing potential.

Aspiration Hazard:

Revision Date: 12-July-2018

No aspiration hazard.

### **Chronic Toxicity/Effects:**

#### Repeated dose toxicity:

Assessment of repeated dose toxicity: Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

#### *Information on: naphthalene*

*Assessment of repeated dose toxicity: Repeated oral uptake of the substance did not cause substance-related effects. The substance may cause damage to the olfactory epithelium after repeated inhalation. Repeated dermal uptake of the substance did not cause substance-related effects.*

#### Genetic toxicity

Assessment of mutagenicity: Based on the ingredients, there is suspicion of a mutagenic effect.

#### Carcinogenicity

Assessment of carcinogenicity: Based on the ingredients, there is suspicion of a carcinogenic effect in humans.

Possible carcinogen. (IARC 2B)

#### *Information on: naphthalene*

*Assessment of carcinogenicity: In long term studies in rats and mice in which the substance was given by inhalation, a carcinogenic effect was observed. EU-classification the substance was classified as a group 3 carcinogen by the German MAK-Commission (substances for which a suspicion of a potential carcinogenic effect exists). IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possible carcinogenic to humans).*

#### Reproductive toxicity

Assessment of reproduction toxicity: Based on the ingredients, there is suspicion of a toxic effect on reproduction.

#### Other information

The product has not been tested. The statements on toxicology have been derived from the properties of the individual components.

### **Symptoms of Exposure:**

The most important known symptoms and effects are described in the labeling (see section 2) and/or in section 11.

Revision Date: 12-July-2018

Further important symptoms and effects are so far not known.

## **12. ECOLOGICAL INFORMATION**

### **Toxicity:**

#### Toxicity to fish

LC50 (96 h) 10 – 100 mg/l, Fish

Aquatic toxicity

Assessment of aquatic toxicity:

Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

### **Persistence and degradability:**

#### Assessment biodegradation and elimination (H2O)

Not readily biodegradable (by OECD criteria). The substance can be virtually eliminated from water in suitable effluent treatment plants by biodegradation, stripping and mechanical separation.

### **Bioaccumulative potential:**

#### Assessment bioaccumulation potential

Discharge into the environment must be avoided.

#### Bioaccumulation potential

*Information on naphthalene*

*Bioconcentration factor: 36.5 – 168 (56 d), Cyprinus sp. (OECD Guidelines 305 C)*

### **Mobility in soil:**

#### Assessment transport between environmental compartments

Discharge into the environment must be avoided.

### **Additional information:**

Other ecotoxicological advice:

The product has not been tested. The statements of ecotoxicology have been derived from the properties of the individual components.

### 13. DISPOSAL CONSIDERATIONS

#### Disposal of wastes:

Dispose of in accordance with national, state and local regulations. Do not discharge into drains/surface waters/groundwater. It is the waste generator's responsibility to determine if a particular waste is hazardous under RCRA.

#### Container disposal:

Dispose of in a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers. Dispose of in accordance with national, state, and local regulations.

**WARNING:** Empty containers may still contain hazardous residue.

### 14. TRANSPORT INFORMATION

#### Land Transport

USDOT                      Not classified as dangerous in the meaning of transport regulations.

#### Sea transport

IMDG                      Not classified as dangerous in the meaning of transport regulations.

#### Air transport

IATA/ICAO                Not classified as dangerous in the meaning of transport regulations.

### 15. REGULATORY INFORMATION

#### Federal Regulations

#### Registration status:

Chemical                TSCA, US                released / listed

Revision Date: 12-July-2018

**EPCRA 311/312 (Hazard categories):** Refer to SDS section 2 for GHS hazard classes applicable for this product

**EPCRA 313:**

<u>CAS Number</u>	<u>Chemical name</u>
91-20-3	naphthalene

<u>CERCLA RQ</u>	<u>CAS Number</u>	<u>Chemical name</u>
100 LBS	91-20-3	naphthalene

**State regulations**

<u>State RTK</u>	<u>CAS Number</u>	<u>Chemical name</u>
NJ	64742-94-5	solvent naphtha
	91-20-3	naphthalene
PA	64742-94-5	solvent naphtha

**Safe drinking water & Toxic Enforcement Act, CA Prop 65:**

**WARNING:** This product can expose you to chemicals including BENZENE, which is known to the state of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**Recommended use: for industrial use only**

**NFPA Hazard codes:**

Health: 1      Flammability: 1      Reactivity: 0      Special:

**HMIS III rating:**

Health: 1      Flammability: 1      Physical hazard: 0

HMIS uses a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard; a rating of four indicates high hazard.

**16. OTHER INFORMATION**

**Disclaimer:**

Revision Date: 12-July-2018

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Prepared by: Amine Optimization Company - Safety, Health and Environmental Affairs  
Revision date: 12-July-2018

End of Safety Data Sheet



## Safety Data Sheet

Prepared in accordance with the United States Hazard Communication Standard: 29 CFR 1910.1200 (2012) Revision date: 28-July-2018

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name: Antifoam AF Series (AF 18)  
Product code: AF-18  
Synonyms: Antifoam, Defoamer  
Recommended use: Gas treating applications (foam control in Amine treating units)

Restrictions on use: No information available.

Supplier:  
Amine Optimization Company (a Nexo Solutions company)  
25003 Pitkin Road, Suite A100  
The Woodlands, TX 77386  
United States  
Tel: 1-832-510-8191

Emergency Telephone Number: ChemTel at 1-800-255-3924

### 2. HAZARDS IDENTIFICATION

**According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200**

#### Classification of the product

Carc.	2	Carcinogenicity
Aquatic Acute	3	Hazardous to the aquatic environment – acute
Aquatic Chronic	3	Hazardous to the aquatic environment – chronic

Revision Date: 28-July-2018

## Label elements

Pictogram:



Signal Word:  
Warning

Hazard Statement:

H351 Suspected of causing cancer.  
H402 Harmful to aquatic life.  
H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P201 Obtain special instructions before use.  
P273 Avoid release to the environment.  
P202 Do not handle until all safety precautions have been read and understood.

Precautionary Statements (Response):

P308 +P311 IF exposed or concerned: Call a POISON CENTER or doctor/physician.

Precautionary Statements (Storage):

P405 Store locked up.

Precautionary Statements (Disposal):

P501 Dispose of contents/container in accordance with local regulations.

## Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification, but which may contribute to the overall hazards of the substance or mixture.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200**

Synonyms: Antifoam, Defoamer



<u>CAS Number</u>	<u>Weight %</u>	<u>Chemical Name</u>
64742-94-5	5.0 - < 7.0%	solvent naphtha
91-20-3	0.3 - < 1.0%	naphthalene

#### 4. FIRST AID MEASURES

##### Description of first aid measures

**General advice:** Immediately remove contaminated clothing.

If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). First aid personnel should pay attention to their own safety.

**Skin contact:** Wash affected areas with water while removing contaminated clothing. Seek medical attention.

**Eye contact:** Flush eyes immediately with large amounts of water for 15 minutes with eyelids held open. Seek medical attention.

**Inhalation:** Move affected individual to fresh air and keep person calm. Seek medical attention.

**Ingestion:** Do not induce vomiting. If conscious, immediately rinse mouth and drink plenty of water. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

##### Most important symptoms and effects, both acute and delayed

**Symptoms:** The most important known symptoms and effects are described in Section 2 and/or in Section 11.

Indication of any immediate medical attention and special treatment needed

**Note to physician:** Treat symptomatically (decontamination, vital functions), no known specific antidote.

#### 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media:** Use foam, dry powder or water spray.

**Unsuitable extinguishing media for safety reasons:** Water jet

**Protective equipment and precautions for firefighters:**

In the event of fire, wear self-contained breathing apparatus due to harmful vapors. Wear suitable protective equipment.

**Further information:**

The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

**6. ACCIDENTAL RELEASE MEASURES**

Further accidental release measures:

Pack in tightly closed containers for disposal. May release highly flammable and/or corrosive gases/vapors.

**Personal precautions, protective equipment and emergency procedures:**

Use personal protective clothing. Keep people away and stay on the upwind side. Breathing protection required.

**Environmental Precautions:**

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

**Methods and material for containment and cleaning up:**

For large amounts: Pump off product.

For residues: Pick up with suitable absorbent material. Dispose of absorbed material in accordance with regulations.

**NOTE:** High risk of slipping due to leakage/spilling of product.

**7. HANDLING AND STORAGE**

**Precautions for safe handling:**

Ensure thorough ventilation of stores and work areas.

**Protection against fire and explosion:**

Sources of ignition should be kept well clear. Take precautionary measures against static discharges. If delivered in plastic packing, highest permissible emptying temperature is 5° Kelvin below the flash point.

**Conditions for safe storage, including any incompatibilities:**

Segregate from acids and bases. Segregate from strong oxidizing agents.

**Further information on storage conditions:**

Keep container tightly closed and dry; store in a cool place.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Components with occupational exposure limits**

Naphthalene	OSHA PEL	PEL 10 ppm 50 mg/m <sup>3</sup> ; TWA value 10 ppm 50 mg/m <sup>3</sup> ; STEL value 15 ppm 75 mg/m <sup>3</sup>
	ACGIH TLV	Skin Designation ; The substance can be absorbed through the skin. TWA value 10 ppm ;
Solvent naphtha	OSHA PEL.	PEL 100 ppm 400 mg/m <sup>3</sup> ; TWA value 100 ppm 400 mg/m <sup>3</sup>
	ACGIH TLV	TWA value 200 mg/m <sup>3</sup> Non-aerosol (total hydrocarbon vapor); Application restricted to conditions in which there are negligible aerosol exposures. Skin Designation Non-aerosol (total hydrocarbon vapor); The substance can be absorbed through the skin.

Advice on system design:

Provide local exhaust ventilation to maintain recommended P.E.L.

## **Personal protective equipment**

### **Respiratory protection:**

Wear respiratory protection if ventilation is inadequate. Breathing protection if breathable aerosols/dust are formed. Wear a NIOSH-certified (or equivalent) organic vapor/particulate respirator.

### **Hand protection:**

Chemical resistant protective gloves, butyl rubber- 0.7 mm coating thickness, fluoroelastomer (FKM) – 0.7mm coating thickness. Suitable materials for short-term contact (recommended: At least protective index 2, corresponding >30 minutes of permeation time according to EN 374), nitrile rubber (NBR) – 0.4mm coating thickness. Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing. Manufacturer's directions for use should be observed because of great diversity of types. When there is a risk of frostbite from escaping gas, use thermally insulated gloves (EN 511). Consult with glove manufacturer for testing data.

### **Eye protection:**

Tightly fitting safety goggles (chemical goggles) with side shields and face shield.

### **Body protection:**

Body protection must be chosen based on level of activity and exposure. Protective overall and/or impermeable apron and boots as necessary.

### **General safety and hygiene measures:**

Wear protective clothing as necessary to minimize contact. Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding items. Remove contaminated clothing.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

Form: Liquid  
Odor: Aromatic

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Odor threshold:	No data available
Color:	Amber
pH value:	Not applicable
Boiling point:	228 °C
Flash point:	93.5 °C
Melting point:	Not determined
Sublimation point:	No Data available
Flammability:	Not flammable
Lower explosion limit:	For liquids not relevant for classification and labeling. The lower explosion point may be 77 °C - 89 °C.
Upper explosion limit:	For liquids not relevant for classification and labeling.
Autoignition:	Not determined
Vapor pressure:	Has not been tested
Density:	approx. 0.995 g/cm <sup>3</sup> (25 °C)
Relative density:	No data available.
Vapor density:	No data available.
Partitioning coefficient n-octanol/water (log Pow):	Study scientifically not justified.
Self-ignition:	Not self-igniting
Viscosity, dynamic:	5729 mPa.s (25 °C)
Viscosity, Kinematic:	No data available.
Solubility in water:	insoluble
Solubility (quantitative):	No data available.
Solubility (qualitative):	No data available.
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.
Thermal decomposition:	No decomposition if correctly stored and handled.

## 10. STABILITY AND REACTIVITY

### Reactivity:

No hazardous reactions when stored and handled according to instructions

### Oxidizing properties:

Not fire-propagating

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**Chemical stability:**

The product is stable if stored and handled as prescribed/indicated.

**Possibility of hazardous reactions:**

No hazardous reaction when stored and handled according to instructions.  
The product is chemically stable.

**Conditions to avoid:**

Avoid moisture

**Incompatible materials:**

Strong acids, strong bases, oxidizing agents

**Decomposition products:**

Hazardous decomposition products. No hazardous decomposition products if stored and handled as prescribed/indicated.

**11. TOXICOLOGICAL INFORMATION**

**Primary routes of exposure:**

Routes of entry for solids and liquids are ingestion and inhalation but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

**Acute Toxicity/Effects:**

Acute toxicity

Assessment of acute toxicity: Of low toxicity after single ingestion. Virtually nontoxic by inhalation. Virtually nontoxic after a single skin contact.

Oral

Type of value: ATE

Value: 4,579 mg/kg

Assessment of other acute effects

Assessment of STOT single:

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Based on available data, the classification criteria are not met.

Irritation/corrosion:

Assessment of irritating effects: Skin contact causes slight irritation.

Sensitization:

Assessment of sensitization. Based on the ingredients, there is no suspicion of a skin-sensitizing potential.

Aspiration Hazard:

No aspiration hazard.

**Chronic Toxicity/Effects:**

Repeated dose toxicity:

Assessment of repeated dose toxicity: Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

*Information on: naphthalene*

*Assessment of repeated dose toxicity: Repeated oral uptake of the substance did not cause substance-related effects. The substance may cause damage to the olfactory epithelium after repeated inhalation. Repeated dermal uptake of the substance did not cause substance-related effects.*

Genetic toxicity

Assessment of mutagenicity: Based on the ingredients, there is suspicion of a mutagenic effect.

Carcinogenicity

Assessment of carcinogenicity: Based on the ingredients, there is suspicion of a carcinogenic effect in humans.

Possible carcinogen. (IARC 2B)

*Information on: naphthalene*

*Assessment of carcinogenicity: In long term studies in rats and mice in which the substance was given by inhalation, a carcinogenic effect was observed. EU-classification the substance was classified as a group 3 carcinogen by the German MAK-Commission (substances for which a suspicion of a potential carcinogenic effect exists). IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possible carcinogenic to humans).*

Reproductive toxicity

Assessment of reproduction toxicity: Based on the ingredients, there is suspicion of a toxic effect on reproduction.

Other information

The product has not been tested. The statements on toxicology have been derived from the properties of the individual components.

**Symptoms of Exposure:**

The most important known symptoms and effects are described in the labeling (see section 2) and/or in section 11.

Further important symptoms and effects are so far not known.

**12. ECOLOGICAL INFORMATION**

**Toxicity:**

Aquatic toxicity

Assessment of aquatic toxicity:

Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

**Persistence and degradability:**

Assessment biodegradation and elimination (H2O)

Not readily biodegradable (by OECD criteria). The substance can be virtually eliminated from water in suitable effluent treatment plants by biodegradation, stripping and mechanical separation.

**Bioaccumulative potential:**

Assessment bioaccumulation potential

Discharge into the environment must be avoided.

Bioaccumulation potential

*Information on naphthalene*

*Bioconcentration factor: 36.5 – 168 (56 d), Cyprinus sp. (OECD Guidelines 305 C)*

**Mobility in soil:**

Assessment transport between environmental compartments

Discharge into the environment must be avoided.



**Additional information:**

Other ecotoxicological advice:

The product has not been tested. The statements of ecotoxicology have been derived from the properties of the individual components.

**13. DISPOSAL CONSIDERATIONS**

**Disposal of wastes:**

Dispose of in accordance with national, state and local regulations. Do not discharge into drains/surface waters/groundwater. It is the waste generator's responsibility to determine if a particular waste is hazardous under RCRA.

**Container disposal:**

Dispose of in a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers. Dispose of in accordance with national, state, and local regulations.

**WARNING:** Empty containers may still contain hazardous residue.

**14. TRANSPORT INFORMATION**

**Land Transport**

USDOT                      Not classified as dangerous in the meaning of transport regulations.

**Sea transport**

IMDG                        Not classified as dangerous in the meaning of transport regulations.

**Air transport**

IATA/ICAO                Not classified as dangerous in the meaning of transport regulations.

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## 15. REGULATORY INFORMATION

### Federal Regulations

#### **Registration status:**

Chemical TSCA, US released / listed

**EPCRA 311/312 (Hazard categories):** Refer to SDS section 2 for GHS hazard classes applicable for this product

#### **EPCRA 313:**

<u>CAS Number</u>	<u>Chemical name</u>
91-20-3	naphthalene

<u>CERCLA RQ</u>	<u>CAS Number</u>	<u>Chemical name</u>
100 LBS	91-20-3	naphthalene

#### State regulations

<u>State RTK</u>	<u>CAS Number</u>	<u>Chemical name</u>
NJ	64742-94-5	solvent naphtha
	91-20-3	naphthalene
PA	64742-94-5	solvent naphtha

#### **Safe drinking water & Toxic Enforcement Act, CA Prop 65:**

**WARNING:** This product can expose you to chemicals including BENZENE, which is known to the state of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

#### **Recommended use: for industrial use only**

#### **NFPA Hazard codes:**

Health: 1 Flammability: 2 Reactivity: 0 Special:

#### **HMIS III rating:**

Health: 1 Flammability: 2 Physical hazard: 0

HMIS uses a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard; a rating of four indicates high hazard.

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## **16. OTHER INFORMATION**

### **Disclaimer:**

The information set forth is based on information that Amine Optimization Company believes to be accurate. No warranty, expressed or implied, is intended. The information is provided solely for your information and consideration and Amine Optimization Company assumes no legal responsibility for use or reliance thereon. In the event of a discrepancy between the information on the non-English document and its English counterpart, the English version shall supersede.

Prepared by: Amine Optimization Company - Safety, Health and Environmental Affairs  
Revision date: 28-July-2018

End of Safety Data Sheet



## **Safety Data Sheet**

Prepared in accordance with the United States Hazard Communication Standard: 29 CFR 1910.1200 (2012) Revision date: 28-July-2018

### **1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**

Product name: Antifoam AF Series (AF 19)  
Product code: AF-19  
Synonyms: Antifoam, Defoamer  
Recommended use: Gas treating applications (foam control in Amine treating units)

Restrictions on use: No information available.

Supplier:  
Amine Optimization Company (a Nexo Solutions company)  
25003 Pitkin Road, Suite A100  
The Woodlands, TX 77386  
United States  
Tel: 1-832-510-8191

Emergency Telephone Number: ChemTel at 1-800-255-3924

### **2. HAZARDS IDENTIFICATION**

#### **According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200**

##### **Classification of the product**

No need for classification according to GHS criteria for this product.

##### **Label elements**

The product does not require a hazard warning label in accordance with GHS criteria.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

According to Regulation 2012 OSHA Hazard Communication Standard: 29 CFR Part 1910.1200

**This product does not contain any components classified as hazardous under the referenced regulation.**

According to Regulation 1994 OSHA Hazard Communication Standard: 29 CFR Part 1910.1200

<u>CAS Number</u>	<u>Weight %</u>	<u>Chemical name</u>
9003-11-6	100.0 %	Methyl-oxirane polymer with oxirane

### 4. FIRST AID MEASURES

#### Description of first aid measures

**General advice:** Immediately remove contaminated clothing.

If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). First aid personnel should pay attention to their own safety.

**Skin contact:** Wash affected areas with water while removing contaminated clothing. Seek medical attention.

**Eye contact:** Flush eyes immediately with large amounts of water for 15 minutes with eyelids held open. Seek medical attention.

**Inhalation:** Move affected individual to fresh air and keep person calm. Seek medical attention.

**Ingestion:** Do not induce vomiting. If conscious, immediately rinse mouth and drink plenty of water. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

#### Most important symptoms and effects, both acute and delayed

**Symptoms:** The most important known symptoms and effects are described in Section 2 and/or in Section 11.

Indication of any immediate medical attention and special treatment needed

**Note to physician:** Treat symptomatically (decontamination, vital functions), no known specific antidote.

### 5. FIRE-FIGHTING MEASURES

Revision Date: 28-July-2018

**Suitable extinguishing media:** Use foam, dry powder or water spray.

**Unsuitable extinguishing media for safety reasons:** Water jet

**Protective equipment and precautions for firefighters:**

In the event of fire, wear self-contained breathing apparatus due to harmful vapors. Wear suitable protective equipment.

**Further information:**

The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

**6. ACCIDENTAL RELEASE MEASURES**

Further accidental release measures:

Pack in tightly closed containers for disposal. May release highly flammable and/or corrosive gases/vapors.

**Personal precautions, protective equipment and emergency procedures:**

Use personal protective clothing. Keep people away and stay on the upwind side. Breathing protection required.

**Environmental Precautions:**

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

**Methods and material for containment and cleaning up:**

For large amounts: Pump off product.

For residues: Pick up with suitable absorbent material. Dispose of absorbed material in accordance with regulations.

**NOTE:** High risk of slipping due to leakage/spilling of product.

**7. HANDLING AND STORAGE**

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**Precautions for safe handling:**

Ensure thorough ventilation of stores and work areas.

**Protection against fire and explosion:**

Sources of ignition should be kept well clear. Take precautionary measures against static discharges. If delivered in plastic packing, highest permissible emptying temperature is 5° Kelvin below the flash point.

**Conditions for safe storage, including any incompatibilities:**

Segregate from acids and bases. Segregate from strong oxidizing agents.

**Further information on storage conditions:**

Keep container tightly closed and dry; store in a cool place.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

No occupational exposure limits known

**Personal protective equipment**

**Respiratory protection:**

Wear respiratory protection if ventilation is inadequate. Breathing protection if breathable aerosols/dust are formed. Wear a NIOSH-certified (or equivalent) organic vapor/particulate respirator.

**Hand protection:**

Chemical resistant protective gloves, butyl rubber- 0.7 mm coating thickness, fluoroelastomer (FKM) – 0.7mm coating thickness. Suitable materials for short-term contact (recommended: At least protective index 2, corresponding >30 minutes of permeation time according to EN 374), nitrile rubber (NBR) – 0.4mm coating thickness. Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical

usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing. Manufacturer's directions for use should be observed because of great diversity of types. When there is a risk of frostbite from escaping gas, use thermally insulated gloves (EN 511). Consult with glove manufacturer for testing data.

**Eye protection:**

Tightly fitting safety goggles (chemical goggles) with side shields and face shield.

**Body protection:**

Body protection must be chosen based on level of activity and exposure. Protective coverall and/or impermeable apron and boots as necessary.

**General safety and hygiene measures:**

Wear protective clothing as necessary to minimize contact. Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding items. Remove contaminated clothing.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Form:	Liquid
Odor:	Aromatic
Odor threshold:	No data available
Color:	Colorless
pH value:	Approx. 7 (50 g/l 23 °C)
Solidification:	Approx -25 °C
Boiling point:	> 250 °C The substance/product decomposes
Flash point:	280 °C
Melting point:	Not determined
Sublimation point:	No Data available
Flammability:	Not self-igniting
Lower explosion limit:	For liquids not relevant for classification and labeling. The lower explosion point may be 77 °C - 89 °C.
Upper explosion limit:	For liquids not relevant for classification and labeling.
Autoignition:	> 300 °C
Vapor pressure:	< 0.1 hPa (20 °C)
Density:	approx. 1.02 g/cm <sup>3</sup> (23 °C)
Relative density:	No data available.
Vapor density:	No data available.
Partitioning coefficient n-	



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octanol/water (log Pow):	Study scientifically not justified.
Self-ignition:	Not self-igniting
Viscosity, dynamic:	800 mPa.s (25 °C)
Viscosity, Kinematic:	No data available.
Solubility in water:	< 100 g/l (15 °C) Partly soluble
Solubility (quantitative):	Soluble
Solubility (qualitative):	No data available.
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.

## 10. STABILITY AND REACTIVITY

### Reactivity:

No hazardous reactions when stored and handled according to instructions

### Oxidizing properties:

Not fire-propagating

### Chemical stability:

The product is stable if stored and handled as prescribed/indicated.

### Possibility of hazardous reactions:

No hazardous reaction when stored and handled according to instructions.  
The product is chemically stable.

### Conditions to avoid:

Avoid moisture

### Incompatible materials:

Strong acids, strong bases, oxidizing agents

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**Decomposition products:**

Hazardous decomposition products. No hazardous decomposition products if stored and handled as prescribed/indicated.

**11. TOXICOLOGICAL INFORMATION**

**Primary routes of exposure:**

Routes of entry for solids and liquids are ingestion and inhalation but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

**Acute Toxicity/Effects:**

Acute toxicity

Assessment of acute toxicity: Of low toxicity after single ingestion. Virtually nontoxic by inhalation. Virtually nontoxic after a single skin contact.

Oral

Type of value: LD50 Species: rat  
Value: > 5,000 mg/kg

Dermal

Type of value: ATE Value: > 5,000 mg/kg

Skin

Species: rabbit  
Result: Slightly irritating. Method:  
Draize test

Eye

Species: rabbit Result: non-irritant Method: Draize test

Sensitization

Result: Non-sensitizing.

**Chronic Toxicity/Effects:**

Repeated dose toxicity:

Assessment of repeated dose toxicity: Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

*Information on: naphthalene*

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*Assessment of repeated dose toxicity: Repeated oral uptake of the substance did not cause substance-related effects. The substance may cause damage to the olfactory epithelium after repeated inhalation. Repeated dermal uptake of the substance did not cause substance-related effects.*

#### Genetic toxicity

Assessment of mutagenicity: Based on the ingredients, there is suspicion of a mutagenic effect.

#### Carcinogenicity

Assessment of carcinogenicity: Based on the ingredients, there is suspicion of a carcinogenic effect in humans.

Possible carcinogen. (IARC 2B)

#### *Information on: naphthalene*

*Assessment of carcinogenicity: In long term studies in rats and mice in which the substance was given by inhalation, a carcinogenic effect was observed. EU-classification the substance was classified as a group 3 carcinogen by the German MAK-Commission (substances for which a suspicion of a potential carcinogenic effect exists). IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possible carcinogenic to humans).*

#### Reproductive toxicity

Assessment of reproduction toxicity: Based on the ingredients, there is suspicion of a toxic effect on reproduction.

#### Other information

The product has not been tested. The statements on toxicology have been derived from the properties of the individual components.

#### **Symptoms of Exposure:**

The most important know symptoms and effects are described in the labeling (see section 2) and/or in section 11.

Further important symptoms and effects are so far not known.

## **12. ECOLOGICAL INFORMATION**

#### **Toxicity:**

##### Aquatic toxicity

Assessment of aquatic toxicity:

Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

**Persistence and degradability:**

Assessment biodegradation and elimination (H2O)

Not readily biodegradable (by OECD criteria). The substance can be virtually eliminated from water in suitable effluent treatment plants by biodegradation, stripping and mechanical separation.

**Bioaccumulative potential:**

Assessment bioaccumulation potential

Discharge into the environment must be avoided.

Bioaccumulation potential

*Information on naphthalene*

*Bioconcentration factor: 36.5 – 168 (56 d), Cyprinus sp. (OECD Guidelines 305 C)*

**Mobility in soil:**

Assessment transport between environmental compartments

Discharge into the environment must be avoided.

**Additional information:**

Other ecotoxicological advice:

The product has not been tested. The statements of ecotoxicology have been derived from the properties of the individual components.

**13. DISPOSAL CONSIDERATIONS**

**Disposal of wastes:**

Dispose of in accordance with national, state and local regulations. Do not discharge into drains/surface waters/groundwater. It is the waste generator's responsibility to determine if a particular waste is hazardous under RCRA.

**Container disposal:**

Dispose of in a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers. Dispose of in accordance with national, state, and local regulations.

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**WARNING:** Empty containers may still contain hazardous residue.

#### **14. TRANSPORT INFORMATION**

##### **Land Transport**

USDOT                      Not classified as dangerous in the meaning of transport regulations.

##### **Sea transport**

IMDG                        Not classified as dangerous in the meaning of transport regulations.

##### **Air transport**

IATA/ICAO                Not classified as dangerous in the meaning of transport regulations.

#### **15. REGULATORY INFORMATION**

##### **Federal Regulations**

###### **Registration status:**

Chemical TSCA, US released / listed

**EPCRA 311/312 (Hazard categories):** Not hazardous;

###### **NFPA Hazard codes:**

Health : 1 Fire: 1 Reactivity: 0 Special:

###### **HMIS III rating**

Health: 1            Flammability: 1            Physical hazard: 0

#### **16. OTHER INFORMATION**

Revision Date: 28-July-2018

**Disclaimer:**

The information set forth is based on information that Amine Optimization Company believes to be accurate. No warranty, expressed or implied, is intended. The information is provided solely for your information and consideration and Amine Optimization Company assumes no legal responsibility for use or reliance thereon. In the event of a discrepancy between the information on the non-English document and its English counterpart, the English version shall supersede.

Prepared by: Amine Optimization Company - Safety, Health and Environmental Affairs  
Revision date: 28-July-2018

End of Safety Data Sheet