

# ACROS ORGANICS

## Material Safety Data Sheet

Creation Date 03-Sep-2009

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Revision Number 1

### 1. PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name</b>	<b>N,N-Dimethylformamide</b>	
<b>Cat No.</b>	<b>AC116220000; AC116220010; AC116220025; AC116220050; AC116220250</b>	
<b>Synonyms</b>	DMF	
<b>Recommended Use</b>	Laboratory chemicals	
<b>Company</b> Fisher Scientific One Reagent Lane Fair Lawn, NJ 07410 Tel: (201) 796-7100	<b>Entity / Business Name</b> Acros Organics One Reagent Lane Fair Lawn, NJ 07410	<b>Emergency Telephone Number</b> For information in the US, call: 800-ACROS-01 For information in Europe, call: +32 14 57 52 11  Emergency Number, Europe: +32 14 57 52 99 Emergency Number, US: 201-796-7100  CHEMTREC Phone Number, US: 800-424-9300 CHEMTREC Phone Number, Europe: 703-527-3887

### 2. HAZARDS IDENTIFICATION

#### WARNING!

#### Emergency Overview

Flammable liquid and vapor. Harmful if absorbed through skin or if inhaled. May cause methemoglobinemia. Irritating to eyes and skin. Lachrymator (substance which increases the flow of tears). May cause central nervous system effects. May cause adverse liver effects. May cause adverse kidney effects. May cause harm to the unborn child.

**Appearance** Colorless

**Physical State** Liquid

**odor** rotten-egg like

**Target Organs**

Skin, Eyes, Respiratory system, Central nervous system (CNS), Blood, Liver, Kidney, spleen

**Potential Health Effects**

**Acute Effects****Principle Routes of Exposure**

<b>Eyes</b>	Irritating to eyes. Lachrymator (substance which increases the flow of tears).
<b>Skin</b>	Harmful in contact with skin. Irritating to skin.
<b>Inhalation</b>	Harmful by inhalation. May cause methemoglobinemia. Inhalation may cause central nervous system effects. May cause irritation of respiratory tract.
<b>Ingestion</b>	May be harmful if swallowed. May cause central nervous system effects. May cause adverse liver effects. May cause adverse kidney effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Chronic Effects**

May cause harm to the unborn child. Experiments have shown reproductive toxicity effects on laboratory animals. May cause adverse liver effects. May cause adverse kidney effects.

See Section 11 for additional Toxicological information.

**Aggravated Medical Conditions**      Preexisting eye disorders. Kidney disorders. Liver disorders. Skin disorders.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Haz/Non-haz**

Component	CAS-No	Weight %
Dimethylformamide	68-12-2	>95

### 4. FIRST AID MEASURES

<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
<b>Inhalation</b>	Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.
<b>Ingestion</b>	Do not induce vomiting. Call a physician or Poison Control Center immediately.
<b>Notes to Physician</b>	Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

<b>Flash Point</b>	58°C / 136.4°F
<b>Method</b>	No information available.
<b>Autoignition Temperature</b>	445°C / 833°F
<b>Explosion Limits</b>	
<b>Upper</b>	15.2 vol %
<b>Lower</b>	2.2 vol %
<b>Suitable Extinguishing Media</b>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Cool closed containers exposed to fire with water spray.

**Unsuitable Extinguishing Media** No information available.

**Hazardous Combustion Products** No information available.

**Sensitivity to mechanical impact** No information available.

**Sensitivity to static discharge** No information available.

#### Specific Hazards Arising from the Chemical

Flammable. Risk of ignition. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

#### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

**NFPA**                      **Health 2**                      **Flammability 2**                      **Instability 0**                      **Physical hazards N/A**

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions** Ensure adequate ventilation. Use personal protective equipment. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges.

**Environmental Precautions** Should not be released into the environment.

**Methods for Containment and Clean Up** Soak up with inert absorbent material. Keep in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

## 7. HANDLING AND STORAGE

**Handling** Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Do not breathe vapors or spray mist. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Use explosion-proof equipment. Take precautionary measures against static discharges.

**Storage** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Flammables area.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment.

### Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Dimethylformamide	TWA: 10 ppm Skin	(Vacated) TWA: 10 ppm (Vacated) TWA: 30 mg/m <sup>3</sup> Skin TWA: 30 mg/m <sup>3</sup> TWA: 10 ppm	IDLH: 500 ppm TWA: 30 mg/m <sup>3</sup> TWA: 10 ppm

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Dimethylformamide	TWA: 10 ppm TWA: 30 mg/m <sup>3</sup> Skin	TWA: 10 ppm TWA: 30 mg/m <sup>3</sup> STEL: 20 ppm STEL: 60 mg/m <sup>3</sup>	TWA: 10 ppm TWA: 30 mg/m <sup>3</sup> Skin

**NIOSH IDLH:** Immediately Dangerous to Life or Health

### Personal Protective Equipment

#### Eye/face Protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

#### Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

#### Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Colorless
odor	rotten-egg like
Odor Threshold	No information available.
pH	6-8 20% aq.sol.
Vapor Pressure	4.9 mbar @ 20 °C
Vapor Density	2.5 (Air = 1.0)
Viscosity	0.8 mPa.s at 20 °C
Boiling Point/Range	153°C / 307.4°F
Melting Point/Range	-61°C / -77.8°F
Decomposition temperature °C	350
Flash Point	58°C / 136.4°F
Evaporation Rate	0.17 (Butyl Acetate = 1.0)
Specific Gravity	0.945
Solubility	Soluble in water
log Pow	No data available
Molecular Weight	73.09
Molecular Formula	C <sub>3</sub> H <sub>7</sub> N O

## 10. STABILITY AND REACTIVITY

### Stability

Stable under normal conditions.

<b>Conditions to Avoid</b>	Incompatible products. Heat, flames and sparks.
<b>Incompatible Materials</b>	Strong oxidizing agents, Halogens, Halogenated compounds
<b>Hazardous Decomposition Products</b>	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Nitrogen oxides (NO <sub>x</sub> )
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions .</b>	None under normal processing..

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

<b>LC50 Inhalation (DUST) VALUE</b>	9400 mg/m <sup>3</sup> /24 (mouse)
<b>LC50 Inhalation (VAPOR) VALUE</b>	3421 ppm/h (rat)

### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Dimethylformamide	200 mg/kg ( Rat )	3.2 g/kg ( Rat )	Not listed

**Irritation** Irritating to eyes and skin

**Toxicologically Synergistic Products** No information available.

### Chronic Toxicity

**Carcinogenicity** There are no known carcinogenic chemicals in this product

**Sensitization** No information available.

**Mutagenic Effects** Mutagenic effects have occurred in humans.

**Reproductive Effects** Experiments have shown reproductive toxicity effects on laboratory animals.

**Developmental Effects** May cause harm to the unborn child. Developmental effects have occurred in experimental animals.

**Teratogenicity** Teratogenic effects have occurred in experimental animals..

**Other Adverse Effects** See actual entry in RTECS for complete information.

### Endocrine Disruptor Information

Component	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Dimethylformamide	Group III Chemical	Not applicable	Not applicable



## 14. TRANSPORT INFORMATION

### IMDG/IMO

<b>UN-No</b>	UN2265
<b>Proper Shipping Name</b>	N,N-Dimethylformamide
<b>Hazard Class</b>	3
<b>Packing Group</b>	III

## 15. REGULATORY INFORMATION

### International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Dimethylformamide	X	X	-	200-679-5	-		X	X	X	X	KE-11411 X

#### Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

### U.S. Federal Regulations

TSCA 12(b) Not applicable

### SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Dimethylformamide	68-12-2	>95	1.0

### SARA 311/312 Hazardous Categorization

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

### Clean Water Act

Not applicable

**Clean Air Act**

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Dimethylformamide	X		-

**OSHA**

Not applicable

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Dimethylformamide	100 lb	-

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**State Right-to-Know**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Dimethylformamide	X	X	X	X	X

**U.S. Department of Transportation**

Reportable Quantity (RQ): Y  
 DOT Marine Pollutant N  
 DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

**Other International Regulations**

Mexico - Grade Moderate risk, Grade 2

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**WHMIS Hazard Class**

B3 Combustible liquid  
 D1B Toxic materials  
 D2A Very toxic materials  
 D2B Toxic materials





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**16. OTHER INFORMATION**

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**Revision Summary** "\*\*\*\*", and red text indicates revision

**Disclaimer**

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

**End of MSDS**