



# SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Date of issue: 10/22/2014

Version 1.0

## SECTION 1. Identification

### Product identifier

Product number 251500  
Product name DAF-2

### Relevant identified uses of the substance or mixture and uses advised against

Identified uses Use restricted under TSCA to research and development or as analytical reagent. Uses regulated under FDA or FIFRA are not affected.  
Reagent for research and development

### Details of the supplier of the safety data sheet

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)

**Emergency telephone** 800-424-9300 CHEMTREC (USA)  
+1-703-527-3887 CHEMTREC (International)  
24 Hours/day; 7 Days/week

## SECTION 2. Hazards identification

### GHS Classification

Flammable liquid, Category 4, H227

For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

*Signal Word*  
Warning

*Hazard Statements*  
H227 Combustible liquid.

### *Precautionary Statements*

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.  
P403 + P235 Store in a well-ventilated place. Keep cool.  
P501 Dispose of contents/ container to an approved waste disposal plant.

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## Other hazards

None known.

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## SECTION 3. Composition/information on ingredients

Chemical nature Mixture

Remarks No hazardous ingredients according to the OSHA Hazard Communication Standard 29 CFR 1910.1200.

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## SECTION 4. First aid measures

### Description of first-aid measures

#### *Inhalation*

After inhalation: fresh air.

#### *Skin contact*

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

#### *Eye contact*

After eye contact: rinse out with plenty of water. Call in ophthalmologist.

#### *Ingestion*

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

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

irritant effects

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

No information available.

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## SECTION 5. Fire-fighting measures

### Extinguishing media

#### *Suitable extinguishing media*

Water, Carbon dioxide (CO<sub>2</sub>), Foam, Dry powder

#### *Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

### Special hazards arising from the substance or mixture

Mixture with combustible ingredients., Development of hazardous combustion gases or vapors possible in the event of fire., Vapors are heavier than air and may spread along floors.

### Advice for firefighters

#### *Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

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*Further information*  
none

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## SECTION 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

### Environmental precautions

No special precautionary measures necessary.

### Methods and materials for containment and cleaning up

Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

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## SECTION 7. Handling and storage

### Precautions for safe handling

Observe label precautions.

### Conditions for safe storage, including any incompatibilities

Tightly closed.

Store at -20°C (-3°F). Transport with dry ice.

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## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

Contains no substances with occupational exposure limit values.

### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

### Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

### *Hygiene measures*

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

### *Eye/face protection*

Safety glasses

### *Hand protection*

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

### *Other protective equipment:*

protective clothing

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## *Respiratory protection*

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## **SECTION 9. Physical and chemical properties**

|                             |  |
|-----------------------------|--|
| Physical state              | liquid   |
| Color                       | colorless<br>light yellow  |
| Odor                        | of solvents  |
| Odor Threshold              | No information available.  |
| pH                          | No information available.  |
| Melting point               | No information available.  |
| Boiling point/boiling range | 372 °F ( 189 °C)<br>at 1,013 hPa<br>(calculated on the pure substance) |
| Flash point                 | 189 °F ( 87 °C)<br>Method: c.c.<br>(Dimethylsulfoxide)                 |
| Evaporation rate            | No information available.  |
| Flammability (solid, gas)   | No information available.  |
| Lower explosion limit       | 1.8 %(V)<br>(Dimethylsulfoxide)  |
| Upper explosion limit       | 63.0 %(V)<br>(Dimethylsulfoxide)                                       |
| Vapor pressure              | No information available.  |
| Relative vapor density      | No information available.  |
| Density                     | ca. 1.69 g/cm <sup>3</sup><br>at 68 °F ( 20 °C)<br>(calculated)        |
| Relative density            | No information available.  |

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|  |  |
|--|--|
| Water solubility                       | No information available.  |
| Partition coefficient: n-octanol/water | Pow: ca. log Pow: 0.693 (25 °C)<br>(calculated)<br>Bioaccumulation is not expected. (Lit.) |
| Autoignition temperature               | No information available.  |
| Decomposition temperature              | No information available.  |
| Viscosity, dynamic                     | No information available.  |
| Explosive properties                   | Not classified as explosive.   |
| Oxidizing properties                   | none   |

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## SECTION 10. Stability and reactivity

### Reactivity

Forms explosive mixtures with air on intense heating.  
A range from approx. 15 Kelvin below the flash point is to be rated as critical.

### Chemical stability

Sensitivity to light  
The product is chemically stable under standard ambient conditions (room temperature) .

### Possibility of hazardous reactions

Violent reactions possible with: strong oxidizing agents, Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitosamines!

### Conditions to avoid

Strong heating.

### Incompatible materials

no information available

### Hazardous decomposition products

in the event of fire: See section 5.

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## SECTION 11. Toxicological information

### Information on toxicological effects

*Likely route of exposure*  
Eye contact, Skin contact

*Target Organs*  
Skin  
Eyes

*Skin irritation*  
Irritating to skin.

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### *Eye irritation*

Irritating to eyes.

### *Specific target organ systemic toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

### *Specific target organ systemic toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

### *Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

## **Carcinogenicity**

|       |  |
|-------|--|
| IARC  | No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |
| OSHA  | No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.             |
| NTP   | No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.                 |
| ACGIH | No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.            |

## **Further information**

Under given conditions, contact with nitrites or nitric acid can lead to the formation of nitrosamines, which have shown themselves to be carcinogenic in animal experiments.

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## **SECTION 12. Ecological information**

### **Ecotoxicity**

No information available.

### **Persistence and degradability**

No information available.

### **Bioaccumulative potential**

*Partition coefficient: n-octanol/water*

Pow: ca.

log Pow: 0.693 ( 25 °C)

(calculated)

Bioaccumulation is not expected. (Lit.)

### **Mobility in soil**

No information available.

*Additional ecological information*

Discharge into the environment must be avoided.

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## SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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## SECTION 14. Transport information

### Land transport (DOT)

Not classified as dangerous in the meaning of transport regulations.

### Air transport (IATA)

Not classified as dangerous in the meaning of transport regulations.

### Sea transport (IMDG)

Not classified as dangerous in the meaning of transport regulations.

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## SECTION 15. Regulatory information

### United States of America

#### SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

#### DEA List I

Not listed

#### DEA List II

Not listed

### US State Regulations

#### Massachusetts Right To Know

Remarks

No components are subject to the Massachusetts Right to Know Act.

#### New Jersey Right To Know

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## *Ingredients*

dimethyl sulphoxide

## **California Prop 65 Components**

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

## **Notification status**

TSCA: Not Listed on TSCA inventory. For Research and Development Use only. Not For Manufacturing or Commercial Purposes.  
DSL: This product contains one or several components that are not on the Canadian DSL nor NDSL.

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## **SECTION 16. Other information**

### **Training advice**

Provide adequate information, instruction and training for operators.

### **Labeling**

#### *Signal Word*

Warning

#### *Hazard Statements*

H227 Combustible liquid.

### **Full text of H-Statements referred to under sections 2 and 3.**

H227 Combustible liquid.

### **Key or legend to abbreviations and acronyms used in the safety data sheet**

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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