

Product Safety Summary

N,N-Dimethylacetamide

This Product Safety Summary is intended to provide a general overview of the chemical substance. The information on the Summary is basic information and is not intended to provide emergency response information, medical information or treatment information. The summary should not be used to provide in-depth safety and health information. In-depth safety and health information can be found on the Material Safety Data Sheet (MSDS) for the chemical substance.

Chemical Identity

Abbreviation:	DMAC
CAS Number:	127-19-5
Formula:	C ₄ H ₉ NO
Common Names:	Dimethylacetamide

Product Overview

- N,N-Dimethylacetamide (DMAC) is a clear, colorless to pale yellow liquid with a mild ammonia-like odor.
- DMAC is an industrial chemical typically used as a solvent.
- The primary acute hazard of DMAC exposure is eye irritation. The product may be harmful if inhaled or absorbed through the skin. Based on results of animal studies, DMAC may damage fertility and may adversely affect the developing fetus. The substance may cause damage to the liver after repeated inhalation at high doses.
- The Occupational Health and Safety Administration (OSHA) established a workplace Permissible Exposure Limit (PEL) of 10 ppm (skin) for DMAC vapor concentrations. The skin notation indicates that cutaneous exposure to DMAC liquid and vapor can contribute significantly to the total uptake of DMAC by the body. The American Conference of Governmental Industrial Hygienists (ACGIH) established a 10 ppm (skin) Time Weighted Average (TWA) limit.
- All persons associated with the transportation, storage or handling of DMAC (or products containing DMAC) must understand the hazards. This includes training in the recommended normal and emergency handling procedures.
- For further safety and health information, refer to the current Material Safety Data Sheet (MSDS).

Physical/Chemical Properties

- DMAC is a clear, colorless to pale yellow liquid with a mild ammonia-like odor.
- The pH of DMAC is 4 (200 g/l, 20°C).
- The density of DMAC is 0.94 g/cm³ (20°C).
- The boiling point range of DMAC is 165 - 166°C (329 – 330.8°F) and the melting point is -20°C (-4°F).
- The flash point of DMAC is 64°C (147.2°F). It is classified as a combustible liquid and will sustain a fire, when ignited.
- The vapor pressure of DMAC is 2.0 mbar (20°C).

- DMAC is water soluble.

Health Information

Acute Hazards

DMAC is not likely to be an acute hazard by inhalation. It is virtually nontoxic after a single ingestion. DMAC is an eye irritant. Workers must be properly instructed and supervised in the handling of DMAC.

Effects on Respiratory System:
Not acutely toxic by inhalation.

Effects on Eyes:
Exposure to DMAC may result in eye irritation.

Effects on Skin:
Not a skin irritant.

Effects on Ingestion:
Not acutely toxic by ingestion.

Chronic Hazards

Based on animal data, DMAC may impair fertility and may adversely affect the developing fetus. The substance may cause damage to the liver after repeated inhalation of high doses.

Refer to the MSDS for the most up-to-date toxicology information.

Environmental Information

There is a high probability that DMAC is not acutely harmful to aquatic organisms. Accumulation in organisms is not expected. DMAC is inherently biodegradable in the environment based on literature data.

Additional Hazard Information

Because DMAC is combustible, care must be taken when handling it to avoid exposure to flames and other sources of ignition.

The following safety recommendations must be observed:

- Store in an area designed for combustible liquids.
- Specify proper electrical equipment and adequate grounding for static electricity.
- Maintain adequate ventilation in all work areas
- Provide adequate firefighting equipment, including automatic sprinklers, in work and storage areas.

Exposure Potential

Workplace exposure should be limited by the use of engineering controls, such as ventilation and hoods. For emergency situations and some specially controlled areas, personal protective equipment, such as respirators, may be employed. In general, skin and eye exposure to organic chemicals, such as DMAC, are prevented through the use of protective eye and face equipment and impermeable gloves and clothing.

Regulations involving hazardous chemicals are continually evolving and thus exposure guidelines are reviewed regularly and modified whenever new information dictates a change. It is important to be aware of the current legislative requirements.

Risk Management

The potential hazards associated with DMAC can be avoided if workers are adequately instructed and supervised on the proper procedures for handling DMAC.

Every worker should be trained to realize that exposure to a hazardous chemical requires immediate washing of affected areas using large amounts of soap and water, and that immediate attention may markedly decrease the severity of any health effects.

Properly designed emergency showers and eyewash fountains should be placed in convenient locations wherever DMAC is used. All employees should know the location and operation of this equipment. All equipment must be frequently inspected to make sure they are in proper working condition.

Chemical resistant protective gloves should be worn when handling DMAC. Suitable glove types include butyl rubber (0.7 mm coating thickness).

Safety glasses with side shields should be worn when handling DMAC. If DMAC enters the eye, flush with water for at least 15 minutes, and consult a physician.

If vapors or mists are generated, wear a NIOSH/MSHA approved organic vapor/mist respirator. If inhaled, move the person to fresh air, and consult a physician.

If DMAC is swallowed, drink plenty of water and seek medical attention.

Federal/Science Findings

U.S Department of Labor – Occupational Safety and Health Administration (OSHA)
http://www.osha.gov/dts/chemicalsampling/data/CH_254480.html

American Conference of Governmental Industrial Hygienists (ACGIH)
<http://www.acgih.org>

National Institute for Occupational Safety and Health (NIOSH)
<http://www.cdc.gov/niosh/topics/organsolv/>

Contact Information

<http://www.basf.com>

MSDS

http://worldaccount.basf.com/wa/PublicMSDS-en_US/Search

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