

## SAFETY DATA SHEET

Creation Date 10-Nov-2010

Revision Date 28-Jan-2025

Revision Number 6

### 1. Identification

**Product Name** N,N-Dimethylformamide dimethyl acetal

**Cat No. :** AC161250000; AC161250250; AC161251000; AC161255000

**CAS No** 4637-24-5  
**Synonyms** 1,1-Dimethoxytrimethylamine; DMF-DMA

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

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

**Company**

Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

**Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

### 2. Hazard(s) identification

**Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|                                    |            |
|------------------------------------|------------|
| Flammable liquids                  | Category 2 |
| Acute Inhalation Toxicity - Vapors | Category 4 |
| Serious Eye Damage/Eye Irritation  | Category 1 |
| Skin Sensitization                 | Category 1 |

**Label Elements****Signal Word**

Danger

**Hazard Statements**

Highly flammable liquid and vapor  
May cause an allergic skin reaction  
Causes serious eye damage  
Harmful if inhaled

**Precautionary Statements****Prevention**

Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Wear protective gloves/protective clothing/eye protection/face protection  
Contaminated work clothing should not be allowed out of the workplace  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
Keep container tightly closed  
Ground/bond container and receiving equipment  
Use explosion-proof electrical/ventilating/lighting equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge

**Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
Call a POISON CENTER or doctor/physician if you feel unwell

**Skin**

If skin irritation or rash occurs: Get medical advice/attention  
Wash contaminated clothing before reuse  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
Immediately call a POISON CENTER or doctor/physician

**Fire**

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

**Storage**

Store in a well-ventilated place. Keep cool

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

None identified

### 3. Composition/information on Ingredients

| Component                                | CAS No    | Weight % |
|------------------------------------------|-----------|----------|
| Methanamine, 1,1-dimethoxy-N,N-dimethyl- | 4637-24-5 | <100     |

### 4. First-aid measures

**General Advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

|                                            |                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Inhalation</b>                          | Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.                                                                      |
| <b>Ingestion</b>                           | Do NOT induce vomiting. Call a physician or poison control center immediately.                                                                                                                                                                                                                                                                                                                      |
| <b>Most important symptoms and effects</b> | None reasonably foreseeable. Causes severe eye damage. May cause allergic skin reaction. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing |
| <b>Notes to Physician</b>                  | Treat symptomatically                                                                                                                                                                                                                                                                                                                                                                               |

## 5. Fire-fighting measures

|                                         |                                                                                                                                |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>Suitable Extinguishing Media</b>     | Water spray. Carbon dioxide (CO <sub>2</sub> ). Dry chemical. Chemical foam. Water mist may be used to cool closed containers. |
| <b>Unsuitable Extinguishing Media</b>   | No information available                                                                                                       |
| <b>Flash Point</b>                      | 7 °C / 44.6 °F                                                                                                                 |
| <b>Method -</b>                         | No information available                                                                                                       |
| <b>Autoignition Temperature</b>         | 155 °C / 311 °F                                                                                                                |
| <b>Explosion Limits</b>                 |                                                                                                                                |
| <b>Upper</b>                            | No data available                                                                                                              |
| <b>Lower</b>                            | No data available                                                                                                              |
| <b>Sensitivity to Mechanical Impact</b> | No information available                                                                                                       |
| <b>Sensitivity to Static Discharge</b>  | No information available                                                                                                       |

### Specific Hazards Arising from the Chemical

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

### Hazardous Combustion Products

Nitrogen oxides (NO<sub>x</sub>). Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

### 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**  
3

**Flammability**  
3

**Instability**  
1

**Physical hazards**  
N/A

## 6. Accidental release measures

|                                             |                                                                                                                                                                                                                                                      |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personal Precautions</b>                 | Ensure adequate ventilation. Use personal protective equipment as required. 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. |
| <b>Environmental Precautions</b>            | Should not be released into the environment.                                                                                                                                                                                                         |
| <b>Methods for Containment and Clean Up</b> | Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.                                                                        |

## 7. Handling and Storage

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Handling</b> | Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges. |
| <b>Storage.</b> | Keep away from heat, sparks and flame. Flammables area. Keep container tightly closed in a dry and well-ventilated place. Incompatible Materials. Acids. Strong oxidizing agents.                                                                                                                                                                                                                                                                                                                                 |

## 8. Exposure controls / personal protection

### Exposure Guidelines

#### Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

|                             |                                                                                                                                                                                                                  |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Engineering Measures</b> | Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Personal Protective Equipment

|                                 |                                                                                                                                                                                                                                                   |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye/face Protection</b>      | 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.                                                                       |
| <b>Skin and body protection</b> | Wear appropriate protective gloves and clothing to prevent skin exposure.                                                                                                                                                                         |
| <b>Respiratory Protection</b>   | 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. |
| <b>Recommended Filter type:</b> | Organic gases and vapours filter. Type A. Brown. conforming to EN14387.                                                                                                                                                                           |
| <b>Hygiene Measures</b>         | Handle in accordance with good industrial hygiene and safety practice.                                                                                                                                                                            |

## 9. Physical and chemical properties

|                                         |                                 |
|-----------------------------------------|---------------------------------|
| <b>Physical State</b>                   | Liquid                          |
| <b>Appearance</b>                       | Colorless                       |
| <b>Odor</b>                             | Odorless                        |
| <b>Odor Threshold</b>                   | No information available        |
| <b>pH</b>                               | 7                               |
| <b>Melting Point/Range</b>              | No data available               |
| <b>Boiling Point/Range</b>              | 102 - 104 °C / 215.6 - 219.2 °F |
| <b>Flash Point</b>                      | 7 °C / 44.6 °F                  |
| <b>Evaporation Rate</b>                 | No information available        |
| <b>Flammability (solid,gas)</b>         | Not applicable                  |
| <b>Flammability or explosive limits</b> |                                 |
| <b>Upper</b>                            | No data available               |
| <b>Lower</b>                            | No data available               |
| <b>Vapor Pressure</b>                   | No information available        |
| <b>Vapor Density</b>                    | No information available        |
| <b>Specific Gravity</b>                 | 0.890                           |
| <b>Solubility</b>                       | Hydrolyses                      |

|                                        |                          |
|----------------------------------------|--------------------------|
| Partition coefficient; n-octanol/water | No data available        |
| Autoignition Temperature               | 155 °C / 311 °F          |
| Decomposition Temperature              | > 100°C                  |
| Viscosity                              | No information available |
| Molecular Formula                      | C5 H13 N O2              |
| Molecular Weight                       | 119.16                   |

## 10. Stability and reactivity

|                                         |                                                                                                                                                                       |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Reactive Hazard</b>                  | None known, based on information available                                                                                                                            |
| <b>Stability</b>                        | Moisture sensitive.                                                                                                                                                   |
| <b>Conditions to Avoid</b>              | Extremes of temperature and direct sunlight. Keep away from open flames, hot surfaces and sources of ignition. Incompatible products. Exposure to moist air or water. |
| <b>Incompatible Materials</b>           | Acids, Strong oxidizing agents                                                                                                                                        |
| <b>Hazardous Decomposition Products</b> | Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> )                                                                                        |
| <b>Hazardous Polymerization</b>         | Hazardous polymerization does not occur.                                                                                                                              |
| <b>Hazardous Reactions</b>              | None under normal processing.                                                                                                                                         |

## 11. Toxicological information

### Acute Toxicity

#### Product Information

##### Component Information

| Component                                   | LD50 Oral  | LD50 Dermal | LC50 Inhalation               |
|---------------------------------------------|------------|-------------|-------------------------------|
| Methanamine,<br>1,1-dimethoxy-N,N-dimethyl- | Not listed | Not listed  | LC50 = 12.16 mg/L ( Rat ) 4 h |

**Toxicologically Synergistic** No information available

#### Products

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

|                        |                                                                                          |
|------------------------|------------------------------------------------------------------------------------------|
| <b>Irritation</b>      | No information available                                                                 |
| <b>Sensitization</b>   | No information available                                                                 |
| <b>Carcinogenicity</b> | The table below indicates whether each agency has listed any ingredient as a carcinogen. |

| Component                                       | CAS No    | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|-------------------------------------------------|-----------|------------|------------|------------|------------|------------|
| Methanamine,<br>1,1-dimethoxy-N,N-di<br>methyl- | 4637-24-5 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** Did not show mutagenic effects in animal experiments

**Reproductive Effects** Product is or contains a chemical which is a known or suspected reproductive hazard.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and** Inhalation of high vapor concentrations may cause symptoms like headache, dizziness,

**delayed** tiredness, nausea and vomiting: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

#### Endocrine Disruptor Information

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

#### Ecotoxicity

Do not empty into drains. Reacts with water so no ecotoxicity data for the substance is available.

**Persistence and Degradability** Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Is not likely mobile in the environment.

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

#### DOT

**UN-No** UN1993  
**Proper Shipping Name** Flammable liquid, n.o.s.  
**Technical Name** (N,N-DIMETHYLFORMAMIDE DIMETHYL ACETAL)  
**Hazard Class** 3  
**Packing Group** II

#### TDG

**UN-No** UN1993  
**Proper Shipping Name** Flammable liquid, n.o.s.  
**Hazard Class** 3  
**Packing Group** II

#### IATA

**UN-No** UN1993  
**Proper Shipping Name** Flammable liquid, n.o.s.  
**Hazard Class** 3  
**Packing Group** II

#### IMDG/IMO

**UN-No** UN1993  
**Proper Shipping Name** Flammable liquid, n.o.s.  
**Hazard Class** 3  
**Packing Group** II

## 15. Regulatory Information

#### United States of America Inventory

| Component                                   | CAS No    | TSCA | TSCA Inventory notification -<br>Active-Inactive | TSCA - EPA Regulatory<br>Flags |
|---------------------------------------------|-----------|------|--------------------------------------------------|--------------------------------|
| Methanamine,<br>1,1-dimethoxy-N,N-dimethyl- | 4637-24-5 | X    | ACTIVE                                           | -                              |

#### Legend:

**TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)**

Not applicable

**TSCA 12(b)** - Notices of Export

Not applicable

**International Inventories**

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component                                   | CAS No    | DSL | NDSL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL     |
|---------------------------------------------|-----------|-----|------|-----------|-------|------|------|------|-------|----------|
| Methanamine,<br>1,1-dimethoxy-N,N-dimethyl- | 4637-24-5 | X   | -    | 225-063-3 | X     | X    | X    | X    | X     | KE-11054 |

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)**

Not applicable

**Clean Air Act**

Not applicable

**OSHA** - Occupational Safety and Health Administration

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) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

Not applicable

**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 contains the following DHS chemicals:  
**Legend** - STQs = Screening Threshold Quantities, APA = A placarded amount

**Other International Regulations****Mexico - Grade**

No information available

## Authorisation/Restrictions according to EU REACH

| Component                                | CAS No    | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|------------------------------------------|-----------|---------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Methanamine, 1,1-dimethoxy-N,N-dimethyl- | 4637-24-5 | -                                                                   | -                                                                             | -                                                                                                     |

After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.

## REACH links

<https://echa.europa.eu/authorisation-list>

<https://echa.europa.eu/substances-restricted-under-reach>

<https://echa.europa.eu/candidate-list-table>

## Safety, health and environmental regulations/legislation specific for the substance or mixture

| Component                                | CAS No    | OECD HPV       | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|------------------------------------------|-----------|----------------|------------------------------|---------------------------|--------------------------------------------|
| Methanamine, 1,1-dimethoxy-N,N-dimethyl- | 4637-24-5 | Not applicable | Not applicable               | Not applicable            | Not applicable                             |

## Contains component(s) that meet a 'definition' of per &amp; poly fluoroalkyl substance (PFAS)?

Not applicable

## Other International Regulations

| Component                                | CAS No    | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|------------------------------------------|-----------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------|------------------------------------|
| Methanamine, 1,1-dimethoxy-N,N-dimethyl- | 4637-24-5 | Not applicable                                                                            | Not applicable                                                                           | Not applicable             | Not applicable                     |

## 16. Other Information

## Prepared By

Regulatory Affairs  
Thermo Fisher Scientific  
Email: EMSDS.RA@thermofisher.com

## Creation Date

10-Nov-2010

## Revision Date

28-Jan-2025

## Print Date

28-Jan-2025

## Revision Summary

This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

## Disclaimer

The information provided in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

**End of SDS**