

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description: 10mM Ammonium Formate in Methanol + 0.05% Formic Acid
Cat No. : MB122-1

Unique Formula Identifier (UFI) EA1P-93GG-SX0Y-W3VG

1.2. Relevant identified uses of the substance or mixture and uses advised against

| | |
|---------------------------------------|--|
| Recommended Use | Laboratory chemicals |
| Sector of use | SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU22 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen) |
| Product category | PC21 - Laboratory chemicals |
| Process categories | PROC15 - Use as a laboratory reagent see SECTION 16 for a complete list of uses for which an exposure scenario is provided as an annex |
| Environmental release category | ERC2 - Formulation of preparations ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles ERC8a - Wide dispersive indoor use of processing aids in open systems |
| Uses advised against | SU21 - Consumer uses: Private households (= general public = consumers) REACH Annex XVII Restriction - refer to SECTION 15 |

1.3. Details of the supplier of the safety data sheet

Company

UK entity/business name
Fisher Scientific UK
Bishop Meadow Road,
Loughborough, Leicestershire LE11 5RG,
United Kingdom

EU entity/business name
Thermo Fisher Scientific
Janssen Pharmaceuticaaan 3a, 2440 Geel,
Belgium

E-mail address begel.sdsdesk@thermofisher.com

1.4. 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

Poison Centre - Emergency information services

Ireland : National Poisons Information Centre (NPIC) -
01 809 2166 (8am-10pm, 7 days a week)
Malta : +356 2395 2000
Cyprus : +357 2240 5611

SAFETY DATA SHEET

10mM Ammonium Formate in Methanol + 0.05% Formic Acid

Revision Date 09-Mar-2026

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Physical hazards

Flammable liquids Category 2 (H225)

Health hazards

Acute oral toxicity Category 3 (H301)
Acute dermal toxicity Category 3 (H311)
Acute Inhalation Toxicity - Vapors Category 3 (H331)
Specific target organ toxicity - (single exposure) Category 1 (H370)

Environmental hazards

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

H225 - Highly flammable liquid and vapor

H301 + H311 + H331 - Toxic if swallowed, in contact with skin or if inhaled

H370 - Causes damage to organs

Precautionary Statements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P280 - Wear protective gloves/protective clothing

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P311 - Call a POISON CENTER or doctor/physician

2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

SAFETY DATA SHEET

10mM Ammonium Formate in Methanol + 0.05% Formic Acid

Revision Date 09-Mar-2026

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

| Component | CAS No | EC No | Weight % | GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567 |
|------------------|----------|-------------------|----------|---|
| Methyl alcohol | 67-56-1 | 200-659-6 | >99.8 | Flam. Liq. 2 (H225) Acute Tox. 3 (H301) Acute Tox. 3 (H311) Acute Tox. 3 (H331) STOT SE 1 (H370) |
| Formic acid | 64-18-6 | 200-579-1 | 0.05 | Flam. Liq. 3 (H226) Met. Corr. 1 (H290) Acute Tox. 4 (H302) Acute Tox. 3 (H331) Skin Corr. 1A (H314) Eye Dam. 1 (H318) (EUH071) |
| Ammonium formate | 540-69-2 | EEC No. 208-753-9 | <0.1 | Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT SE 3 (H335) |

| Component | Specific concentration limits (SCL's) | M-Factor | Component notes |
|----------------|--|----------|-----------------|
| Methyl alcohol | STOT Single Exp. 1 :: >= 10 STOT Single Exp. 2 :: 3 - < 10 | - | - |
| Formic acid | Flam. Liq. 3; H226: C > 85% Skin Corr. 1A; H314: C ≥ 90% Skin Corr. 1B; 314: 10% ≤ C < 90% Skin Irrit. 2; H315: 2% ≤ C < 10% Eye Dam. 1; H318: C ≥ 10% Eye Irrit. 2; H319: 2% ≤ C < 10% | - | - |

| Component | ECHA (RAC) ATE (Oral) | ECHA (RAC) ATE (Dermal) | ECHA (RAC) ATE (Inhalation) |
|-------------|--------------------------|-------------------------|--------------------------------------|
| Formic acid | Oral: ATE = 500 mg/kg bw | - | Inhalation: ATE = 7,4 mg/L (vapours) |

| Components | Reach Registration Number |
|------------|---------------------------|
| Methanol | 01-2119433307-44-0232 |

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of 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

SAFETY DATA SHEET

10mM Ammonium Formate in Methanol + 0.05% Formic Acid

Revision Date 09-Mar-2026

attention is required.

Ingestion

Do NOT induce vomiting. Call a physician or poison control center immediately.

Inhalation

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.

Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

4.2. Most important symptoms and effects, both acute and delayed

. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically. Symptoms may be delayed.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

CO₂, dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons

No information available.

5.2. Special hazards arising from the substance or mixture

Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition. Vapors may form explosive mixtures with air.

Hazardous Combustion Products

Carbon monoxide (CO), Formaldehyde.

5.3. Advice 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.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation. 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.

6.2. Environmental precautions

Should not be released into the environment.

6.3. Methods and material for containment and cleaning up

SAFETY DATA SHEET

10mM Ammonium Formate in Methanol + 0.05% Formic Acid

Revision Date 09-Mar-2026

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

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

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.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Flammables area.

Technical Rules for Hazardous Substances (TRGS) 510 Class 3
Storage Class (LGK) (Germany)

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): **EU** - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC **UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020. **IRE** - 2021 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

| Component | The United Kingdom | European Union | Ireland |
|----------------|--|--|--|
| Methyl alcohol | WEL - TWA: 200 ppm TWA; 266 mg/m ³ TWA WEL - STEL: 250 ppm STEL; 333 mg/m ³ STEL | TWA: 200 ppm 8 hr TWA: 260 mg/m ³ 8 hr Skin | TWA: 200 ppm 8 hr. TWA: 260 mg/m ³ 8 hr. STEL: 600 ppm 15 min STEL: 780 mg/m ³ 15 min Skin |
| Formic acid | STEL: 15 ppm 15 min STEL: 28.8 mg/m ³ 15 min TWA: 5 ppm 8 hr TWA: 9.6 mg/m ³ 8 hr | TWA: 5 ppm 8 hr TWA: 9 mg/m ³ 8 hr | TWA: 5 ppm 8 hr. TWA: 9 mg/m ³ 8 hr. STEL: 15 ppm 15 min STEL: 27 mg/m ³ 15 min |

Biological limit values

List source(s):

SAFETY DATA SHEET

10mM Ammonium Formate in Methanol + 0.05% Formic Acid

Revision Date 09-Mar-2026

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

See table for values

| Component | Acute effects local (Dermal) | Acute effects systemic (Dermal) | Chronic effects local (Dermal) | Chronic effects systemic (Dermal) |
|-----------------------------------|------------------------------|---------------------------------|--------------------------------|-----------------------------------|
| Methyl alcohol 67-56-1 (>99.8) | | DNEL = 20mg/kg bw/day | | DNEL = 20mg/kg bw/day |

| Component | Acute effects local (Inhalation) | Acute effects systemic (Inhalation) | Chronic effects local (Inhalation) | Chronic effects systemic (Inhalation) |
|-----------------------------------|----------------------------------|-------------------------------------|------------------------------------|---------------------------------------|
| Methyl alcohol 67-56-1 (>99.8) | DNEL = 130mg/m ³ | DNEL = 130mg/m ³ | DNEL = 130mg/m ³ | DNEL = 130mg/m ³ |
| Formic acid 64-18-6 (0.05) | | DNEL = 19 mg/m ³ | DNEL = 9.5mg/m ³ | DNEL = 9.5 mg/m ³ |

Predicted No Effect Concentration (PNEC)

See values below.

| Component | Fresh water | Fresh water sediment | Water Intermittent | Microorganisms in sewage treatment | Soil (Agriculture) |
|-----------------------------------|-----------------|---------------------------------|--------------------|------------------------------------|----------------------------|
| Methyl alcohol 67-56-1 (>99.8) | PNEC = 20.8mg/L | PNEC = 77mg/kg sediment dw | PNEC = 1540mg/L | PNEC = 100mg/L | PNEC = 100mg/kg soil dw |
| Formic acid 64-18-6 (0.05) | PNEC = 2mg/L | PNEC = 13.4mg/kg sediment dw | PNEC = 1mg/L | PNEC = 7.2mg/L | PNEC = 1.5mg/kg soil dw |

| Component | Marine water | Marine water sediment | Marine water intermittent | Food chain | Air |
|-----------------------------------|-----------------|---------------------------------|---------------------------|------------|-----|
| Methyl alcohol 67-56-1 (>99.8) | PNEC = 2.08mg/L | PNEC = 7.7mg/kg sediment dw | | | |
| Formic acid 64-18-6 (0.05) | PNEC = 0.2mg/L | PNEC = 1.34mg/kg sediment dw | | | |

8.2. Exposure controls

Engineering Measures

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

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection Wear safety glasses with side shields (or goggles) (European standard - EN 166)

Hand Protection Protective gloves

| Glove material | Breakthrough time | Glove thickness | EU standard | Glove comments |
|----------------|-----------------------------------|-----------------|-------------|-----------------------|
| Viton (R) | See manufacturers recommendations | - | EN 374 | (minimum requirement) |

Skin and body protection Long sleeved clothing.

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g.

SAFETY DATA SHEET

10mM Ammonium Formate in Methanol + 0.05% Formic Acid

Revision Date 09-Mar-2026

sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced
Recommended Filter type: low boiling organic solvent Type AX Brown conforming to EN371

Small scale/Laboratory use

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

| | | |
|--|--------------------------|--|
| Physical State | Liquid | |
| Appearance | Clear | |
| Odor | Alcohol-like | |
| Odor Threshold | No data available | |
| Melting Point/Range | No data available | |
| Softening Point | No data available | |
| Boiling Point/Range | 65 °C / 149 °F | @760 mmHg |
| Flammability (liquid) | Highly flammable | On basis of test data |
| Flammability (solid,gas) | Not applicable | Liquid |
| Explosion Limits | No data available | |
| Flash Point | 12 °C / 53.6 °F | Method - No information available |
| Autoignition Temperature | No data available | |
| Decomposition Temperature | No data available | |
| pH | 3.5 | |
| Viscosity | No data available | |
| Water Solubility | No information available | |
| Solubility in other solvents | No information available | |
| Partition Coefficient (n-octanol/water) | | |
| Component | log Pow | |
| Methyl alcohol | -0.74 | |
| Formic acid | -0.54 | |
| Vapor Pressure | 23 hPa @ 20 °C | |
| Density / Specific Gravity | 0.791 | |
| Bulk Density | Not applicable | Liquid |
| Vapor Density | No data available | (Air = 1.0) |
| Particle characteristics | Not applicable (liquid) | |

9.2. Other information

Explosive Properties Vapors may form explosive mixtures with air

SAFETY DATA SHEET

10mM Ammonium Formate in Methanol + 0.05% Formic Acid

Revision Date 09-Mar-2026

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous Polymerization Hazardous Reactions

Hazardous polymerization does not occur.
None under normal processing.

10.4. Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Incompatible products.

10.5. Incompatible materials

Strong oxidizing agents. Strong acids. Acid anhydrides. Acid chlorides. Strong bases. Metals. Peroxides.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Formaldehyde.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

(a) acute toxicity;

| | |
|------------|------------|
| Oral | Category 3 |
| Dermal | Category 3 |
| Inhalation | Category 3 |

Toxicology data for the components

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|----------------|--------------------------------|-----------------------------|-----------------------------|
| Methyl alcohol | LD50 = 1187 – 2769 mg/kg (Rat) | LD50 = 17100 mg/kg (Rabbit) | LC50 = 128.2 mg/L (Rat) 4 h |
| Formic acid | 730 mg/kg (Rat) | - | 7.85 mg/l (Rat) 4h OECD 403 |

| Component | ECHA (RAC) ATE (Oral) | ECHA (RAC) ATE (Dermal) | ECHA (RAC) ATE (Inhalation) |
|-------------|--------------------------|-------------------------|--------------------------------------|
| Formic acid | Oral: ATE = 500 mg/kg bw | - | Inhalation: ATE = 7,4 mg/L (vapours) |

(b) skin corrosion/irritation;

Based on available data, the classification criteria are not met

(c) serious eye damage/irritation;

Based on available data, the classification criteria are not met

(d) respiratory or skin sensitization;

| | |
|-------------|--|
| Respiratory | Based on available data, the classification criteria are not met |
| Skin | Based on available data, the classification criteria are not met |

| Component | Test method | Test species | Study result |
|-----------------------------------|---|--------------|-----------------|
| Methyl alcohol 67-56-1 (>99.8) | OECD Test Guideline 406 Guinea Pig Maximisation Test (GPMT) | guinea pig | non-sensitising |

SAFETY DATA SHEET

10mM Ammonium Formate in Methanol + 0.05% Formic Acid

Revision Date 09-Mar-2026

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met

(f) carcinogenicity; Based on available data, the classification criteria are not met
There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; Based on available data, the classification criteria are not met

| Component | Test method | Test species / Duration | Study result |
|-------------------------------------|-------------------------|----------------------------------|---------------------------|
| Methyl alcohol 67-56-1 (>99.8) | OECD Test Guideline 416 | Rat / Inhalation 2 Generation | NOAEC = 1.3 mg/l (air) |

(h) STOT-single exposure; Category 1
Results / Target organs Optic nerve, Central nervous system (CNS).

(i) STOT-repeated exposure; Based on available data, the classification criteria are not met
Target Organs None known.

(j) aspiration hazard; Based on available data, the classification criteria are not met
Other Adverse Effects The toxicological properties have not been fully investigated.

Symptoms / effects, both acute and delayed Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

11.2. Information on other hazards

Endocrine Disrupting Properties Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects This product contains the following substance(s) which are hazardous for the environment. .

| Component | Freshwater Fish | Water Flea | Freshwater Algae |
|----------------|--|-----------------------|--------------------|
| Methyl alcohol | Pimephales promelas: LC50 > 10000 mg/L 96h | EC50 > 10000 mg/L 24h | |
| Formic acid | Leuciscus idus: LC50 = 46-100 mg/L/96h | EC50 = 34 mg/L/48h | EC50 = 25 mg/L/96h |

| Component | Microtox | M-Factor |
|----------------|---|----------|
| Methyl alcohol | EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min EC50 = 43000 mg/L 5 min | |
| Formic acid | EC50 = 46.7 mg/L/17h | |

12.2. Persistence and degradability No information available

Persistence Persistence is unlikely, based on information available.

| Component | Degradability |
|-------------------------------------|--------------------------------|
| Methyl alcohol 67-56-1 (>99.8) | DT50 ~ 17.2d >94% after 20d |

SAFETY DATA SHEET

10mM Ammonium Formate in Methanol + 0.05% Formic Acid

Revision Date 09-Mar-2026

12.3. Bioaccumulative potential Bioaccumulation is unlikely

| Component | log Pow | Bioconcentration factor (BCF) |
|----------------|---------|-------------------------------|
| Methyl alcohol | -0.74 | <10 dimensionless |
| Formic acid | -0.54 | 0.22 dimensionless |

12.4. Mobility in soil

The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. Will likely be mobile in the environment due to its volatility. Disperses rapidly in air.

12.5. Results of PBT and vPvB assessment

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).

12.6. Endocrine disrupting properties

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

| Component | EU - Endocrine Disruptors Candidate List | EU - Endocrine Disruptors - Evaluated Substances |
|-------------|--|--|
| Formic acid | Applicable | |

12.7. Other adverse effects **Persistent Organic Pollutant** **Ozone Depletion Potential**

This product does not contain any known or suspected substance
This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused Products

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging

Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

European Waste Catalogue (EWC)

According to the European Waste Catalog, Waste Codes are not product specific, but application specific.

Other Information

Waste codes should be assigned by the user based on the application for which the product was used. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

| | |
|---|-------------------|
| <u>14.1. UN number</u> | UN1230 |
| <u>14.2. UN proper shipping name</u> | METHANOL SOLUTION |
| <u>14.3. Transport hazard class(es)</u> | 3 |
| Subsidiary Hazard Class | 6.1 |
| <u>14.4. Packing group</u> | II |

ADR

ACRMB122

SAFETY DATA SHEET

10mM Ammonium Formate in Methanol + 0.05% Formic Acid

Revision Date 09-Mar-2026

14.1. UN number UN1230
14.2. UN proper shipping name METHANOL SOLUTION
14.3. Transport hazard class(es) 3
Subsidiary Hazard Class 6.1
14.4. Packing group II

IATA

14.1. UN number UN1230
14.2. UN proper shipping name METHANOL SOLUTION
14.3. Transport hazard class(es) 3
Subsidiary Hazard Class 6.1
14.4. Packing group II

14.5. Environmental hazards No hazards identified
14.6. Special precautions for user No special precautions required.
14.7. Maritime transport in bulk according to IMO instruments Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

| Component | CAS No | EINECS | ELINCS | NLP | IECSC | TCSI | KECL | ENCS | ISHL |
|------------------|----------|-----------|--------|-----|-------|------|----------|------|------|
| Methyl alcohol | 67-56-1 | 200-659-6 | - | - | X | X | KE-23193 | X | X |
| Formic acid | 64-18-6 | 200-579-1 | - | - | X | X | X | X | X |
| Ammonium formate | 540-69-2 | 208-753-9 | - | - | X | X | KE-17235 | X | X |

| Component | CAS No | TSCA | TSCA Inventory notification - Active-Inactive | DSL | NDSL | AICS | NZIoC | PICCS |
|------------------|----------|------|---|-----|------|------|-------|-------|
| Methyl alcohol | 67-56-1 | X | ACTIVE | X | - | X | X | X |
| Formic acid | 64-18-6 | X | ACTIVE | X | - | X | X | X |
| Ammonium formate | 540-69-2 | X | ACTIVE | X | - | X | X | X |

Legend: X - Listed '-' - Not Listed **KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

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) |
|----------------|---------|---|--|---|
| Methyl alcohol | 67-56-1 | - | Use restricted. See entry 69. (see link for restriction details) Use restricted. See entry 75. (see link for restriction details) | - |
| Formic acid | 64-18-6 | - | Use restricted. See entry | - |

SAFETY DATA SHEET

10mM Ammonium Formate in Methanol + 0.05% Formic Acid

Revision Date 09-Mar-2026

| | | | | |
|------------------|----------|---|---|---|
| | | | 75. (see link for restriction details) | |
| Ammonium formate | 540-69-2 | - | - | - |

REACH links

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

Seveso III Directive (2012/18/EC)

| 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 |
|------------------|----------|---|--|
| Methyl alcohol | 67-56-1 | 500 tonne | 5000 tonne |
| Formic acid | 64-18-6 | Not applicable | Not applicable |
| Ammonium formate | 540-69-2 | Not applicable | Not applicable |

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

| Component | CAS No | OECD HPV | Restriction of Hazardous Substances (RoHS) | Basel Convention (Hazardous Waste) |
|------------------|----------|----------|--|------------------------------------|
| Methyl alcohol | 67-56-1 | Listed | Not applicable | Not applicable |
| Formic acid | 64-18-6 | Listed | Not applicable | Annex I - Y34 |
| Ammonium formate | 540-69-2 | Listed | Not applicable | Not applicable |

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

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

Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification

Water endangering class = 2 (self classification)

| Component | Germany - Water Classification (AwSV) | Germany - TA-Luft Class |
|------------------|---------------------------------------|--|
| Methyl alcohol | WGK 2 | Class I : 20 mg/m ³ (Massenkonzentration) |
| Formic acid | WGK 1 | Class I : 20 mg/m ³ (Massenkonzentration) |
| Ammonium formate | WGK1 | |

| Component | France - INRS (Tables of occupational diseases) |
|----------------|--|
| Methyl alcohol | Tableaux des maladies professionnelles (TMP) - RG 84 |

| Component | Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81) | Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC) | Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure |
|----------------|--|---|---|
| Methyl alcohol | Prohibited and Restricted | Group I | |

SAFETY DATA SHEET

10mM Ammonium Formate in Methanol + 0.05% Formic Acid

Revision Date 09-Mar-2026

| | | | |
|-----------------|---------------------------|--|--|
| 67-56-1 (>99.8) | Substances | | |
| Formic acid | Prohibited and Restricted | | |
| 64-18-6 (0.05) | Substances | | |

15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

SECTION 16: OTHER INFORMATION

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

H301 - Toxic if swallowed
H311 - Toxic in contact with skin
H331 - Toxic if inhaled
H370 - Causes damage to organs
H225 - Highly flammable liquid and vapor
H226 - Flammable liquid and vapor
H314 - Causes severe skin burns and eye damage
H315 - Causes skin irritation
H318 - Causes serious eye damage
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

DNEL - Derived No Effect Level

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

NOEC - No Observed Effect Concentration

PBT - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

Predicted No Effect Concentration (PNEC)

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

VOC - (Volatile Organic Compound)

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards On basis of test data

Health Hazards Calculation method

Environmental hazards Calculation method

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

SAFETY DATA SHEET

10mM Ammonium Formate in Methanol + 0.05% Formic Acid

Revision Date 09-Mar-2026

First aid for chemical exposure, including the use of eye wash and safety showers.
Chemical incident response training.
Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.

Creation Date 03-Aug-2011
Revision Date 09-Mar-2026
Revision Summary Not applicable.

This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.

Disclaimer

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End of Safety Data Sheet