Richest Group
No. 999, Jiangyue Rd, Minhang, Shanghai 201114, China
Tel: 0086 21 5017 5386
E-mail: inquiry@richest-group.com
Web: www.richest-group.com

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Product: N,N-Dimethylformamide (DMF)	**Revision date:** 2026-10-29	**Version:** 1.0	**Brand:** Richest

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product name	N,N-Dimethylformamide (DMF)
Synonyms	DMF; Dimethylformamide; N,N-Dimethylformamide
CAS No.	68-12-2
EC No.	200-679-5
Molecular formula	C3H7NO
Molecular weight	73.09 g/mol
Relevant identified uses	Solvent for polyurethane, acrylic fibers, pharmaceutical, pesticide, dye and electronics industries
Uses advised against	None
Company	Richest Group Ltd.
Address	No. 999, Jiangyue Rd, Minhang, Shanghai 201114, China
Telephone	+86 21 5017 5386
WhatsApp	+86 13472638548
E-mail	inquiry@richest-group.com
Website	www.richest-group.com
Emergency telephone number	+86 13472638548

SECTION 2: Hazards identification

GHS Classification	Flam. Liq. 3; Acute Tox. 5 (Oral); Acute Tox. 4 (Inhalation); Acute Tox. 4 (Dermal); Eye Irrit. 2A; Repr. 1B
Pictogram(s)	GHS02, GHS07, GHS08
Signal word	Danger
Hazard statement(s)	H226 Flammable liquid and vapor. H303 May be harmful if swallowed. H312 Harmful in contact with skin. H319 Causes serious eye irritation.

Precautionary statement(s)	P201; P202; P210; P233; P240; P241; P242; P243; P261; P264; P271; P280; P303+P361+P353; P304+P340+P312; P305+P351+P338; P312; P337+P313; P370+P378; P403+P235; P405; P501
Other hazards	Rapidly absorbed through skin.

SECTION 3: Composition/information on ingredients

Component	N,N-Dimethylformamide
CAS No.	68-12-2
EC No.	200-679-5
Classification	Flam. Liq. 3; Acute Tox. 5 (Oral); Acute Tox. 4 (Inhalation); Acute Tox. 4 (Dermal); Eye Irrit. 2A; Repr. 1B
Concentration (%)	≤100 %

SECTION 4: First aid measures

If inhaled	Remove person to fresh air. Immediately call a physician. If breathing is difficult, give oxygen; if not breathing, give artificial respiration.
In case of skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Consult a physician.
In case of eye contact	Rinse out with plenty of water. Immediately call an ophthalmologist. Remove contact lenses.
If swallowed	Make victim drink water (two glasses at most). Consult a physician.
Most important symptoms and effects	The most important known symptoms and effects are described in section 2.2 and section 11.
Indication of any immediate medical attention	Treat symptomatically.

SECTION 5: Firefighting measures

Suitable extinguishing media	Water spray, foam, carbon dioxide (CO2), dry powder
Unsuitable extinguishing media	None (no limitations of extinguishing agents are given)
Special hazards arising from the chemical	Carbon oxides, nitrogen oxides. Combustible. Vapors are heavier than air and may spread along floors. Development of hazardous combustion gases or vapours possible in the event of fire.
Advice for firefighters	Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective

	clothing. Remove container from danger zone and cool with water.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures	Do not breathe vapors/aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.
Environmental precautions	Do not let product enter drains. Risk of explosion.
Methods and materials for containment and cleaning up	Cover drains. Collect, bind, and pump off spills. Take up with liquid-absorbent material. Dispose of properly. Clean up affected area.

SECTION 7: Handling and storage

Precautions for safe handling	Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.
Conditions for safe storage, including any incompatibilities	Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Store locked up. Store under inert gas. Storage class (TRGS 510): 3.

SECTION 8: Exposure controls/personal protection

Occupational exposure limit values	PC-TWA 20 mg/m3 (China); skin notation
Biological limit values	ACGIH BEI: N-Methylformamide in urine, 15 mg/L (end of shift).
Appropriate engineering controls	Ensure adequate ventilation. Work under hood. Immediately change contaminated clothing; wash hands and face after working with substance.
Eye/face protection	Tightly fitting safety goggles (tested and approved under NIOSH (US) or EN 166 (EU))
Skin protection	Handle with chemical-resistant gloves (e.g. butyl rubber)
Body protection	Flame retardant antistatic protective clothing
Respiratory protection	Required when vapours/aerosols are generated
Thermal hazards	No specific thermal hazards under normal conditions of use.

SECTION 9: Physical and chemical properties

Physical state	Clear liquid
Colour	Colorless

Odour	Amine-like
Melting point / freezing point	-61 °C
Boiling point or initial boiling point and boiling range	153 °C
Flammability	Flammable liquid and vapor
Lower and upper explosion limit / flammability limit	Lower explosion limit: 2.2 % (V); Upper explosion limit: 16 % (V)
Flash point	57.5 °C - closed cup
Auto-ignition temperature	435 °C
Decomposition temperature	> 350 °C
pH	7 (200 g/l, 20 °C)
Kinematic viscosity	ca. 0.97 mm2/s at 20 °C
Solubility	Water: 1,000 g/l at 20 °C (miscible)
Partition coefficient n-octanol/water	log Pow: -0.85
Vapour pressure	3.77 hPa at 20 °C
Density and/or relative density	0.944 g/ml at 20 °C
Relative vapour density	2.52 (Air = 1.0)
Particle characteristics	Not applicable (liquid)

SECTION 10: Stability and reactivity

Reactivity	Forms explosive mixtures with air at elevated temperatures.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Vapor may form explosive mixtures with air at elevated temperatures.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Strong oxidizing agents
Hazardous decomposition products	Carbon oxides, nitrogen oxides (in the event of fire)

SECTION 11: Toxicological information

Acute toxicity - Oral / Inhalation / Dermal	LD50 Oral - Rat - 3,010 mg/kg; LC50 Inhalation - Rat - 4 h - 11.1 mg/l (vapour); LD50 Dermal - Rabbit - 1,500 mg/kg

Skin corrosion/irritation	Rabbit - no skin irritation
Serious eye damage/irritation	Rabbit - causes serious eye irritation
Respiratory or skin sensitization	LLNA - Mouse - negative
Germ cell mutagenicity	Not mutagenic in the Ames test (negative)
Carcinogenicity	IARC Group 3 (not classifiable as to its carcinogenicity to humans)
Reproductive toxicity	May damage the unborn child.
STOT - single exposure	Not classified (based on available data)
STOT - repeated exposure	Not classified (based on available data)
Aspiration hazard	Not classified (based on available data)

SECTION 12: Ecological information

Toxicity to fish / daphnia / algae	Fish: LC50 - Lepomis macrochirus - 7,100 mg/l - 96 h; Daphnia: EC50 - 13,100 mg/l - 48 h; Algae: ErC50 - > 1,000 mg/l - 72 h
Persistence and degradability	Readily biodegradable (100 %, 21 d)
Bioaccumulative potential	BCF: 0.3-1.2; log Pow: -0.85. Bioaccumulation is not expected.
Mobility in soil	High mobility in soil expected (very high water solubility)
Other adverse effects	None known

SECTION 13: Disposal considerations

Product disposal methods	Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging	Dispose of contaminated packaging in accordance with local regulations.

SECTION 14: Transport information

UN Number (ADR/RID, IMDG, IATA)	2265
UN Proper Shipping Name	N,N-DIMETHYLFORMAMIDE
Transport hazard class(es)	3
Packing group	III
Environmental hazards (Marine pollutant)	No (not a marine pollutant)
Special precautions for user	Keep containers upright, closed and secured during transport.

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product	EINECS: Listed (200-679-5) / TSCA: Listed / IECSC: Listed / Catalogue of Hazardous Chemicals (China): Listed

SECTION 16: Other information

Full text of H-Statements	H226 Flammable liquid and vapor. H303 May be harmful if swallowed. H312 Harmful in contact with skin. H319 Causes serious eye irritation. H332 Harmful if inhaled. H360 May damage fertility or the unborn child.
Revision date	2026-10-29
Version	1.0

Abbreviations and acronyms: CAS: Chemical Abstracts Service; EC: European Commission; EINECS: European Inventory of Existing Commercial Chemical Substances; ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road; RID: Regulation concerning the International Carriage of Dangerous Goods by Rail; IMDG: International Maritime Dangerous Goods; IATA: International Air Transport Association; TWA: Time Weighted Average; STEL: Short Term Exposure Limit; LD50: Lethal Dose 50%; LC50: Lethal Concentration 50%; EC50: Effective Concentration 50%; PBT: Persistent, Bioaccumulative and Toxic; vPvB: very Persistent and very Bioaccumulative; SDS: Safety Data Sheet.

References: ECHA - European Chemicals Agency, https://echa.europa.eu/; IPCS - International Chemical Safety Cards (ICSC), http://www.ilo.org/; HSDB - Hazardous Substances Data Bank; eChemPortal - OECD Global Portal to Information on Chemical Substances; ERG - Emergency Response Guidebook by U.S. DOT.

Disclaimer: The information in this SDS is only applicable to the specified product and is provided in good faith. It is based on the knowledge available to Richest Group Ltd. at the date of issue and is intended to describe the product for the purposes of health, safety and environmental requirements only. It does not constitute any guarantee of the properties of the product. Richest Group Ltd. shall not be held liable for any damage resulting from handling or from contact with the above product.