

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

1.1 Product identifier

Product name	FORMALDEHYDE 40%
CAS-No.	50-00-0
Product code	AR1074M

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

Identified uses	Chemical for analysis and production.
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1.3 Details of the manufacturer of the safety data sheet

Manufacturer	RCI LABSCAN LIMITED. 24 Rama 1 Road, Pathumwan, Bangkok 10330 Thailand
Telephone number	(662) 613-7911-4
Fax number	(662) 613-7915

1.4 Emergency Telephone Number

Emergency phone	(662) 613-7911-4
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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Flammable liquid and vapour (Category 3), H226
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 2), H330
Acute toxicity, Dermal (Category 3), H311
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Skin sensitization (Category 1), H317
Germ cell mutagenicity (Category 2), H341
Carcinogenicity (Category 1B), H350
Specific target organ toxicity - single exposure (Category 1), H370
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word

Danger

Hazard statement(s)

H226	Flammable liquid and vapour.
H301 + H311	Toxic if swallowed or contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.

H341	Suspected of causing genetic defects.
H350	May cause cancer.
H370	Causes damage to organs.

Precautionary statement(s)

P203	Obtain, read and follow all safety instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240	Ground and bond container and receiving equipment.
P260	Do not breathe fume/gas/mist/vapours/spray.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash hand thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302 + P361 + P354	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Immediately rinse with water for several minutes.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P354 + P338	IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P316	IF exposed or concerned: Get emergency medical help immediately.
P330	Rinse mouth.

2.3 Other hazards None

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixture

Formaldehyde

Synonyms Formaline solution, Methanal solution, Methylaldehyde solution, Oxomethane, Oxymethylene, Methylene oxide, Formic aldehyde.

CAS-No	EC-No	EC-Index-No	Formula	Molecular Weight	Weight %
50-00-0	200-001-8	605-001-00-5	HCHO	30.03 g/mol	40

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	CAS-No	Formula	Concentration (%)	Classification
Formaldehyde	50-00-0	HCHO	40	Flammable liquid and vapour (Category 3), H226 Acute toxicity, Oral (Category 3), H301 Acute toxicity, Inhalation (Category 2), H330 Acute toxicity, Dermal (Category 3), H311 Skin corrosion (Category 1B), H314 Serious eye damage (Category 1), H318 Skin sensitisation (Category 1), H317 Germ cell mutagenicity (Category 2), H341 Carcinogenicity (Category 1B), H350 Specific target organ toxicity - single exposure (Category 1), H370 Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

Hazardous ingredients according to Regulation (EC) No 1272/2008 (Continue)

Component	CAS-No	Formula	Concentration (%)	Classification
Methanol (Stabilized)	67-56-1	CH ₃ OH	4-12	Flammable liquids (Category 2), H225 Acute toxicity, Oral (Category 3), H301 Acute toxicity, Inhalation (Category 3), H331 Acute toxicity, Dermal (Category 3), H311 Specific target organ toxicity - single exposure (Category 1), Eyes, H370
Water	7732-18-5	H ₂ O	48-56	-

For the full text of the H-Statements mentioned in this Section, 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.
Inhalation	Move to fresh air in case of accidental inhalation of vapors. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus.
Skin contact	Remove contaminated clothing and wash affected skin with soap and water. If signs of poisoning appear, treat as for inhalation. Wash contaminated clothing before reuse.
Eye contact	Contaminated combustible material, e.g. clothing ignites more readily and burns fiercely. If the substance has got into the eyes, immediately wash out with plenty of water at least 15 minutes. Obtain medical attention.
Ingestion	Rinse mouth. Do not induce vomiting. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus. Obtain medical attention. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 2.2 and section 11

4.3 Indication of any immediate medical attention and special treatment needed

Not Available.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing media**

Extinguish with carbon dioxide, dry chemical, foam or water spray. In the event of fire, cool tanks with water spray.

5.2 Special hazards arising from the substance or mixture

Vapors may form explosive mixture with air at ambient temperature. Flash back possible over considerable distance.

5.3 Advice for firefighters

Wear self-contained breathing apparatus and protective suit.

5.4 Further information

Standard procedure for chemical fires. Take measures to prevent electrostatic charging. Prevent firefighting water from entering surface water or groundwater.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Do not breathe vapors or spray mist. Remove all sources of ignition. Wear a positive-pressure supplied-air respirator, flame retardant antistatic protective clothing. Shut off leaks if without risk. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

Contain or absorb leaking liquid with sand or earth, consults an expert. Prevent liquid entering sewers, basements and workpits. If substance has entered a water course or sewer or contaminated soil, advise police.

6.3 Methods and materials for containment and cleaning up

Spillage: May react with combustible substances creating fire or explosion hazard and formation of toxic fumes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Soak up with inert absorbent material (e.g. sand, silica gel or chemical absorbent pads). Prevent liquid entering sewers, basements and workpits; vapor may create explosive atmosphere. Transfer to covered steel drums. Dispose of promptly.

6.4 Reference to other sections

For disposal see **Section 13**.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Keep container tightly closed. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only in area provided with appropriate exhaust ventilation. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing. Do not empty into drains.

7.2 Conditions for safe storage, including any incompatibilities

Keep tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Keep out of direct sunlight and away from incompatible materials. Store in original container. Electrical equipment should be protected to the appropriate standard.

Storage class 3 (TRGS 510); Flammable liquids.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Appropriate engineering controls

The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Ventilation hoods and fans required when working with organic solvents or in hot melt applications.

Individual protection measures (Personal protective equipment, PPE)

Eye/face protection

Goggles giving complete protection to eyes.

Skin protection

Chemical resistant apron / flame retardant antistatic protective clothing, heavy duty work shoes.

Handle with gloves

- Full contact wears gloves from nitrile rubber material.
- Splash contact wears gloves from polychloroprene material.

The select protective gloves have to satisfy the specifications of EU Directive 89/686 EEC and standard EN 374 derived from it.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. Required when vapor/aerosols are generated filter AX (EN 371).

Environmental exposure controls

Prevent liquid entering sewers, basements and workpits.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Color	Colorless
Odor	Pungent
Odor Threshold	Not Available
pH	2.8 - 4.0 at 20°C
Melting point/range	<-15 °C
Boiling point/range	93-96 °C
Flash point	56 °C (closed cup)
Evaporation rate	Not Available
Flammability (solid, gas)	Not Available
Explosion limits: lower	7 %(V) (on formaldehyde)
upper	73 %(V) (on formaldehyde)
Vapor Pressure	1.3 hPa at 20°C
Relative vapor density	1.0
Density	1.090 g/ml at 20°C
Water solubility	Soluble at 20°C
Partition coefficient (n-octanol/water)	Not Available
Auto-Ignition temperature	Not Available
Decomposition Temperature	150 °C (on formaldehyde)
Viscosity	0.597 mPa.s at 20°C
Explosive properties	Not Explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.

SECTION 10: Stability and reactivity

10.1 Reactivity

Reducing agent, tends to polymerize.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Risk of explosion in contact with nitric acid, hydrogen peroxide, nitromethane, performic acid, peracetic acid, phenol, nitrogen dioxide (180 °C).

The substance can react dangerously with strong oxidizing agents, furfuryl alcohol, potassium permanganate, magnesium carbonate, sodium hydroxide, perchloric acid + aniline, hydrochloric acid.

The substance polymerize in contact with alkalis, nitrides, polymerization initiators.

10.4 Conditions to avoid

Heating.

10.5 Incompatible materials

Polymerization initiators, alkali metals, acid, nitrogen oxides, hydrogen peroxide, oxidizing agents, performic acid, phenol.

Unsuitable working materials: Various metals and various alloys.

10.6 Hazardous decomposition products

Carbon monoxides, Carbon dioxides, (Hazardous decomposition products from under fire condition).

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Mixture****Acute toxicity**

LD₅₀ (oral, rat): 100 mg/kg (formaldehyde).

LD₅₀ (dermal, rabbit): 270 mg/kg (formaldehyde).

LC₅₀ (inhalation, rat): 0.578 mg/l /4h (formaldehyde).

Skin corrosion/irritation

Burn, risk of skin sensitization.

Serious eye damage/eye irritation

Burn, lacrimal irritation due to vapors.

Respiratory or skin sensitization

Causes sensitization.

Germ cell mutagenicity

Evidence of genetic defects.

Carcinogenicity

Owing possible carcinogenic effects for man.

Reproductive toxicity

No impairment of reproductive performance in animal experiments.

Specific target organ toxicity (STOT) - single exposure

Causes damage to organs (Eyes).

Specific target organ toxicity (STOT) - repeated exposure

Not Available

Aspiration hazard

Not Available

Further information

Systemic effects; narcosis and blindness.

The product should be handled with the care usual when dealing with chemicals.

SECTION 12: Ecological information**Mixture****12.1 Toxicity**

Toxicity to fish

LC₅₀ P. promelas : 24 mg/l/96h (formaldehyde).

LC₅₀ Danio rerio : 41 mg/l/96h (formaldehyde).

Toxicity to daphnia

EC₅₀ Daphnia magna : 2 mg/l/48h (formaldehyde).

and other aquatic invertebrates

Toxicity to algae

IC₅ Sc.quadricauda: 2.5 mg/l/8d (formaldehyde)

Toxicity to bacteria

EC₅₀ Photobacterium phosphoreum : 8.5 mg/l/30min (formaldehyde).

EC₅ M.aeruginosa : 0.39 mg/l /8d (formaldehyde).

12.2 Persistence and degradability

Biodegradability

97.4% /5d, Readily biodegradable.

12.3 Bioaccumulative potential

Partition coefficient (n-octanol/water)

Not Available

12.4 Mobility in soil

Not Available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Toxic for aquatic organisms. Protoplasmatic toxin. Caustic even in diluted form. Disinfectant effect. Toxic effect on fish and plankton. Sludge decomposition impaired or not possible even in diluted concentration. Endangers drinking water supplies if allowed to enter soil and/or waters in large quantities.

Do not allow to enter waters, waste water or soil.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding law and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste or burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Contaminated packaging

Disposal in compliance with official regulations. Handle contaminated packaging as hazardous waste in the same way of the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

SECTION 14: Transport information

Land Transport (ADR/RID)

UN Number

1198

UN proper shipping name

FORMALDEHYDE SOLUTION, FLAMMABLE

Transport hazard class(es)

3 (8)

Packing group

III

Environmental hazards

No

Special precautions for user

Yes

Sea transport (IMDG)

UN Number

1198

UN proper shipping name

FORMALDEHYDE SOLUTION, FLAMMABLE

Transport hazard class(es)

3 (8)

Packing group

III

Marine pollutant

No

Special precautions for user	Yes
EmS	F-E S-C

Air transport (IATA)

UN Number	1198
UN proper shipping name	FORMALDEHYDE SOLUTION, FLAMMABLE
Transport hazard class(es)	3 (8)
Packing group	III
Environmental hazards	No
Special precautions for user	No

River transport (AND/ADNR)

(Not examined)

SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

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

Not Available

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

SECTION 16: Other information**Recommended restrictions**

Take notice of labels and safety data sheets for the working. Chemicals Take necessary action to avoid static electricity discharge.

Reference

Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Labelling according to EC Directives 67/548 EEC and Regulation (EC) No 1272/2008.

Transportation information according to Recommendations on the Transport of Dangerous Goods, Model Regulations. Twelfth revised edition. United Nations.

Institute for Occupational Safety and Health of the German Social Accident Insurance in Sankt Augustin/Germany, Source: IFA for Databases on hazardous substances (GESTIS).

Further information

Contact to RCI Labscan Limited.

Revision Date

10/04/2025

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 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.