



OCI Company Ltd.

MSDS

Formalin 35-38%

Section 1 - Chemical Product and Company Identification

TRADE NAMES : Formalin 35-38%

Recommended use : Not available

Restriction of use : Not available

Company Identification

Company : OCI Company Ltd.

Address : 94, Sogong-ro, Jung-gu, Seoul, Korea

Tel No. : 82 - 2 - 727 - 9494

Section 2 - Hazards Identification

- 1) Hazard Classification
- Acute toxicity (Oral) : 3
 - Acute toxicity (Skin) : 3
 - Acute toxicity (Inhale) : 1
 - Skin corrosion/irritation : 2
 - Serious eye damage / Eye irritation : 2
 - Respiratory sensitization : 1
 - Skin sensitization : 1
 - Germ cell mutagenicity : 2
 - Carcinogenicity : 1A
 - Reproductive toxicity : 1B
 - Specific target organ toxicity following single exposure: 1
 - Specific target organ toxicity following repeated exposure : 1

2) Warning signal

Symbol



Signal word

Danger

Hazard statement

H301 Toxic if swallowed
 H311 Toxic in contact with skin
 H330 Fatal if inhaled
 H315 Causes skin irritation

H319 Causes serious eye irritation
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
H317 May cause an allergic skin reaction
H341 Suspected of causing genetic defects
H350 May cause cancer
H360 May damage fertility or the unborn child
H370 Causes damage to organs
H372 Causes damage to organs through prolonged or repeated exposure

Prevention precautionary statements

P201 Obtain special instructions before use
P202 Do not handle until all safety precautions have been read and understood
P260 Do not breathe dust/fume/gas/mist/vapours/spray
P261 Avoid breathing dust/fume/gas/mist/vapours/spray
P264 Wash thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P271 Use only outdoors or in a well-ventilated area
P272 Contaminated work clothing should not be allowed out of the workplace
P280 Wear protective gloves/protective clothing/eye protection/face protection
P284 Wear respiratory protection
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+P352 IF ON SKIN: Wash with plenty of soap and water
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308+P311 IF exposed or concerned : Call a POISON Center/doctor/
P308+P313 IF exposed or concerned: Get medical advice/attention
P310 Immediately call a POISON CENTER or doctor/physician
P312 Call a POISON CENTER or doctor/physician if you feel unwell
P314 Get medical advice/attention if you feel unwell.
P320 Specific treatment is urgent
P321 Specific treatment
P330 Rinse mouth
P332+P313 If skin irritation occurs: Get medical advice/attention
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
P362+P364 Take off contaminated clothing and wash it before reuse.
P403+P233 Store in a well-ventilated place. Keep container tightly closed
P405 Store locked up.
P501 Dispose of contents/container to the related laws.

3) NFPA

Formalin

Health Rating 3

Flammability Rating 4

Reactivity Rating 0

Methanol

Health Rating 1

Flammability Rating 3

Reactivity Rating 0

Water

Health Rating 0

Flammability Rating 0

Reactivity Rating 0

Section 3 - Composition, Information on Ingredients

COMPONENT: Formalin

CAS No.: 50-00-0

PERCENTAGE: 35 - 40

COMPONENT: Methanol

CAS No.: 67-56-1

PERCENTAGE: 10 - 15

COMPONENT: Water

CAS No.: 7732-18-5

PERCENTAGE: 45 - 50

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Ingestion: If swallowed and the victim is conscious, dilute, inactivate, or absorb the ingested formaldehyde by giving milk, activated charcoal, or water. Any organic material will inactivate formaldehyde. Keep affected person warm and at rest. Get medical attention immediately. If vomiting occurs, keep head lower than hips.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician

Section 5 - Fire Fighting Measures

Explosion: Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Containers may explode when involved in a fire.

Fire Extinguishing Media: Water spray, dry chemical, alcohol foam, or carbon dioxide.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Water may be used to flush spills away from exposures and to dilute spills to non-flammable mixtures.

Section 6 - Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

Section 7 - Handling and Storage

Store in a tightly closed container. Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Wear special protective equipment (Sec. 8) for maintenance break-in or where exposures may exceed established exposure levels. Wash hands, face, forearms and neck when exiting restricted areas. Shower, dispose of outer clothing, change to clean garments at the end of the day. Avoid cross-contamination of street clothes. Wash hands before eating and do not eat, drink, or smoke in workplace. Protect from freezing. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

Section 8 - Exposure Controls, Personal Protection

Airborne Exposure Limits:

-OSHA Permissible Exposure Limit (PEL):

0.75 ppm (TWA), 2 ppm (STEL), 0.5 ppm (TWA) action level for formaldehyde
200 ppm (TWA) for methanol

-ACGIH Threshold Limit Value (TLV):

0.3 ppm Ceiling formaldehyde, Sensitizer, A2 Suspected Human Carcinogen
200 ppm (TWA) 250 ppm (STEL) skin for methanol

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Section 9 - Physical and Chemical Properties

Appearance: Clear liquid

Odor: Pungent odor

pH: 2.8 – 4.0

Vapor Pressure: Not available

Vapor Density: Not available

Evaporation Rate: Not available

Flammability (solid, gas): Not available

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: Not available.

Decomposition Temperature: Not available

Solubility: Soluble

Specific Gravity/Density: 1.086

Section 10 - Stability and Reactivity

Stability: Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products: May form carbon dioxide, carbon monoxide, and formaldehyde when heated to decomposition.

Hazardous Polymerization: Trioxymethylene precipitate can be formed on long standing at very low temperatures. Nonhazardous polymerization may occur at low temperatures, forming paraformaldehyde, a white solid.

Incompatibilities: Incompatible with oxidizing agents and alkalis. Reacts explosively with nitrogen dioxide at ca. 180C (356F). Reacts violently with perchloric acid, perchloric acid-aniline mixtures, and nitromethane.

Conditions to Avoid: Heat, flames, ignition sources and incompatibles.

Section 11 - Toxicological Information

Oral : LD50 : 600 ~ 700mg/kg (Rat)

Skin : LD50 : 270 mg/kg (Rabbit)

Gas : LD50 : 480ppm 4hr (Rat)

Section 12 - Ecological Information

Environmental Fate:

The following statements refer to the environmental fate of formaldehyde. When released into the soil, this material is expected to leach into groundwater. When released into water, this material is expected to readily biodegrade. When released into water, this material is not expected to evaporate significantly. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to be readily degraded by photolysis. When released into the air, this material is expected to be readily removed from the atmosphere by dry and wet deposition. When released into the air, this material is expected to have a half-life of less than 1 day. The following statements refer to the environmental fate of

methanol. When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material is expected to readily biodegrade. When released into the water, this material is expected to have a half-life between 1 and 10 days. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition. When released into air, this material is expected to have a half-life between 10 and 30 days.

Environmental Toxicity:

The following toxicity information is for the formaldehyde portion.

96 Hr LC50 fathead minnow: 24.1 mg/L (flow-through);

96 Hr LC50 bluegill: 0.10 mg/L (flow-through);

96 Hr EC50 water flea: 20 mg/L.

The methanol portion is expected to be slightly toxic to aquatic life. The LC50/96-hour values for fish are between 10 and 100 mg/l.

Section 13 - Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Section 14 - Transport Information

UN Number: 2209

Shipping Name: FORMALDEHYDE SOLUTION with not less than 25% formaldehyde

Hazard Class: 8

Packing Group: III

Marine Pollutant: : No data available

Safety measures : Fire F-A, Flow out S-B

Section 15 - Regulatory Information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

FORMALDEHYDE CERCLA Hazardous Substance List (40 CFR 302.4):

FORMALDEHYDE Reportable quantity: 100 lbs.

METHYL ALCOHOL Reportable quantity: 5000 lbs.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

X Acute (Immediate) X Chronic (Delayed) X Fire Reactive Pressure Generating

SARA 302 Extremely hazardous substance

Chemical identity RQ Threshold Planning Quantity

FORMALDEHYDE 100 lbs. 500 lbs.

SARA 304 Emergency release notification

Chemical identity RQ
 FORMALDEHYDE 100 lbs.
 METHYL ALCOHOL 5000 lbs.

SARA 311/312 Hazardous chemical

Chemical identity Threshold Planning Quantity
 FORMALDEHYDE 500 lbs
 METHYL ALCOHOL 500 lbs

SARA 313 (TRI reporting)

Chemical identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
FORMALDEHYDE	10000 lbs	25000 lbs.
METHYL ALCOHOL	10000 lbs	25000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

FORMALDEHYDE
 Reportable quantity: 100 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

FORMALDEHYDE
 Threshold quantity: 15000 lbs

US state regulations**US. California Proposition 65**

FORMALDEHYDE Carcinogenic.
 METHYL ALCOHOL Developmental toxin. WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

US. New Jersey Worker and Community Right-to-Know Act

FORMALDEHYDE Listed
 METHYL ALCOHOL Listed

US. Massachusetts RTK - Substance List

FORMALDEHYDE Listed
 METHYL ALCOHOL Listed

US. Pennsylvania RTK - Hazardous Substances

FORMALDEHYDE Listed
 METHYL ALCOHOL Listed

US. Rhode Island RTK

FORMALDEHYDE Listed
 METHYL ALCOHOL Listed

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EU EINECS List:	On or in compliance with the inventory
EU ELINCS List:	Not in compliance with the inventory.
Japan (ENCS) List:	On or in compliance with the inventory
EU No Longer Polymers List:	Not in compliance with the inventory.
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.

Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Switzerland Consolidated Inventory:	Not in compliance with the inventory.
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

Section 16 - Other Information

Sources : KOSHA, National Emergency Management Agency

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