

SAFETY DATA SHEET

LANDROL II

SDS Revision Date: 02/24/2015



1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Identifiers

Product Identity	Landrol II
Alternate Names	Embalming Chemical, Mixture

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

Identified Uses	Embalming Chemical, Tissue Preservative, Sundry
Application Method	See Technical Data Sheet

1.3 Details of the supplier of the safety data sheet

Company Name	Hydrol Chemical Company, Inc. 520 Commerce Drive Yeadon, PA 19050
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1.4 Emergency telephone number

CHEMTREC (USA)	(800) 424-9300
Customer Service	
Hydrol Chemical Company, Inc.	(800) 345-8200 (610) 622-3603

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids 3; H226	Flammable liquid and vapor.
Acute toxicity 4; H302	Harmful if swallowed.
Acute toxicity 3; H311	Toxic in contact with skin.
Acute toxicity 2; H330	Fatal if inhaled.
Skin corrosion 1B; H314	Causes severe skin burns and eye damage.
Eye damage 1; H318	Causes serious eye damage.
Skin sensitivity 1; H317	May cause an allergic skin reaction.
Mutagenicity 2; H341	Suspected of causing genetic defects.
Carcinogenicity 1B; H350	May cause cancer.
STOT – single exposure 1; H370	Causes damage to organs.
Acute aquatic toxicity 3; H402	Harmful to aquatic life.

2.2 GHS Label elements, including precautionary statements

Pictogram:



Signal word: Danger

Hazard statements:

H226 Flammable liquid and vapor.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H330 Fatal if inhaled.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H370 Causes damage to organs.
H402 Harmful to aquatic life.

Precautionary statements:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat / sparks / open flames / hot surfaces – No smoking.
P241 Use explosion-proof electrical / ventilating / light / equipment.
P260 Do not breathe dust / fume / gas / mist / vapors / 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.
P273 Avoid release to the environment.
P280 Wear protective gloves / eye protection / face protection.
P284 Wear respiratory protection.

Response statements:

P301+330+331 IF SWALLOWED: Rinse mouth. Do Not induce vomiting.
P302+352 IF ON SKIN: Wash with plenty of soap and water.
P303+361+353 IF ON SKIN (or hair): Remove / Take all contaminated clothing immediately. Rinse skin with water / shower.
P304+312 IF INHALED: Call a POISON CENTER or doctor / physician if you feel unwell.
P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
P307+311 IF exposed, call a POISON CENTER or doctor / physician.
P308+313 If exposed or concerned: Get medical advice / attention.
P310 Immediately call a POISON CENTER or doctor / physician.
P320 Specific treatment is urgent (see information on this label).
P333+313 IF skin irritation or a rash occurs: Get medical advice or attention.
P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P363 Wash contaminated clothing before reuse.
P370+378 In case of fire: Use alcohol resistant foam, CO₂, powder, water spray for extinction. Do not use water jet.
P391 Collect spillage.

Storage statements:

P403+233 Store in a well ventilated space. Keep container tightly closed.
P405 Store locked up.

Disposal statements:

P501 Dispose of contents / container in accordance with local / national regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances Regulations.

<u>Ingredient / Chemical Designations</u>	<u>Weight %</u>	<u>GHS Classification</u>	<u>Notes</u>
Formaldehyde CAS Number: 0000050-00-0	10 – 25	Acute Toxicity 3; H331 Acute Toxicity 3; H311 Acute Toxicity 3; H301 Carcinogenicity 1B; H350 Mutagenicity 2; H341 Skin Corrosivity 1B; H314 Skin Sensitivity 1; H317	(1)(2)
Methanol CAS Number: 0000067-56-1	10 – 25	Flammable Liquid 2; H225 Acute Toxicity 3; H331 Acute Toxicity 3; H311 Acute Toxicity 3; H301 STOT SE 1; H370	(1)(2)
Chloroform CAS Number: 0000064-66-3	1 – 5	Acute Toxicity 3; H331 Acute Toxicity 4; H302 STOT SE 3	(1)(2)
Glutaraldehyde CAS Number: 0000050-00-0	1 – 5	Acute Toxicity 3; H331 Acute Toxicity 3; H301 Skin Corrosivity 1B; H314 Skin Sensitivity 1; H317	(1)(2)

(1) Substance classified with a health or environmental hazard.

(2) Substance with a workplace exposure limit.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General: Move victim to fresh air.
Call 911 or emergency medical service.
Give artificial respiration if victim is not breathing.
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. Administer oxygen if breathing is difficult.
Remove and isolate contaminated clothing and shoes.
In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
Keep victim warm and quiet.
Effects of exposure (inhalation, ingestion, or skin contact) to substance may be delayed.
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Inhalation: Move victim to fresh air. Call emergency medical care. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult.

- Eyes:** Irrigate copiously with clean, fresh water for at least 15 minutes, holding eyelids apart, and seek medical attention.
- Skin:** Remove and isolate contaminated clothing and shoes. In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes. Shower and wash with soap and water. Keep victim warm and quiet.
- Ingestion:** **If substance is swallowed, Call Physician Or Poison Control Center For Most Current Information. Ingestion is life threatening.**
Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow.
Victims of chemical exposure must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take copy of label and SDS with victim to a health professional.

4.2 Most important symptoms and effects, both acute and delayed

- Overview** Acute: Severe irritation of the tissue that had contact with the substance (skin, eyes, mucous membranes). Drowsiness, fatigue, confusion may be experienced after inhalation or ingestion of the substance.
- Chronic: Methanol is eliminated slowly from the body; Therefore, repeated exposures may build up to toxic levels in body tissues. Animal studies show long term exposures to methanol damages the CNS, kidneys or liver, skin disorders, and birth defects.
- Symptoms of overexposure by route of exposure: Methanol may be harmful if swallowed, inhaled, or injected into skin. Methanol may cause skin and eye irritation or damage. Methanol can be very irritating to mucous membranes and the respiratory tract.
- Inhalation: Inhalation of Methanol vapors may lead to irritation of the nose and throat. Symptoms of overexposure may include dizziness, coughing, headache, dyspnea, lachrymation, nausea, and vomiting. Exposure to high concentrations of this material vapor may cause unconsciousness or death.
- Primary routes of entry: Inhalation, skin contact, eyes, ingestion.
- Target organs: CNS, eyes, circulatory and respiratory systems.
- Contact with skin or eyes: Methanol is an eye and skin irritant. Splashes in the eye may cause eye irritation, redness, tearing, and temporary corneal damage or blindness.
- Skin absorption: Methanol is absorbed through the skin and may result in effects similar to inhalation exposure.
- Ingestion: Ingestion of one to four ounces of Methanol can cause irreversible damage to the nervous system, blindness, or death. It cannot be made non-poisonous. Aspiration of the material into the lungs can cause chemical pneumonitis.
- Injection: Injection of Methanol can lead to redness and irritation of the surrounding tissue. Possible cancer hazard. Contains an ingredient which may cause cancer based on animal data (see Section 3 and Section 15 for each ingredient). Risk of cancer depends on duration and level of exposure. Exposure to solvent vapor concentrations from the component solvents in excess of the stated occupational exposure limits may result in adverse health effects such as mucous membranes and respiratory system irritation and adverse effects on the kidneys, liver, and CNS. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness, and in extreme cases, loss of consciousness.
- Repeated or prolonged contact with the substance may cause removal of natural fat from the skin resulting in dryness, irritation, and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of the liquid in the eyes may cause irritation and soreness with possible reversible damage. See Section 2 for further details.

Inhalation: Fatal if inhaled. Causes damage to organs.

Eyes: Causes serious eye damage.

Skin: Toxic in contact with skin. May cause an allergic skin reaction. Causes severe skin burns and eye damage.

Ingestion: Harmful if swallowed.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Dry chemical, foam, carbon dioxide, and water fog.

5.2 Special hazards arising from the substance or mixture

May form formaldehyde gas, carbon oxides, hydrogen, formic acid, and various hydrocarbons. Incomplete combustion may also produce irritating smoke and toxic or irritating gases or fumes.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat / sparks / open flames / hot surfaces – No smoking.

Use explosion-proof electrical / ventilation / lighting / equipment.

Do not breathe mist / vapors / spray.

5.3 Advice for fire-fighters

Wear positive pressure self-contained breathing apparatus (SCBA).

Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection in fire situations ONLY; It is not effective in spill situations where direct contact with the substance is possible.

Flammable / combustible material.

May be ignited by heat, sparks, or flames.

Vapors may form explosive mixtures with air.

Vapors may travel to source of ignition and flash back.

Most vapors are heavier than air. They will spread along the ground and collect in low, or confined areas (sewers, basements, tanks, etc.)

Vapor explosion hazard indoors, outdoors, or in sewers.

Those substances designated with a (P) may polymerize explosively when heated or involved in a fire.

Runoff to sewer may create fire or explosion hazard.

Containers may explode when heated.

Many liquids are lighter than water.

May cause toxic effects if inhaled or ingested / swallowed.

Contact with substance may cause severe burns to skin and eyes.

Fire will produce irritating, corrosive, and/or toxic gases.

Vapors may cause dizziness or suffocation.

Runoff from fire control or dilution water may cause pollution.

ERG Guide No. 132

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment, and emergency procedures

Water spray may reduce vapor, but may not prevent ignition in closed spaces.

6.2 Environmental precautions

Do not allow spills to enter drains or watercourses.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or use of the toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3 Methods and material for containment and cleanup

Vapor is heavier than air and may flow along surface to distant ignition source and flash back.

CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper is not available or no answer to call, refer to appropriate telephone number listed on the inside back cover of ERG.

As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.

Keep unauthorized personnel away.

Stay upwind.

Keep out of low areas.

Ventilate closed spaces before entering.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

See Section 2 for further details.

7.2 Conditions for safe storage, including any incompatibilities

Handle containers carefully to prevent damage and spillage.

Incompatible materials: Avoid contact with strong oxidizers / alkalis / mineral acids / phenol / urea.

See Section 2 for further details.

7.3 Specific end use(s)

No data available.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 Control parameters

	Exposure	
<u>Ingredient / Chemical Designations</u>	<u>Source</u>	<u>Value</u>
Formaldehyde CAS Number: 0000050-00-0	OSHA ACGIH NIOSH Supplier	TWA 0.75 ppm, STEL 2 ppm TWA 0.3 ppm Ceiling: 1 ppm S, A2, 1 Ca TWA 0.016 ppm C 0.1 ppm (15 min) No established limit
Methanol CAS Number: 0000067-56-1	OSHA ACGIH NIOSH Supplier	TWA 200 ppm (260 mg/m ³) TWA 200 ppm, STEL 250 ppm Skin TWA 200 ppm (260 mg/m ³), STEL 250 ppm (325 mg/m ³) Skin No established limit
Chloroform CAS Number: 0000067-66-3	OSHA ACGIH NIOSH Supplier	TWA 2 ppm (9.78 mg/m ³) [vacated] TWA 10 ppm, STEL no data available No data available No established limit
Glutaraldehyde CAS Number: 0000111-30-8	OSHA ACGIH NIOSH Supplier	TWA 0.2 ppm (0.80 mg/m ³) Ceiling TLV 0.05 ppm No data available No established limit

Carcinogen Data

<u>Ingredient / Chemical Designations</u>	<u>Source</u>	<u>Value</u>
Formaldehyde CAS Number: 0000050-00-0	OSHA NTP IARC	Select Carcinogen: Yes Known: Yes; Suspected: Yes Group 1: Yes; Group 2a, 2b, 3, 4: No
Methanol CAS Number: 0000067-56-1	OSHA NTP IARC	Select Carcinogen: No Known: No; Suspected: No Group 1, 2a, 2b, 3, 4: No
Chloroform CAS Number: 0000067-66-3	OSHA NTP IARC	Select Carcinogen: Yes Known: Yes; Suspected: Yes Group 1, 3, 4: No; Group 2: Yes
Glutaraldehyde CAS Number: 0000111-30-8	OSHA NTP IARC	Select Carcinogen: No Known: No; Suspected: No Group 1, 2a, 2b, 3, 4: No

8.2 Exposure controls

Respiratory	Not necessary where area is properly ventilated.
Eyes	Wear safety eyewear; safety glasses, goggles, or visors to protect against splashing liquid.
Skin	Wear overalls which cover the body, arms, and legs. Skin should not be exposed. All parts of the body should be washed after contact. Wear PVC, vinyl, nitrile, or latex gloves.
Engineering Controls	Provide adequate ventilation. If the use of local exhaust ventilation is insufficient to maintain vapor levels below occupational exposure limits, suitable respiratory protection must be worn.
Other Work Practices	Use good personal hygiene. Wash hands before eating, drinking, smoking, or toileting. Promptly remove soiled clothing; wash thoroughly before reuse.

See Section 2 Precautionary Statements for further details.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Opaque, reddish-pink colored liquid
Odor	Slightly perfumed, pungent
Odor threshold	No data available
pH	7.0 – 8.0
Melting pt. / freezing pt.	No data available
Initial boiling pt. and boiling range	90-92C (195-199°F)
Flash point (TCC)	52-54C (128-131°F)
Evaporation rate (Bu Acetate = 1)	Less than 1
Flammability (solid, gas)	Not applicable
Upper/Lower flammability or explosion limits	Lower explosive limit: 7% Upper explosive limit: 73%
Vapor pressure (Pa)	No data available
Vapor density	Greater than 1
Specific gravity	1.050-1.060
Solubility in water	Complete
Partition coefficient n-octanol/water (log Pow)	No data available
Auto-ignition temperature (C)	No data available
Decomposition temperature (C)	No data available
Viscosity (cps)	No data available

9.2 Other information

No other relevant information.

10. STABILITY AND REACTIVITY

10.1 Reactivity

Hazardous polymerization will not occur.

10.2 Chemical stability

Stable under recommended storage/handling conditions. May form formic acid and methanol at elevated temperatures.

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

Avoid heat and open flame. Exposure to cold may form methylene oxide as a precipitant.

10.5 Incompatible materials

Avoid contact with strong oxidizers, strong alkalis, strong mineral acids, and urea.

10.6 Hazardous decomposition products

May form formaldehyde gas, carbon oxides, hydrogen, and formic acid. Incomplete combustion may also produce irritating smoke, and/or toxic vapors or gases.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Exposure to solvent vapor concentrations from the component solvents greater than the occupational exposure limits may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidneys, liver, and CNS. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness, and in extreme cases, loss of consciousness.

Repeated or prolonged contact with the substance may cause removal of natural fat from the skin resulting in dryness, irritation, and possible non-allergic dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eyes may cause irritation and soreness with possible reversible damage.

Ingredient / Chemical Designations	Oral LD50 (mg/kg)	Skin LD50 (mg/kg)	Inhalation Vapor LD50 (mg/L/4hr)	Inhalation Dust/Mist LD50 (mg/L/4hr)	Inhalation Gas LD50 (ppm)
Formaldehyde CAS Number: 0000050-00-0	800.00, Rat - Category: 4	270.00, Rabbit - Category: 3	0.578, Rat - Category: 2	No data available	168.00, Rat - Category: N/A
Methanol CAS Number: 0000067-56-1	143.00, Human - Category: 3	15,800.00, Rabbit - Category: N/A	128.00, Rat - Category: N/A	No data available	64,000.00, Rat - Category: N/A
Chloroform CAS Number: 0000067-66-3	900.00, Rat - Category: 4	20,000.00, Rabbit - Category: N/A	8.00, Rat - Category: 2	No data available	No data available
Glutaraldehyde CAS Number: 0000111-30-8	No data available	No data available	No data available	No data available	No data available

Item	Category	Hazard
Acute Toxicity (mouth)	4	Harmful if swallowed
Acute Toxicity (skin)	3	Toxic in contact with skin
Acute Toxicity (inhalation)	2	Fatal if inhaled
Skin Corrosion / Irritation	1B	Causes severe skin burns and eye damage
Eye Damage / Irritation	1	Causes serious eye damage
Sensitization (respiratory)	-	N/A
Sensitization (skin)	1	May cause an allergic reaction
Germ Toxicity	2	Suspected of causing genetic defects
Carcinogenicity	1B	May cause cancer
Reproductive Toxicity	-	N/A
Specific Target Organ Systemic Toxicity (single exposure)	1	Causes damage to organs
Specific Target Organ Systemic Toxicity (repeated exposure)	-	N/A
Aspiration Hazard	-	N/A

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Harmful to aquatic life.

Aquatic Ecotoxicity

Ingredient / Chemical Designations	96 hr LC50 Fish (mg/l)	48 hr EC50 Crustacean (mg/l)	ErC50 Algae (mg/l)
Formaldehyde CAS Number: 0000050-00-0	1.41, Oncorhynchus mykiss	5.80, Daphnia pulex	0.788 (96 hr), Ulva pertusa
Methanol CAS Number: 0000067-56-1	100.00, Pimephales promelas	10,000.00, Daphnia magna	16.912 (96 hr), Ulva pertusa
Chloroform CAS Number: 0000067-66-3	43.8, Rainbow trout	28.9, Daphnia magna	No data available
Glutaraldehyde CAS Number: 0000111-30-8	No data available	No data available	No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations enacted under the Control of Pollution Act and the Environmental Protection Act.

Using information supplied within this SDS, advice should be obtained from the Waste Regulation Authority whether any special local municipal waste regulations apply.

14. TRANSPORTATION INFORMATION

14.1 Transport Classes

DOT (Domestic Surface Transportation)

DOT Proper Shipping

Name: Consumer Commodity
DOT Shipping Class: ORM-D

IMO / IMDG (Ocean Transportation)

IMDG Proper Shipping

Name: Formaldehyde Solutions, Flammable
IMDG Hazard Class: N/A
Sub Class: N/A

14.2 Environmental hazards

DOT: N/A

IMDG: Marine pollutant: Formaldehyde

15. REGULATORY INFORMATION

Overview The data provided in this section includes select regulations, and is not inclusive of all regulations that may be applicable to this product. All ingredients of this product are listed on the TSCA Inventory, or are not required to be listed.

WHMIS Classification D2A E

US EPA Tier II Hazards

Fire:	Yes
Sudden Pressure Release:	No
Reactivity:	No
Immediate Health:	Yes
Delayed Health:	Yes

EPCRA 311/312 Chemicals and RQ (>0.1%)

Formaldehyde (100 lbs)
Methanol (5,000 lbs)
Chloroform (10 lbs)
Glutaraldehyde (no data available)

EPCRA 302 Extremely Hazardous (>0.1%)

Formaldehyde

EPCRA 313 Toxic Chemicals (>0.1%)

Formaldehyde
Methanol
Chloroform

Proposition 65 - Carcinogens (>0.1%)

Formaldehyde
Chloroform

Proposition 65 - Developmental Toxins (>0.0%)

Chloroform

Proposition 65 - Female Reproductive Toxins (>0.0%)

None listed

Proposition 65 - Male Reproductive Toxins (>0.0%)

None listed

NJ RTK Substances (>1.0%)

Formaldehyde

Methanol

Chloroform

Glutaraldehyde

PA RTK Substances (>1.0%)

Formaldehyde

Methanol

Chloroform

Glutaraldehyde

16. OTHER INFORMATION

All information contained herein is based upon data believed to be correct. However, no guarantee, expressed or implied, is made with respect to the information contained within. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to this product. Users of this product must comply with all health and safety laws and regulations applicable.

The full text of the phrases appearing in section 3 is as follows:

H225 Highly flammable liquid and vapor
H301 Toxic if swallowed
H302 Harmful if swallowed
H311 Toxic in contact with skin
H314 Causes severe skin burns
H317 May cause an allergic skin reaction
H331 Toxic if inhaled
H341 Suspected of causing genetic defects
H350 May cause cancer
H370 Causes damage to organs

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