

HYDRANAL™ Working Medium K**34817-1L**

Version 2.2

Revision Date 03/03/2020

Print Date 08/03/2021

SECTION 1. IDENTIFICATION

Product name : HYDRANAL™ Working Medium K

Number : 000000020618

Product Use Description : Laboratory chemicals

Manufacturer or supplier's details : Honeywell International Inc.
1953 South Harvey Street
Muskegon, MI 49442

For more information call : 1-800-368-0050
+1-231-726-3171 (Monday-Friday, 9:00am-5:00pm)

In case of emergency call : Medical: 1-800-498-5701 or +1-303-389-1414
: Transportation (CHEMTREC): 1-800-424-9300 or
+1-703-527-3887
:
: (24 hours/day, 7 days/week)

SECTION 2. HAZARDS IDENTIFICATION**Emergency Overview**

Form : liquid

Color : colourless

Odor : aromatic

Classification of the substance or mixture

Classification of the substance or mixture : Acute toxicity, Category 3, Oral
Acute toxicity, Category 1, Inhalation
Acute toxicity, Category 2, Dermal
Skin irritation, Category 2
Serious eye damage, Category 1
Carcinogenicity, Category 2
Reproductive toxicity, Category 2

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Specific target organ toxicity - single exposure, Category 3,
Central nervous system
Specific target organ toxicity - repeated exposure, Category 1,
Liver, Kidney

GHS Label elements, including precautionary statements

Symbol(s)

:



Signal word

: Danger

Hazard statements

: Toxic if swallowed.
Fatal in contact with skin or if inhaled.
Causes skin irritation.
Causes serious eye damage.
May cause drowsiness or dizziness.
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.
Causes damage to organs through prolonged or repeated exposure.

Precautionary statements

: **Prevention:**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Do not get in eyes, on skin, or on clothing.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
Wear respiratory protection.

Response:

IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
IF ON SKIN: Gently wash with plenty of soap and water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue

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rinsing.
 Immediately call a POISON CENTER/ doctor.
 Rinse mouth.
 If skin irritation occurs: Get medical advice/ attention.
 Remove/ Take off immediately all contaminated clothing.

Storage:

Store in a well-ventilated place. Keep container tightly closed.
 Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Carcinogenicity

| | | |
|--------|--|---------|
| NTP: | Chloroform | 67-66-3 |
| | Reasonably Anticipated to be a Human Carcinogen. | |
| IARC: | Chloroform | 67-66-3 |
| | Group 2B: Possibly carcinogenic to humans | |
| ACGIH: | Chloroform | 67-66-3 |
| | A3: Confirmed animal carcinogen | |

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Mixture

| Chemical name | CAS-No. | Concentration |
|-----------------|----------|--------------------|
| Chloroform | 67-66-3 | >=30.00 - <60.00 % |
| 2-Chloroethanol | 107-07-3 | >=30.00 - <50.00 % |

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SECTION 4. FIRST AID MEASURES

- General advice : First aider needs to protect himself. Move out of dangerous area. Take off all contaminated clothing immediately.
- Inhalation : Move to fresh air. Keep patient warm and at rest. Call a physician immediately.
- Skin contact : Wash off immediately with plenty of water. Call a physician immediately.
- Eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Protect unharmed eye.
- Ingestion : When swallowed, allow water to be drunk. Do NOT induce vomiting. Call a physician immediately.

Notes to physician

- Most important symptoms/effects, acute and delayed : No information available.
- Indication of immediate medical attention and special treatment needed, if necessary : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water spray
Foam
Carbon dioxide (CO₂)
Dry powder
- Specific hazards during firefighting : Fire may cause evolution of:
Phosgene
- Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.
- Further information : Use extinguishing measures that are appropriate to local

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circumstances and the surrounding environment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.
Wear personal protective equipment. Unprotected persons must be kept away.
Ensure adequate ventilation.
- Environmental precautions : Should not be released into the environment.
- Methods and materials for containment and cleaning up : Ventilate the area.
Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

SECTION 7. HANDLING AND STORAGE**Handling**

- Precautions for safe handling : Wear personal protective equipment.
Use only with adequate ventilation.
- Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Storage

- Conditions for safe storage, including any incompatibilities : Keep only in the original container, tightly closed, in a well ventilated place.
Store at room temperature.
(Ambient temperature: > 0 < 35°C)
Protect from atmospheric moisture and water.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.

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Legal requirements are to be considered in regard of the selection, use and care of personal protective equipment.
Do not breathe vapours or spray mist.
Do not get in eyes, on skin, or on clothing.

- Engineering measures : Use with local exhaust ventilation.
- Eye protection : Safety goggles
- Hand protection : Protective gloves
Gloves must be inspected prior to use.
Replace when worn.
- Skin and body protection : Protective suit
- Respiratory protection : In case of insufficient ventilation wear suitable respiratory equipment.
- Hygiene measures : Take off all contaminated clothing immediately.
Remove and wash contaminated clothing before re-use.
Wash hands before breaks and at the end of workday.
When using do not eat or drink.

Exposure Guidelines

| Components | CAS-No. | Value | Control parameters | Update | Basis |
|------------|---------|-------------------------------------|-----------------------|------------|--|
| Chloroform | 67-66-3 | TWA : Time weighted average | (10 ppm) | 2008 | ACGIH:US. ACGIH Threshold Limit Values, as amended |
| Chloroform | 67-66-3 | STEL : Short term exposure limit | 9.78 mg/m3 (2 ppm) | 2005 | NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended |
| Chloroform | 67-66-3 | Ceiling : Ceiling Limit Value: | 240 mg/m3 (50 ppm) | 02 2006 | OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended |

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| | | | | | |
|-----------------|----------|--|--|------------|---|
| Chloroform | 67-66-3 | TWA : Time weighted average | 9.78 mg/m3 (2 ppm) | 1989 | Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended |
| 2-Chloroethanol | 107-07-3 | SKIN_DE S : Skin designati on: | Can be absorbed through the skin. | 2008 | ACGIH:US. ACGIH Threshold Limit Values, as amended |
| 2-Chloroethanol | 107-07-3 | Ceiling : Ceiling Limit Value: | (1 ppm) | 2008 | ACGIH:US. ACGIH Threshold Limit Values, as amended |
| 2-Chloroethanol | 107-07-3 | Ceil_Tim e : Ceiling Limit Value and Time Period (if specified) : | 3 mg/m3 (1 ppm) | 2005 | NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended |
| 2-Chloroethanol | 107-07-3 | SKIN_DE S : Skin designati on: | Can be absorbed through the skin. | 2005 | NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended |
| 2-Chloroethanol | 107-07-3 | PEL : Permissi ble exposure limit | 16 mg/m3 (5 ppm) | 02 2006 | OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended |

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| | | | | | |
|-----------------|----------|---|-----------------------------------|------------|--|
| 2-Chloroethanol | 107-07-3 | SKIN_DES : Skin designation: | Can be absorbed through the skin. | 02 2006 | OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended |
| 2-Chloroethanol | 107-07-3 | Ceiling : Ceiling Limit Value: | 3 mg/m3 (1 ppm) | 1989 | Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended |
| 2-Chloroethanol | 107-07-3 | SKIN_FINAL : Skin designation (Final Rule Limit applies): | Can be absorbed through the skin. | 1989 | Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-----------------------------|---------------------------|
| Physical state | : liquid |
| Color | : colourless |
| Odor | : aromatic |
| Odor threshold | : Note: no data available |
| pH | : Note: neutral |
| Melting point/range | : Note: no data available |
| Boiling point/boiling range | : ca. 60 °C at 1,013 hPa |
| Flash point | : > 212 °F (100 °C) |

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| | |
|---|---|
| Evaporation rate | : Note: no data available |
| Lower explosion limit | : Note: no data available |
| Upper explosion limit | : Note: no data available |
| Vapor pressure | : Note: no data available |
| Vapor density | : Note: no data available |
| Density | : 1.350 g/cm ³ at 20 °C |
| Water solubility | : Note: completely miscible |
| Partition coefficient: n-octanol/water | : Note: no data available |
| Ignition temperature | : Note: no data available |
| Decomposition temperature | : Note: No decomposition if used as directed. |
| Viscosity, dynamic | : Note: no data available |
| Viscosity, kinematic | : Note: no data available |

SECTION 10. STABILITY AND REACTIVITY

| | |
|--------------------|--|
| Reactivity | : Not classified as a reactivity hazard. |
| Chemical stability | : Stable under recommended storage conditions. |

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Possibility of hazardous reactions : Hazardous polymerisation does not occur.

Conditions to avoid : Protect from moisture.

Incompatible materials : Strong bases
Strong oxidizing agents
Magnesium
Lithium

Hazardous decomposition products : Phosgene

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity : Acute toxicity estimate: 144.01 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: 0.12 mg/l , vapour
Exposure time: 4 h
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: 151.11 mg/kg
Method: Calculation method

Skin irritation
Chloroform : Species: Rabbit
Result: Irritating to skin.

2-Chloroethanol : Species: Rabbit
Result: slight irritation
Method: OECD Test Guideline 404

Eye irritation : Note: The product has not been tested. The information is derived from the properties of the individual components.

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Sensitisation
2-Chloroethanol

: Mouse local lymph node assay
Species: Mouse
Result: Did not cause sensitisation on laboratory animals.
Method: OECD Test Guideline 429

Repeated dose toxicity
Chloroform

: Species: Rat
Application Route: Inhalation
(50 ppm; 7 hours/day, 5 days/week for 6 months)
Causes damage to the following organs: liver, kidneys.

Species: Rat, male
Application Route: Oral gavage bioassay
Carcinogenicity
(70 g/kg for 78 weeks)
Kidney tumors

Species: Mouse, both male and female
Application Route: Oral gavage bioassay
Carcinogenicity
(127 g/kg for 92 weeks)
Liver tumors

Species: Rat, male
Application Route: Drinking Water Study
Carcinogenicity
(160 mg/kg/d for 104 days)
Kidney tumors

Species: Rat
Application Route: Inhalation
Embryotoxicity
at maternally toxic concentrations.

Species: Rat
Application Route: Inhalation
Teratogenicity
at maternally toxic concentrations.

Further information

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Chloroform : Note:
Contains material which may cause cancer based on animal data.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity to fish

Chloroform : static test
LC50: 43.8 mg/l
Exposure time: 96 h
Species: *Oncorhynchus mykiss* (rainbow trout)

static test
LC50: 100 mg/l
Exposure time: 96 h
Species: *Lepomis macrochirus* (Bluegill sunfish)

2-Chloroethanol : flow-through test
15.2 mg/l
Exposure time: 96 h
Species: *Gambusia affinis* (Mosquito fish)

Toxicity to daphnia and other aquatic invertebrates

Chloroform : static test
LC50: 28.9 mg/l
Exposure time: 48 h
Species: *Daphnia magna* (Water flea)

2-Chloroethanol : static test
EC50: 212 mg/l
Exposure time: 48 h
Species: *Daphnia magna* (Water flea)

Toxicity to algae

Chloroform : LC0: 185 mg/l
Species: *Microcystis aeruginosa* (blue alge)

LC0: 1,110 mg/l
Species: *Scenedesmus quadricauda*

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2-Chloroethanol : static test
 EC50: 5.6 mg/l
 Exposure time: 72 h
 Species: *Desmodesmus subspicatus* (green algae)
 Method: DIN 38412

static test
 EC50: 2.85 mg/l
 Exposure time: 72 h
 Species: *Desmodesmus subspicatus* (green algae)
 Method: DIN 38412

Toxicity to bacteria
 Chloroform : LC0: 125 mg/l
 Species: *Pseudomonas putida*

2-Chloroethanol : static test
 EC20: > 2,000 mg/l
 Exposure time: 30 min
 End point: Respiration inhibition
 Species: activated sludge
 Method: OECD 209

Further information on ecology
SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods : Observe all Federal, State, and Local Environmental regulations.

SECTION 14. TRANSPORT INFORMATION

| | | |
|------------|--------------------------|---|
| DOT | UN/ID No. | : UN 3382 |
| | Proper shipping name | : TOXIC BY INHALATION LIQUID, N.O.S. (Chloroform, Ethylene chlorohydrin) |
| | Poison Inhalation Hazard | Hazard zone B |
| | Class | 6.1 |
| | Packing group | I |
| | Hazard Labels | 6.1 |

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| | | |
|-------------|-----------------------------|---|
| IATA | UN/ID No. | : UN 3382 |
| | Class | : 6.1 |
| | | Not permitted for transport |
| IMDG | UN/ID No. | : UN 3382 |
| | Description of the goods | : TOXIC BY INHALATION LIQUID, N.O.S. (CHLOROFORM, ETHYLENE CHLOROXYDRIN) |
| | Class | : 6.1 |
| | Packaging group | : I |
| | Hazard Labels | : 6.1 |
| | EmS Number | : F-A, S-A |
| | Marine pollutant | : no |
| | IMDG Code segregation group | 10 – Liquid halogenated hydrocarbons, |

SECTION 15. REGULATORY INFORMATION
Inventories

| | |
|--|--|
| US. Toxic Substances Control Act | : On TSCA Inventory |
| Australia. Industrial Chemical (Notification and Assessment) Act | : On the inventory, or in compliance with the inventory |
| Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL) | : All components of this product are on the Canadian DSL |
| Japan. Kashin-Hou Law List | : On the inventory, or in compliance with the inventory |
| Korea. Existing Chemicals Inventory (KECI) | : On the inventory, or in compliance with the inventory |
| Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act | : On the inventory, or in compliance with the inventory |
| China. Inventory of Existing Chemical Substances (IECSC) | : On the inventory, or in compliance with the inventory |

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New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand : On the inventory, or in compliance with the inventory

National regulatory information

US. EPA CERCLA Hazardous Substances (40 CFR 302) : The following component(s) of this product is/are subject to release reporting under 40 CFR 302 when release exceeds the Reportable Quantity (RQ):

Reportable quantity: 10 lbs

: Chloroform 67-66-3

SARA 302 Components : The following components are subject to reporting levels established by SARA Title III, Section 302:

: Chloroform 67-66-3

: 2-Chloroethanol 107-07-3

SARA 313 Components : The following components are subject to reporting levels established by SARA Title III, Section 313:

: Chloroform 67-66-3

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard

CERCLA Reportable Quantity : 18 lbs

California Prop. 65 :



WARNING: This product can expose you to chemicals, listed below, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Chloroform 67-66-3

Chloroform 67-66-3

Massachusetts RTK : Chloroform 67-66-3

: 2-Chloroethanol 107-07-3

New Jersey RTK : 2-Chloroethanol 107-07-3

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| | | |
|-------------------------|-------------------|----------|
| | : Chloroform | 67-66-3 |
| Pennsylvania RTK | : Chloroform | 67-66-3 |
| | : 2-Chloroethanol | 107-07-3 |

SECTION 16. OTHER INFORMATION

| | HMIS III | NFPA |
|-----------------|-----------------|-------------|
| Health hazard | : 3* | 3 |
| Flammability | : 1 | 1 |
| Physical Hazard | : 0 | |
| Instability | : | 0 |

* - Chronic health hazard

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

Further information

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 a 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. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

Previous Issue Date: 08/20/2018

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