

HYDRANAL™ Solvent E**34730-500ML**

Version 1.2

Revision Date 02/26/2020

Print Date 05/12/2023

SECTION 1. IDENTIFICATION

Product name : HYDRANAL™ Solvent E

Number : 000000020506

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 : no data available

Odor : aromatic

Classification of the substance or mixture

Classification of the substance or mixture : Flammable liquids, Category 2
Acute toxicity, Category 4, Inhalation
Skin corrosion, Category 1B
Serious eye damage, Category 1
Reproductive toxicity, Category 1B
Specific target organ toxicity - repeated exposure, Category 2,
Liver, Blood, Kidney

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GHS Label elements, including precautionary statements

Symbol(s)

:



Signal word

: Danger

Hazard statements

: Highly flammable liquid and vapour.
Causes severe skin burns and eye damage.
Harmful if inhaled.
May damage fertility or the unborn child.
May cause 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.
Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

Response:

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
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 rinsing.
Immediately call a POISON CENTER/ doctor.

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Wash contaminated clothing before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:

Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal:

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

Carcinogenicity

IARC:	Diethanolamine	111-42-2
	Group 2B: Possibly carcinogenic to humans	
ACGIH:	Ethanol	64-17-5
	A3: Confirmed animal carcinogen	
	Diethanolamine	111-42-2
	A3: Confirmed animal carcinogen	

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Mixture

Chemical name	CAS-No.	Concentration
Ethanol	64-17-5	>=70.00 - <90.00 %
Diethanolamine	111-42-2	>=10.00 - <20.00 %
Imidazole	288-32-4	>=5.00 - <10.00 %
Sulphur dioxide	7446-09-5	>=5.00 - <10.00 %

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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 : Remove to fresh air. Keep patient warm and at rest. Call a physician immediately.
- Skin contact : Wash off immediately with plenty of water. If skin irritation persists, call a physician.
- 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
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : nitrogen oxides (NO_x)
Sulphur oxides
- Special protective equipment : In the event of fire, wear self-contained breathing apparatus.

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for firefighters

Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.
Remove all sources of ignition.
Ensure adequate ventilation.

Environmental precautions : Should not be released into the environment.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material.
Pick for disposal in tightly closed containers

SECTION 7. HANDLING AND STORAGE**Handling**

Precautions for safe handling : Avoid exposure - obtain special instructions before use.
Exhaust ventilation at the object is necessary.

Advice on protection against fire and explosion : Keep away from sources of ignition - No smoking.
The heavy vapours can overcome a considerable distance up to the source of ignition.
Take measures to prevent the build up of electrostatic charge.
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.

Advice on common storage : Oxidizing agents

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.
Legal requirements are to be considered in regard of the selection, use and care of personal protective equipment.
Do not breathe vapour.
- Engineering measures : Use with local exhaust ventilation.
- Eye protection : Safety goggles
- Hand protection : Impervious butyl rubber 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
Ethanol	64-17-5	STEL : Short term exposure limit	(1,000 ppm)	2009	ACGIH:US. ACGIH Threshold Limit Values, as amended
Ethanol	64-17-5	REL : Recommended exposure limit (REL):	1,900 mg/m3 (1,000 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended

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Ethanol	64-17-5	PEL : Permissible exposure limit	1,900 mg/m3 (1,000 ppm)	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
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Ethanol	64-17-5	TWA : Time weighted average	1,900 mg/m3 (1,000 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
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Diethanolamine	111-42-2	TWA : Time weighted average	1 mg/m3	2009	ACGIH:US. ACGIH Threshold Limit Values, as amended
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Further information	:	Form of exposure : Inhalable fraction and vapor.			
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Diethanolamine	111-42-2	SKIN_DE S : Skin designati on:	Can be absorbed through the skin.	2009	ACGIH:US. ACGIH Threshold Limit Values, as amended
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Further information	:	Form of exposure : Inhalable fraction and vapor.			
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Diethanolamine	111-42-2	REL : Recomm ended exposure limit (REL):	15 mg/m3 (3 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
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Diethanolamine	111-42-2	TWA : Time weighted average	15 mg/m3 (3 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
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Sulphur dioxide	7446-09-5	STEL : Short term exposure limit	(0.25 ppm)	2009	ACGIH:US. ACGIH Threshold Limit Values, as amended
Sulphur dioxide	7446-09-5	STEL : Short term exposure limit	13 mg/m3 (5 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
Sulphur dioxide	7446-09-5	REL : Recomm ended exposure limit (REL):	5 mg/m3 (2 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
Sulphur dioxide	7446-09-5	PEL : Permissi ble exposure limit	13 mg/m3 (5 ppm)	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
Sulphur dioxide	7446-09-5	STEL : Short term exposure limit	13 mg/m3 (5 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
Sulphur dioxide	7446-09-5	TWA : Time weighted average	5 mg/m3 (2 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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Physical state	: liquid
Color	: no data available
Odor	: aromatic
Odor threshold	: Note: no data available
pH	: 6.6 at , 20 °C
Melting point/range	: Note: no data available
Boiling point/boiling range	: 75 °C at 1,013 hPa
Flash point	: 54 °F (12 °C)
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	: 0.895 g/cm3 at 20 °C
Water solubility	: Note: completely miscible
Partition coefficient: n-octanol/water	: Note: no data available

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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.

Possibility of hazardous reactions : Hazardous polymerisation does not occur.

Conditions to avoid : Protect from atmospheric moisture and water.

Incompatible materials : Formation of explosive gas/air mixtures.

Hazardous decomposition products : Sulphur oxides
nitrogen oxides (NO_x)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity : Acute toxicity estimate: 3,306 mg/kg
Method: Calculation method

Acute inhalation toxicity
Ethanol : LC50: 20000 ppm
Exposure time: 10 h
Species: Rat

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Acute dermal toxicity
Diethanolamine

: LD50: 12.2 g/kg
Species: Rabbit

Skin irritation

: Species: Rabbit
Classification: non-irritant
Method: EEC 92/69, B.4

Eye irritation

: Species: rabbit eye
Classification: Risk of serious damage to eyes.
Method: EEC 92/69, B.5

Sensitisation
Diethanolamine

: Maximisation Test
Species: Guinea pig
Result: Did not cause sensitisation on laboratory animals.
Method: OECD Test Guideline 406

Repeated dose toxicity
Diethanolamine

: Species: Rat, male and female
Application Route: Oral
LOAEL (Lowest observed adverse effect level): 14 - 25 mg/kg/d
Target Organs: Liver, Blood, Kidney
Method: OECD Test Guideline 408

Species: Rat, male and female
Application Route: Dermal
LOAEL (Lowest observed adverse effect level): 32 mg/kg/d
Method: OECD Test Guideline 411

Genotoxicity in vitro
Diethanolamine

: Note: In vitro tests did not show mutagenic effects.

Imidazole

: Test Method: In vitro mammalian cell gene mutation test
Cell type: Chinese hamster fibroblasts
Metabolic activation: with and without metabolic activation
Result: negative
Method: OECD Test Guideline 476

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	: Test Method: reverse mutation assay Cell type: Salmonella typhimurium Metabolic activation: with and without metabolic activation Result: negative
Genotoxicity in vivo Diethanolamine	: Test Method: Chromosome aberration test Species: Mouse, male and female Application Route: Dermal Method: OECD Test Guideline 474 Result: negative
Imidazole	: Test Method: Micronucleus test Species: Mouse, male and female Cell type: Bone marrow Application Route: Oral Method: OECD Test Guideline 474 Result: negative
Teratogenicity Imidazole	: Species: Rat Application Route: Oral No observed adverse effect level: 60 mg/kg body weight No observed adverse effect level: 60 mg/kg body weight Method: OECD Test Guideline 414 Result: Embryotoxic effects and adverse effects on the offspring were detected.
Further information Ethanol	: Confirmed animal carcinogen with unknown relevance to humans.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity to fish Ethanol	: LC0: 8,140 mg/l Exposure time: 48 h
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Species: *Leuciscus idus* (Golden orfe)

flow-through test

LC50: 12,900 mg/l

Exposure time: 96 h

Species: *Oncorhynchus mykiss* (rainbow trout)

LC50: 14,200 mg/l

Exposure time: 96 h

Species: *Pimephales promelas* (fathead minnow)

Diethanolamine

: static test

LC50: 1,370 - 1,550 mg/l

Exposure time: 96 h

Species: *Pimephales promelas* (fathead minnow)

Imidazole

: static test

LC50: 283.6 mg/l

Exposure time: 48 h

Species: *Leuciscus idus* (Golden orfe)

Toxicity to daphnia and other aquatic invertebrates

Ethanol

: EC50: 9,268 mg/l

Exposure time: 48 h

Species: *Daphnia magna* (Water flea)

EC50: 10,800 mg/l

Exposure time: 24 h

Species: *Daphnia magna* (Water flea)

Diethanolamine

: EC50: 55 mg/l

Exposure time: 48 h

Species: *Daphnia magna* (Water flea)

EC50: 30.1 - 89.9 mg/l

Exposure time: 48 h

Species: *Ceriodaphnia dubia* (water flea)

Imidazole

: static test

EC50: 341.5 mg/l

Exposure time: 48 h

Species: *Daphnia magna* (Water flea)

Method: Directive 67/548/EEC, Annex V, C.2.

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Toxicity to algae

Ethanol

: LC0: 5,000 mg/l
Species: Scenedesmus quadricauda (Green algae)

Diethanolamine

: static test
EC50: 9.5 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (algae)

Imidazole

: static test
EC50: 133 mg/l
Exposure time: 72 h
Species: Desmodesmus subspicatus (green algae)
Method: DIN 38412

Toxicity to bacteria

Ethanol

: LC0: 6,500 mg/l
Species: Pseudomonas putida

EC50: 35,470 mg/l
Exposure time: 5 min
Species: Photobacterium phosphoreum

EC50: 34,634 mg/l
Exposure time: 30 min
Species: Photobacterium phosphoreum

Biodegradability

Imidazole

: Result: Readily biodegradable.
Method: OECD Test Guideline 301A

Further information on ecology

Biochemical Oxygen Demand (BOD)

Diethanolamine : Value: 885 mg/g

Chemical Oxygen Demand (COD)

Diethanolamine : Value: 1,352 mg/g

Additional ecological : No information on ecology is available.

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information

SECTION 13. DISPOSAL CONSIDERATIONS

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

SECTION 14. TRANSPORT INFORMATION

DOT UN/ID No. : UN 1170
Proper shipping name : Ethanol solution
Class : 3
Packing group : II
Hazard Labels : 3

IATA UN/ID No. : UN 1170
Description of the goods : Ethanol solution
Class : 3
Packaging group : II
Hazard Labels : 3
Packing instruction (cargo aircraft) : 364
Packing instruction (passenger aircraft) : 353
Packing instruction (passenger aircraft) : Y341

IMDG UN/ID No. : UN 1170
Description of the goods : Ethanol solution
Class : 3
Packaging group : II
Hazard Labels : 3
EmS Number : F-E, S-D
Marine pollutant : no

SECTION 15. REGULATORY INFORMATION**Inventories**

US. Toxic Substances : On TSCA Inventory

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Control Act

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

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: 100 lbs
: Diethanolamine 111-42-2

SARA 302 Components : The following components are subject to reporting levels established by SARA Title III, Section 302:
: Sulphur dioxide 7446-09-5


SARA 313 Components : The following components are subject to reporting levels

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	established by SARA Title III, Section 313:	
	: Diethanolamine	111-42-2
SARA 311/312 Hazards	: Fire Hazard	
	Acute Health Hazard	
	Chronic Health Hazard	
CERCLA Reportable Quantity	: 909 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 .	
	Diethanolamine	111-42-2
	Sulphur dioxide	7446-09-5
Massachusetts RTK	: Sulphur dioxide	7446-09-5
	: Diethanolamine	111-42-2
	: Ethanol	64-17-5
New Jersey RTK	: Ethanol	64-17-5
	: Diethanolamine	111-42-2
	: Sulphur dioxide	7446-09-5
Pennsylvania RTK	: Ethanol	64-17-5
	: Diethanolamine	111-42-2
	: Sulphur dioxide	7446-09-5

SECTION 16. OTHER INFORMATION

	HMIS III	NFPA
Health hazard	: 3*	3
Flammability	: 3	3
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.

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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

Prepared by Honeywell Performance Materials and Technologies Product Stewardship Group