

HYDRANAL™ Titrant 2**34811-500ML**

Version 1.2

Revision Date 03/02/2020

Print Date 05/12/2023

SECTION 1. IDENTIFICATION

Product name : HYDRANAL™ Titrant 2

Number : 000000020614

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 : brown

Odor : aromatic

Classification of the substance or mixture

Classification of the substance or mixture : Flammable liquids, Category 2
Specific target organ toxicity - single exposure, Category 1,
Eyes, Nervous system, Systemic toxicity
Specific target organ toxicity - repeated exposure, Category 1



GHS Label elements, including precautionary statements

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Symbol(s)	:	 
Signal word	:	Danger
Hazard statements	:	Highly flammable liquid and vapour. Causes damage to organs. Causes damage to organs through prolonged or repeated exposure.
Precautionary statements	:	Prevention: 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. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Response: IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF exposed: Call a POISON CENTER or doctor/ physician. 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

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No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Mixture

Chemical name	CAS-No.	Concentration
Methanol	67-56-1	>=90.00 - <=100.00 %
Iodine	7553-56-2	>=1.00 - <5.00 %

SECTION 4. FIRST AID MEASURES

General advice : First aider needs to protect himself. Move out of dangerous area. Take off all contaminated clothing immediately. Show this safety data sheet to the doctor in attendance.

Inhalation : Call a physician immediately. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present.

Skin contact : Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician.

Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician.

Ingestion : Call a physician immediately. Do NOT induce vomiting. Immediate medical attention is required. Never give anything by mouth to an unconscious person.

Notes to physician

Most important symptoms/effects, acute and : No information available.

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delayed
Indication of immediate : Treat symptomatically.
medical attention and
special treatment needed, if
necessary

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water spray
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry powder
- Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.
- Specific hazards during firefighting : Flammable.
Vapours may form explosive mixtures with air.
Vapours are heavier than air and may spread along floors.
Vapors may travel to areas away from work site before igniting/flashback to vapor source.
In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide
Carbon dioxide (CO₂)
Formaldehyde
- Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.
- Further information : Use water spray to cool unopened containers.
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 : Ensure adequate ventilation.
Remove all sources of ignition.
Wear personal protective equipment. Unprotected persons must be kept away.
- Environmental precautions : Do not flush into surface water or sanitary sewer system.

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Methods and materials for containment and cleaning up : Ventilate the area.
No sparking tools should be used.
Use explosion-proof equipment.
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 in well-ventilated areas.

Advice on protection against fire and explosion : Keep product and empty container away from heat and sources of ignition.
No smoking.
Take precautionary measures against static discharges.
Vapours may form explosive mixtures with air.

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.
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.

Engineering measures : Use with local exhaust ventilation.
Electrical equipment should be protected to the appropriate standard.

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- 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 the case of vapour formation use a respirator with an approved filter.
- Hygiene measures : Separate rooms are required for washing, showering and changing clothes.
When using, do not eat, drink or smoke.
Keep working clothes separately.
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
Methanol	67-56-1	SKIN_DES : Skin designation:	Can be absorbed through the skin.	2008	ACGIH:US. ACGIH Threshold Limit Values, as amended
Methanol	67-56-1	STEL : Short term exposure limit	(250 ppm)	2008	ACGIH:US. ACGIH Threshold Limit Values, as amended
Methanol	67-56-1	TWA : Time weighted average	(200 ppm)	2008	ACGIH:US. ACGIH Threshold Limit Values, as amended
Methanol	67-56-1	STEL : Short term exposure limit	325 mg/m ³ (250 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended

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Methanol	67-56-1	SKIN_DES : Skin designation:	Can be absorbed through the skin.	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
Methanol	67-56-1	REL : Recommended exposure limit (REL):	260 mg/m3 (200 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
Methanol	67-56-1	PEL : Permissible exposure limit	260 mg/m3 (200 ppm)	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
Methanol	67-56-1	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
Methanol	67-56-1	STEL : Short term exposure limit	325 mg/m3 (250 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
Methanol	67-56-1	TWA : Time weighted average	260 mg/m3 (200 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended

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Iodine	7553-56-2	Ceil_Tim e : Ceiling Limit Value and Time Period (if specified) :	1 mg/m3 (0.1 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
Iodine	7553-56-2	Ceiling : Ceiling Limit Value:	1 mg/m3 (0.1 ppm)	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
Iodine	7553-56-2	Ceiling : Ceiling Limit Value:	1 mg/m3 (0.1 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
Iodine	7553-56-2	TWA : Time weighted average	(0.01 ppm)	03 2014	ACGIH:US. ACGIH Threshold Limit Values, as amended
Further information	:	Form of exposure : Inhalable fraction and vapor.			
Iodine	7553-56-2	STEL : Short term exposure limit	(0.1 ppm)	03 2017	ACGIH:US. ACGIH Threshold Limit Values, as amended
Further information	:	Form of exposure : Vapor fraction			

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Iodine	7553-56-2	Ceil_Tim e : Ceiling Limit Value and Time Period (if specified) :	1 mg/m3 (0.1 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
Iodine	7553-56-2	Ceiling : Ceiling Limit Value:	1 mg/m3 (0.1 ppm)	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
Iodine	7553-56-2	Ceiling : Ceiling Limit Value:	1 mg/m3 (0.1 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: liquid
Color	: brown
Odor	: aromatic
Odor threshold	: Note: no data available
pH	: Note: neutral
Melting point/range	: -98 °C
Boiling point/boiling range	: 65 °C at 1,013 hPa
Flash point	: 52 °F (11 °C)

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Evaporation rate	: Note: no data available
Lower explosion limit	: 5.5 %(V)
Upper explosion limit	: 31 %(V)
Vapor pressure	: 128 hPa at 20 °C(68 °F)
Vapor density	: Note: no data available
Density	: ca. 0.800 g/cm ³ at 20 °C
Water solubility	: Note: completely miscible
Partition coefficient: n-octanol/water	: Note: no data available
Ignition temperature	: 450 °C
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	: Hazardous polymerisation does not occur.

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reactions	Vapours may form explosive mixture with air.
Conditions to avoid	: Heat, flames and sparks. Keep away from direct sunlight.
Incompatible materials	: Oxidizing agents
Hazardous decomposition products	: In case of fire hazardous decomposition products may be produced such as: Carbon monoxide Carbon dioxide (CO ₂) Formaldehyde

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity Methanol	: LD50: 5,628 mg/kg Species: Rat
Acute inhalation toxicity Methanol	: LC50: 64000 ppm Exposure time: 4 h Species: Rat
Iodine	: LC50: > 4.588 mg/l , dust/mist Exposure time: 4 h Species: Rat
Acute dermal toxicity Methanol	: LD50: 15,800 mg/kg Species: Rabbit
Iodine	: LD50: 1,425 mg/kg Species: Rabbit, male
Skin irritation Iodine	: Species: reconstructed human epidermis (RhE)

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Result: Irritating to skin.

Repeated dose toxicity
Methanol

: Species: Rat
Application Route: Inhalation
Test substance: Methanol
Developmental Toxicity
NOAEL (maternal toxicity)
10,000 ppm
NOAEL (developmental toxicity)
5,000 ppm
Skeletal and visceral malformations.

Genotoxicity in vitro
Methanol

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

Genotoxicity in vivo
Methanol

: Note: In vivo tests did not show mutagenic effects

SECTION 12. ECOLOGICAL INFORMATIONToxicity to fish
Methanol

: LC50: 29,400 mg/l
Exposure time: 96 h
Species: Pimephales promelas (fathead minnow)

Iodine

: LC50: 1.67 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates

Methanol

: LC50: 10,000 mg/l
Exposure time: 24 h
Species: Daphnia (water flea)

Iodine

: LC50: 0.55 mg/l

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Exposure time: 48 h
Species: Daphnia magna (Water flea)

Toxicity to algae
Iodine

: Growth inhibition
EC50: 0.13 mg/l
Exposure time: 72 h
Species: Desmodesmus subspicatus (green algae)
Method: OECD Test Guideline 201

Toxicity to bacteria
Methanol

: EC50: 43,000 mg/l
Exposure time: 5 min
Species: Photobacterium phosphoreum

EC50: 40,000 mg/l
Exposure time: 15 min
Species: Photobacterium phosphoreum

EC50: 39,000 mg/l
Exposure time: 25 min
Species: Photobacterium phosphoreum

Further information on ecology

Additional ecological information : Do not flush into surface water or sanitary sewer system.

SECTION 13. DISPOSAL CONSIDERATIONS

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

SECTION 14. TRANSPORT INFORMATION

DOT UN/ID No. : UN 1230
Proper shipping name : METHANOL SOLUTION

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Class	3
Packing group	II
Hazard Labels	3

IATA	UN/ID No.	: UN 1230
	Description of the goods	: METHANOL SOLUTION
	Class	: 3
	Packaging group	: II
	Hazard Labels	: 3 (6.1)
	Packing instruction (cargo aircraft)	: 364
	Packing instruction (passenger aircraft)	: 352
	Packing instruction (passenger aircraft)	: Y341

IMDG	UN/ID No.	: UN 1230
	Description of the goods	: METHANOL SOLUTION
	Class	: 3
	Packaging group	: II
	Hazard Labels	: 3 (6.1)
	EmS Number	: F-E, S-D
	Marine pollutant	: no

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

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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: 5000 lbs
: Methanol 67-56-1

SARA 302 Components : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components : The following components are subject to reporting levels established by SARA Title III, Section 313:
: Methanol 67-56-1

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

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California Prop. 65

:



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

Methanol

67-56-1

Massachusetts RTK

:

Methanol

67-56-1

Iodine

7553-56-2

New Jersey RTK

:

Iodine

7553-56-2

Methanol

67-56-1

Pennsylvania RTK

:

Methanol

67-56-1

Iodine

7553-56-2

SECTION 16. OTHER INFORMATION

	HMIS III	NFPA
Health hazard	: 2*	2
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.

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.

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