

**HYDRANAL™ Composite 5 K****34816-500ML**

Version 1.3

Revision Date 03/15/2022

Print Date 05/12/2023

**SECTION 1. IDENTIFICATION**

Product name : HYDRANAL™ Composite 5 K

Number : 000000020617

Product Use Description : Laboratory chemicals  
Scientific research and development

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 : characteristic

**Classification of the substance or mixture**

Classification of the substance or mixture : Carcinogenicity, Category 2  
Reproductive toxicity, Category 1B  
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

: Suspected of causing cancer.  
May damage 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.  
Wash skin thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use personal protective equipment as required.**Response:**

IF exposed or concerned: Get medical advice/ attention.

**Storage:**

Store locked up.

**Disposal:**

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

**Carcinogenicity**IARC: 2-Methylimidazole 693-98-1  
Group 2B: Possibly carcinogenic to humans**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical nature

: Mixture

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Chemical name	CAS-No.	Concentration
2-(2-Ethoxyethoxy)ethanol	111-90-0	>=70.00 - <90.00 %
Iodine	7553-56-2	>=5.00 - <10.00 %
Imidazole	288-32-4	>=5.00 - <10.00 %
2-Methylimidazole	693-98-1	>=1.00 - <5.00 %
Sulphur dioxide	7446-09-5	>=1.00 - <5.00 %
1H-Imidazole monohydriodide	68007-08-9	>=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.
- Inhalation : Move 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.

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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 (CO<sub>2</sub>)  
Dry powder
- Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.
- Specific hazards during firefighting : Fire may cause evolution of:  
Carbon monoxide  
Carbon dioxide (CO<sub>2</sub>)  
Sulphur oxides  
Nitrogen oxides (NO<sub>x</sub>)
- Special protective equipment for firefighters : Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.
- 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.  
Wear personal protective equipment. Unprotected persons must be kept away.  
Ensure adequate ventilation.  
Remove all sources of ignition.
- 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

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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 away from sources of ignition - No smoking.  
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.  
Do not store for longer periods (not > 1 month) at temperatures above 25°C. Higher temperature leads to an accelerated decrease in titer.

**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.  
Avoid exposure - obtain special instructions before use.

Engineering measures : Use with local exhaust ventilation.  
Prevent vapour buildup by providing adequate ventilation during and after use.

Eye protection : Safety goggles

Hand protection : Wear nitrile rubber gloves to avoid contact with the skin.  
Gloves must be inspected prior to use.  
Replace when worn.

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- 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
2-(2-Ethoxyethoxy)ethanol	111-90-0	TWA : Time weighted average	140 mg/m <sup>3</sup> (25 ppm)	2007	WEEL:US. OARS. WEELs Workplace Environmental Exposure Level Guide, as amended

2-(2-Ethoxyethoxy)ethanol	111-90-0	TWA : Time weighted average	140 mg/m <sup>3</sup> (25 ppm)	2007	WEEL:US. OARS. WEELs Workplace Environmental Exposure Level Guide, as amended
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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
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	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	STEL : Short term exposure limit	13 mg/m3 (5 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended

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Sulphur dioxide	7446-09-5	PEL : Permissible 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	TWA : Time weighted average	5 mg/m3 (2 ppm)	1989	Z1A:US. OSHA Table Z-1-A (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

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state	: liquid
Color	: brown
Odor	: characteristic
Odor threshold	: Note: No data available
pH	: Note: No data available
Melting point/range	: Note: No data available
Boiling point/boiling range	: Note: No data available
Flash point	: 210 °F (99 °C)
Evaporation rate	: Note: No data available



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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	: 1.170 g/cm <sup>3</sup> 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 normal conditions.
Possibility of hazardous reactions	: Hazardous polymerisation does not occur.

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Conditions to avoid	: Protect from atmospheric moisture and water. Heat, flames and sparks.
Incompatible materials	: Strong oxidizing agents
Hazardous decomposition products	: In case of fire hazardous decomposition products may be produced such as: Carbon monoxide Carbon dioxide (CO <sub>2</sub> ) Sulphur oxides Nitrogen oxides (NO <sub>x</sub> )

**SECTION 11. TOXICOLOGICAL INFORMATION**

Acute oral toxicity	: LD50: > 2,000 mg/kg Species: Rat Note: The toxicological data mentioned are derived from an analogous product.
Acute inhalation toxicity	: Note: No data available
Acute dermal toxicity	: LD50: > 2,000 mg/kg Species: Rat Note: The toxicological data mentioned are derived from an analogous product.
Skin irritation	: Species: Rabbit Result: No skin irritation Note: The toxicological data mentioned are derived from an analogous product.
Eye irritation	: Species: Rabbit Result: No eye irritation Note: The toxicological data mentioned are derived from an analogous product.

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## Sensitisation

2-(2-Ethoxyethoxy)ethanol : Species: Guinea pig  
Classification: non-sensitizing

## 2-Methylimidazole

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

1H-Imidazole  
monohydriodide

: Mouse local lymph node assay  
Species: Mouse  
Result: Does not cause skin sensitisation.  
Method: OECD 429

## Repeated dose toxicity

1H-Imidazole  
monohydriodide : Species: Rat  
Application Route: Ingestion  
Exposure time: (28 d)  
NOEL: 50 mg/kg/d  
Method: Repeated dose (28 days) toxicity (oral)

## Genotoxicity in vitro

: Test Method: Ames test  
Result: negative  
Note: The toxicological data mentioned are derived from an analogous product.

## Genotoxicity in vivo

2-(2-Ethoxyethoxy)ethanol : Species: Rat, male  
Cell type: Liver cells  
Application Route: Oral  
Method: OECD Test Guideline 486  
Result: negative

: Test Method: Chromosome aberration test  
Species: Mouse, male  
Cell type: Bone marrow  
Application Route: Intraperitoneal injection  
Method: OECD Test Guideline 474  
Result: negative

## Imidazole

: Test Method: Micronucleus test  
Species: Mouse, male and female

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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.

2-Methylimidazole

: Species: Rat Application Route: Oral

No observed adverse effect level: >50 mg/kg body weight  
No observed adverse effect level: 2 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: Embryotoxic effects and adverse effects on the offspring were detected.

**SECTION 12. ECOLOGICAL INFORMATION****Toxicity to fish**

2-(2-Ethoxyethoxy)ethanol

: flow-through test  
LC50: 6,010 mg/l  
Exposure time: 96 h  
Species: Ictalurus punctatus (channel catfish)  
Method: OECD Test Guideline 203

Iodine

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

Imidazole

: static test  
LC50: 283.6 mg/l  
Exposure time: 48 h  
Species: Leuciscus idus (Golden orfe)

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2-Methylimidazole : static test  
LC50: 190 mg/l  
Exposure time: 96 h  
Species: *Leuciscus idus* (Golden orfe)  
Method: DIN 38412

1H-Imidazole  
monohydriodide : LC0:  $\geq 100$  mg/l  
Exposure time: 96 h  
Species: *Danio rerio* (zebra fish)  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates  
2-(2-Ethoxyethoxy)ethanol : static test  
LC50: 1,982 mg/l  
Exposure time: 48 h  
Species: *Daphnia magna* (Water flea)  
Method: OECD Test Guideline 202

Iodine : LC50: 0.55 mg/l  
Exposure time: 48 h  
Species: *Daphnia magna* (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.

2-Methylimidazole : static test  
EC50: 225.31 mg/l  
Exposure time: 48 h  
Species: *Daphnia magna* (Water flea)  
Method: Directive 67/548/EEC, Annex V, C.2.

1H-Imidazole  
monohydriodide : EC50: 1.4 mg/l  
Exposure time: 48 h  
Species: *Daphnia magna* (Water flea)  
Method: OECD Test Guideline 202

EC0: 0.46 mg/l  
Exposure time: 48 h  
Species: *Daphnia magna* (Water flea)  
Method: OECD Test Guideline 202

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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

Imidazole

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

2-Methylimidazole

: static test  
EC50: 256.3 mg/l  
Exposure time: 72 h  
Species: *Desmodesmus subspicatus* (green algae)  
Method: DIN 38412

static test  
EC50: 189 mg/l  
Exposure time: 72 h  
Species: *Desmodesmus subspicatus* (green algae)  
Method: DIN 38412

1H-Imidazole  
monohydriodide

: Biomass  
EC50: 8.3 mg/l  
Exposure time: 72 h  
Species: *scenedesmus subspicatus*  
Method: OECD Test Guideline 201

Growth rate  
EC50: 34 mg/l  
Exposure time: 72 h  
Species: *scenedesmus subspicatus*  
Method: OECD Test Guideline 201

Biomass  
NOEC: 1 mg/l  
Exposure time: 72 h  
Species: *scenedesmus subspicatus*  
Method: OECD Test Guideline 201

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Biomass  
NOEC: 1 mg/l  
Exposure time: 72 h  
Species: scenedesmus subspicatus  
Method: OECD Test Guideline 201

Toxicity to bacteria  
1H-Imidazole  
monohydriodide

: Respiration inhibition  
EC50: > 1,000 mg/l  
Exposure time: 3 h  
Species: activated sludge  
Method: OECD 209

Respiration inhibition  
NOEC: 320 mg/l  
Exposure time: 3 h  
Species: activated sludge  
Method: OECD 209

**Elimination information (persistence and degradability)**

Biodegradability : Result: Readily biodegradable.  
Value: 78 %  
Method: OECD 302 B  
Note: Information given is based on data on the components  
and the toxicology of similar products.

**Further information on ecology**

Additional ecological information  
Iodine : Harmful to aquatic organisms, may cause long-term adverse  
effects in the aquatic environment.

**SECTION 13. DISPOSAL CONSIDERATIONS**

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

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**SECTION 14. TRANSPORT INFORMATION****DOT** Not dangerous goods**TDG** Not dangerous goods**IATA** Not dangerous goods**IMDG** Not dangerous goods**SECTION 15. REGULATORY INFORMATION****Inventories**

US. Toxic Substances Control Act : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

Australia. Industrial Chemicals Act (AICC), as amended : On the inventory, or in compliance with the inventory

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL) : Not in compliance with the inventory

Japan. Kashin-Hou Law List : 1H-Imidazole monohydriodide 68007-08-9  
: Not in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI) : 1H-Imidazole monohydriodide 68007-08-9  
: Not in compliance with the inventory

Philippines. Inventory of Chemicals and Chemical Substances (PICCS) : 1H-Imidazole monohydriodide 68007-08-9  
: Not in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC) : 1H-Imidazole monohydriodide 68007-08-9  
: 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 : Not in compliance with the inventory

Note : 1H-Imidazole monohydriodide 68007-08-9  
 : Note: Because of the potential specific inventory listing of components of this product line, further, more detailed information can be requested from SafetyDataSheet@Honeywell.com.


**National regulatory information**

TSCA : This material must be used in compliance with the TSCA Research and Development Exemption requirements (40 CFR 720.36).

**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 established by SARA Title III, Section 313:  
 : 2-(2-Ethoxyethoxy)ethanol 111-90-0

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

**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](http://www.P65Warnings.ca.gov).  
 2-Methylimidazole 693-98-1  
 Sulphur dioxide 7446-09-5

**Massachusetts RTK** : Sulphur dioxide 7446-09-5  
 : Iodine 7553-56-2

**New Jersey RTK** : Sulphur dioxide 7446-09-5

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	: Iodine	7553-56-2
	: 2-(2-Ethoxyethoxy)ethanol	111-90-0
<b>Pennsylvania RTK</b>	: 2-(2-Ethoxyethoxy)ethanol	111-90-0
	: Sulphur dioxide	7446-09-5
	: Iodine	7553-56-2

**SECTION 16. OTHER INFORMATION**

	<b>HMIS III</b>	<b>NFPA</b>
Health hazard	: 2	2
Flammability	: 1	1
Physical Hazard	: 0	
Instability	:	0

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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Prepared by Honeywell Performance Materials and Technologies Product Stewardship Group