

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended

Honeywell
Riedel-de Haën™

Ethanol

32294-5L

Version 1.3

Revision Date 22.01.2024

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : Ethanol
SDS-number : 000000023762
Type of product : Mixture
Remarks : SDS according to Art. 31 of Regulation (EC) 1907/2006.

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

Use of the Substance/Mixture : Laboratory chemicals
Uses advised against : none

1.3. Details of the supplier of the safety data sheet

Company	: Honeywell International Inc. 115 Tabor Road 07950-2546 Morris Plains USA	Honeywell International, Inc. 115 Tabor Road Morris Plains, NJ 07950-2546 USA
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Telephone :
For further information, please contact: : SafetyDataSheet@Honeywell.com

1.4. Emergency telephone number

Emergency telephone number : +1-703-527-3887 (ChemTrec-Transport)
+1-303-389-1414 (Medical)
: Poison Control Center:
United Kingdom: (+44) 844 892 0111

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

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Flammable liquids Category 2
H225 Highly flammable liquid and vapour.
Eye irritation Category 2
H319 Causes serious eye irritation.

2.2. Label elements

REGULATION (EC) No 1272/2008

Hazard pictograms	:	
Signal word	:	Danger
Hazard statements	:	H225 Highly flammable liquid and vapour. H319 Causes serious eye irritation.
Precautionary statements	:	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P243 Take precautionary measures against static discharge. P280 Wear protective gloves/ eye protection/ face protection. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308 + P313 IF exposed or concerned: Get medical advice/ attention.
Hazardous components which must be listed on the label	:	ethanol; ethyl alcohol

2.3. Other hazards

Do not breathe vapours or spray mist. Take measures to prevent the build up of electrostatic charge. Results of PBT and vPvB assessment, see chapter 12.5.

SECTION 3: Composition/information on ingredients

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3.1. Substances

Not applicable

3.2. Mixtures

Chemical name	CAS-No. Index-No. REACH Registration Number EC-No.	Classification 1272/2008	Concentration	Remarks
ethanol; ethyl alcohol	64-17-5 603-002-00-5 200-578-6	Flam. Liq. 2; H225 Eye Irrit. 2; H319	> 90 % - < 100 %	Eye Irrit. 2; H319: >= 50 %

Remaining components of this product are non-hazardous and/or are present at concentrations below reportable limits.

Occupational Exposure Limit(s), if available, are listed in Section 8.
For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice:

Take off all contaminated clothing immediately. Consult a physician for severe cases. No hazards which require special first aid measures.

Inhalation:

Remove to fresh air.

Skin contact:

After contact with skin, wash immediately with plenty of water.

Eye contact:

Protect unharmed eye. Rinse thoroughly with plenty of water, also under the eyelids. If eye irritation persists, consult a specialist.

Ingestion:

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When swallowed, allow water to be drunk. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

See Section 11 for more detailed information on health effects and symptoms.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray
Carbon dioxide (CO₂)
Dry powder
Alcohol-resistant foam

Extinguishing media which shall not be used for safety reasons:

High volume water jet

5.2. Special hazards arising from the substance or mixture

Heating will cause pressure rise with risk of bursting and subsequent explosion
Burns with colourless flame.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Remove all sources of ignition. Keep people away from and upwind of spill/leak.

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6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. The product evaporates readily.

6.3. Methods and materials for containment and cleaning up

Soak up with inert absorbent material.
Pick for disposal in tightly closed containers

6.4. Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:

Exhaust ventilation at the object is necessary. Keep limited supplies at workplace.

Advice on protection against fire and explosion:

The product is easily combustible. The heavy vapours can overcome a considerable distance up to the source of ignition. Use only in explosion-proof areas. Take measures to prevent the build up of electrostatic charge. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Vapours may form explosive mixtures with air.

Hygiene measures:

Keep working clothes separately. Ensure adequate ventilation, especially in confined areas. Take off all contaminated clothing immediately. Wash hands before breaks and at the end of workday. Avoid contact with the skin and the eyes. Recommended preventive skin protection

7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions:

Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Do not leave vessels/containers open. Avoid product residues in/on containers.

Advice on common storage:

Do not store together with: Oxidizing agents

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7.3. Specific end use(s)

no additional data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits:

Components	Basis / Value type	Value / Form of exposure	Exceeding Factor	Remarks
ethanol; ethyl alcohol	EH40 WEL TWA	1.920 mg/m ³ 1.000 ppm		

EH40 WEL - UK. EH40 Workplace Exposure Limits (WELs), as amended
TWA - Time weighted average

DNEL/ PNEC-Values

Component	End-use/impact	Exposure duration	Value	Exposure routes	Remarks
ethanol; ethyl alcohol	Workers / Acute local effects		1900 mg/m ³	Inhalation	
ethanol; ethyl alcohol	Workers / Long-term systemic effects		343mg/kg bw/d	Skin contact	
ethanol; ethyl alcohol	Workers / Long-term systemic effects		950 mg/m ³	Inhalation	
ethanol; ethyl alcohol	Consumers / Long-term systemic effects		114 mg/m ³	Inhalation	
ethanol; ethyl alcohol	Consumers / Acute local effects		950 mg/m ³	Inhalation	
ethanol; ethyl alcohol	Consumers /		206mg/kg	Skin contact	

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	Long-term systemic effects		bw/d		
ethanol; ethyl alcohol	Consumers / Long-term systemic effects		87mg/kg bw/d	Ingestion	

Component	Environmental compartment / Value	Remarks
ethanol; ethyl alcohol	Fresh water: 0,96 mg/l	
ethanol; ethyl alcohol	Marine water: 0,79 mg/l	
ethanol; ethyl alcohol	Fresh water sediment: 3,6 mg/kg	
ethanol; ethyl alcohol	Soil: 0,63 mg/kg	

8.2. Exposure controls

Occupational exposure controls

Do not breathe vapours/dust.

The Personal Protective Equipment must be in accordance with EN standards:respirator EN 136, 140, 149; safety glasses EN 166; protective suit: EN 340, 463, 468, 943-1, 943-2; gloves EN 374, 511; safety shoes EN-ISO 20345.

Take off all contaminated clothing immediately.

Recommended preventive skin protection

Personal protective equipment

Respiratory protection:

In the case of vapour formation use a respirator with an approved filter.

Recommended Filter type:

Organic vapour type

Hand protection:

Glove material: butyl-rubber

Break through time: > 480 min

Glove thickness: 0,7 mm

Butoject® 898

Gloves must be inspected prior to use.

Replace when worn.

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Remarks: Supplementary note: The specifications are based on information and tests from similar substances by analogy.

Due to varying conditions (e.g.temperature or other strains) it must be considered that the usage of a chemical protective glove in practice may be much shorter than the permeation time determined in accordance with EN 374.

Since actual conditions of practical use often deviate from standardised conditions according EN 374 the glove manufacturer recommends to use the chemical protective glove in practice not longer than 50% of the recommended permeation time.

Manufacturer's directions for use should be observed because of great diversity of types .

Suitable gloves tested according EN 374 are supplied e.g. from KCL GmbH, D-36124 Eichenzell, Vertrieb@kcl.de

Eye protection:

Tightly fitting safety goggles

Skin and body protection:

Flame retardant antistatic protective clothing.

Working clothes must not consist of textiles, which show a dangerous melting behaviour in case of fire.

Environmental exposure controls

Handle in accordance with local environmental regulations and good industrial practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- | | | |
|-------------------------------------|---|-----------------------------------|
| (a) Physical state | : | liquid |
| (b) Colour | : | colourless |
| (c) Odour | : | characteristic |
| (d) Melting point/freezing point | : | -115 °C |
| (e) Boiling point/boiling range | : | 78 - 79 °C
at 1.013 hPa |
| (g) Lower and upper explosion limit | : | Lower explosion limit
3,4 %(V) |
| | : | Upper explosion limit |

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- 15 %(V)
- (h) Flash point : 12 °C
Method: DIN 51755
- (i) Auto-ignition temperature : 425 °C
- (j) Decomposition temperature : At normal pressure may be distilled without decomposition.
Fire or intense heat may cause violent rupture of packages.
- (k) pH : 7
Concentration: 10 g/l
- (l) Viscosity, kinematic : No data available
- (m) Solubility(ies) : Water solubility:
completely miscible

Solubility in other solvents:
Soluble in most organic solvents
- (n) Partition coefficient: n-octanol/water : log Pow -0,32
- (o) Vapour pressure : 59 hPa
at 20 °C
- (p) Density and / or relative density : 0,805 - 0,812 g/cm³
at 20 °C
- (q) Relative vapour density : No data available
- (r) Particle characteristics : No data available

9.2 Other Information

- Oxidizing properties : The substance or mixture is not classified as oxidizing.
- Evaporation rate : No data available

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Viscosity, dynamic : No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under recommended storage conditions.

10.2. Chemical stability

At normal pressure may be distilled without decomposition.
Fire or intense heat may cause violent rupture of packages.

10.3. Possibility of hazardous reactions

Hazardous polymerisation does not occur.

10.4. Conditions to avoid

Heat, flames and sparks.
Keep away from direct sunlight.

10.5. Incompatible materials

Reactions with alkali metals.
Evolution of inflammable gases/vapours easily.
Uncleaned empty vessels may contain product gases which can form explosive mixtures with air.
Explosive reactions with oxidising agents such as potassium chlorate and/or peroxides.

10.6. Hazardous decomposition products

In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide
Carbon dioxide (CO₂)
Formaldehyde

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

(a) Acute toxicity

Acute oral toxicity:

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LD50

Species: Rat

Value: 10.470 mg/kg

Method: OECD Test Guideline 401

Test substance: anhydrous substance

Acute dermal toxicity:

No data available

Acute inhalation toxicity:

LC50

Species: Rat

Value: 124,7 mg/l

Exposure time: 4 h

Method: OECD Test Guideline 403

Test substance: anhydrous substance

Acute toxicity (other routes of administration):

No data available

(b) Skin corrosion/irritation:

Species: Rabbit

Result: No skin irritation

Method: OECD Test Guideline 404

Test substance: anhydrous substance

(c) Serious eye damage/eye irritation:

Species: Rabbit

Result: Moderate eye irritation

Method: OECD Test Guideline 405

Test substance: anhydrous substance

(d) Respiratory or skin sensitisation:

Route of exposure: Skin contact

Species: Guinea pig

Result: Did not cause sensitisation on laboratory animals.

Method: OECD Test Guideline 406

Test substance: anhydrous substance

(e) Germ cell mutagenicity:

Test Method: Ames test

Result: negative

Method: OECD Test Guideline 471

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Test Method: In vitro gene mutation study in mammalian cells

Result: negative

Method: OECD Test Guideline 476

Test Method: Chromosome aberration test

Method: OECD Test Guideline 478

Result: negative

(g) Reproductive toxicity:

Species: Rat

Developmental Toxicity: NOAEL: 5.200 mg/kg bw/d

(h) STOT-single exposure:

No data available

(i) STOT - repeated exposure:

Species: Rat, male

Application Route: Oral

Exposure time: 90 d

LOAEL: 3.156 mg/kg

Test substance: anhydrous substance

Method: OECD 408

(j) Aspiration hazard:

No data available

11.2. Information on other hazards

Endocrine disrupting properties

No data available

Other information:

Solvent removes skin oil from the skin.

Solvent vapours have a narcotic effect if inhaled in high concentrations.

Poisoning affects the central nervous system.

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish:

LC50

Species: Pimephales promelas (fathead minnow)

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Value: 14.200 mg/l
Exposure time: 96 h
Test substance: anhydrous substance

NOEC
semi-static test
Species: Danio rerio (zebra fish)
Value: 250 mg/l
Exposure time: 120 h
Method: OECD Test Guideline 212
Test substance: anhydrous substance

Toxicity to aquatic plants:
EC50
Growth rate
Species: Chlorella vulgaris (Fresh water algae)
Value: 275 mg/l
Exposure time: 3 d
Method: OECD Test Guideline 201
Test substance: anhydrous substance

EC50
Growth rate
Species: Chlorella vulgaris (Fresh water algae)
Value: 675 mg/l
Exposure time: 4 d
Method: OECD Test Guideline 201
Test substance: anhydrous substance

EC50
Biomass
Species: Lemna gibba (gibbous duckweed)
Value: 5.967 mg/l
Exposure time: 7 d
Test substance: anhydrous substance

NOEC
Biomass
Species: Lemna gibba (gibbous duckweed)
Value: 5.967 mg/l
Exposure time: 7 d
Test substance: anhydrous substance

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Toxicity to aquatic invertebrates:

LC50

static test

Species: Ceriodaphnia dubia (water flea)

Value: 5.012 mg/l

Exposure time: 48 h

Test substance: anhydrous substance

Chronic toxicity to aquatic invertebrates:

NOEC

semi-static test

Species: Ceriodaphnia dubia (water flea)

Value: 9,6 mg/l

Exposure time: 10 d

Test substance: anhydrous substance

Chronic toxicity to aquatic invertebrates:

LC50

Reproduction Test

semi-static test

Species: Ceriodaphnia dubia (water flea)

Value: 1.806 mg/l

Exposure time: 10 d

Test substance: anhydrous substance

Chronic toxicity to aquatic invertebrates:

NOEC

semi-static test

Species: Daphnia magna (Water flea)

Value: 9,6 mg/l

Exposure time: 9 d

Test substance: anhydrous substance

Chronic toxicity to aquatic invertebrates:

LC50

Reproduction Test

semi-static test

Species: Daphnia magna (Water flea)

Value: 454 mg/l

Exposure time: 9 d

Test substance: anhydrous substance

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12.2. Persistence and degradability

Biodegradability:

aerobic

Biodegradation: 95 %

Exposure time: 15 d

Result: Readily biodegradable.

Test substance: anhydrous substance

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

Substance is not very persistent and very bioaccumulative (vPvB).

Substance is not persistent, bioaccumulative, and toxic (PBT).

12.6. Endocrine disrupting properties

No data available

12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product:

Dispose according to legal requirements.

Packaging:

Legal requirements are to be considered in regard of reuse or disposal of used packaging materials

Further information:

Provisions relating to waste:

EC Directive 2006/12/EC; 2008/98/EEC

Regulation No. 1013/2006

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For personal protection see section 8.

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID:1170

IMDG:1170

IATA:1170

14.2 UN proper shipping name

ADR/RID:ETHANOL

IMDG:ETHANOL

IATA:Ethanol

14.3 Transport hazard class(es)

ADR/RID:3

IMDG: 3

IATA: 3

14.4 Packaging group

ADR/RID:II

IMDG: II

IATA: II

14.5 Environmental hazards

ADR/RID:no

Marine pollutant: no

14.6 Special precautions for user

No data available

14.7 Maritime transport in bulk according to IMO instruments

No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Basis	Value	Remarks
Substances of very high concern (SVHC)		This product does not contain substances of very high concern according to Regulation (EC) No Article 57 above the respective regulatory 1907/2006 (REACH), concentration limit of $\geq 0.1\%$ (w/w).

Other inventory information

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US. Toxic Substances Control Act
On TSCA Inventory

Australia. Inventory of Industrial Chemicals (AIIC), as amended
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. Inventory of Chemicals and Chemical Substances (PICCS)
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

Taiwan Chemical Substance Inventory (TCSI)
On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Text of H-statements referred to under heading 3

ethanol; ethyl alcohol : H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.

Further information

All directives and regulations refer to amended versions.

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Vertical lines in the left hand margin indicate a relevant amendment from the previous version.

Abbreviations:

EC European Community

CAS Chemical Abstracts Service

DNEL Derived no effect level

PNEC Predicted no effect level

vPvB Very persistent and very bioaccumulative substance

PBT Persistent, bioaccumulative und toxic substance

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.
