

Safety data sheet	rotronic
MSDS_5%rF_2022_EN.docx	Safety data sheet in accordance with Regulation (EC) No. 1907/2006 Version 5.1 Revised 28.11.2022 Printed on November 28, 2022

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

1.1 Product identifiers

Product name	Humidity Standard 5 %RH
Product number	EA05-SCS
Brand	ROTRONIC
REACH no.	There is no registration number available for this substance because the substance or its use is exempted from registration, the annual tonnage does not require registration or registration is planned for a later point in time.
CAS no.	71626-99-8 7699-45-8
UFI code	QCUE-C0KE-S00C-X4HH

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

Identified uses	Suitable only for the calibration of humidity meters
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1.3 Details of the supplier of the safety data sheet

Company	ROTRONIC AG Grindelstrasse 6 CH-8303 Bassersdorf	ROTRONIC Messgeräte GmbH Einsteinstrasse 17-23 D-76275 Ettlingen
Telephone	+41 44 838 11 11	+49 7243 383 250
Fax	+41 44 838 14 87	+49 7243 383 260
Email address	measure@rotronic.ch	info@rotronic.de

1.4 Emergency telephone number

Emergency telephone no.	Tox Info Suisse +41 44 251 51 51 (145)	Munich Poison Information Center (<i>Giftnotruf München</i>) +49 89 19240
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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [EU-GHS/CLP]

Acute toxicity, oral (Category 4)	H302
Skin corrosion (Category 1B)	H314
Skin sensitization (Category 1)	H317
Chronic aquatic toxicity (Category 2)	H411
Eye irritant (Category 2)	H319

The complete text descriptions of the hazard statements mentioned in this section can be found in section 16.

2.2 Label elements

Pictogram		
Signal word	Danger	
Hazard statement(s)	H302	Harmful if swallowed.
	H314	Causes severe skin burns and eye damage.
	H317	May cause an allergic skin reaction.
	H319	Causes serious eye irritation.
	H411	Toxic to aquatic life with long lasting effects.
Precautionary statement(s)	P273	Avoid release to the environment.

	P280	Wear protective gloves/protective clothing/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.
	P310	Immediately call a POISON CENTER or doctor/physician.
Supplemental hazard statements	None	

2.3 Other hazards

None

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms	Calibration solution Aqueous solution of Br ₂ Ca·xH ₂ O, Br ₂ Zn and distilled H ₂ O
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Hazardous constituents according to Regulation (EC) No. 1272/2008

Constituent		Classification	Concentration
Calcium bromide hydrate			
CAS no.	71626-99-8	Eye Irrit. 2; H319	10 - 40 %
EC no.	232-164-6		
Zinc bromide			
CAS no.	7699-45-8	Acute Tox. 4; Skin Corr. 1B; Skin Sens. 1; Aquatic Chronic 2; H302, H314, H317, H411	40 - 70 %
EC no.	231-718-4		
Water			
CAS no.	7732-18-5	-	10 - 20 %
EC no.	231-791-2		

Hazardous constituents according to Directive 1999/45/EC

Constituent		Classification	Concentration
Calcium bromide hydrate			
CAS no.	71626-99-8	Xi, R36	10 - 40 %
EC no.	232-164-6		
Zinc bromide			
CAS no.	7699-45-8	C, N, R22 - R34 - R43 - R51/53	40 - 70 %
EC no.	231-718-4		
Water			
CAS no.	7732-18-5	-	10 - 20 %
EC no.	231-791-2		

For the full text of the H-statements and P-phrases mentioned in this section, see section 16.

SECTION 4: First aid measures**4.1 Description of first aid measures****General advice**

Consult a physician. Present this safety data sheet to the physician in attendance.

After inhalation

After inhalation, move the affected person into the fresh air. In the event of respiratory arrest, apply mouth to mouth resuscitation.

After skin contact

Remove any soiled clothing and shoes immediately.
Wash off with soap and plenty of water. Consult a physician.

After eye contact

Rinse thoroughly with plenty of water for at least fifteen minutes and consult a physician.

After swallowing

Do NOT induce vomiting. Never introduce anything through the mouth of an unconscious person.
Rinse the mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described on the label (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment

No data available.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical extinguishing agents or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Hydrogen bromide, zinc/zinc oxides, calcium oxide.

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Suppress the formation of dust. Avoid breathing vapors/mist/gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid contact with the substance. See section 8 for personal protective equipment.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so.
Discharge into the environment must be avoided. Do not let product enter drains.

6.3 Methods and material for containment and cleaning up

Take up with an inert absorbent material and dispose of as waste requiring special supervision. Collect in suitable and sealed containers for disposal.

6.4 Reference to other sections

Disposal: see section 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid contact with the eyes, skin and clothing. Avoid breathing vapor or mist. Suppress formation of aerosol.

See section 2.2 for information on precautions.

7.2 Conditions for safe storage, including any incompatibilities

Keep the ampoules sealed and unopened in a cool, dry and well-ventilated place. Store glass ampoules in their sealed original packaging and protect this from impacts.

7.3 Specific end uses

Except for the uses identified in section 1.2, no other specific uses are anticipated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

Does not contain any substances with workplace exposure limits.

8.2 Exposure controls

Appropriate engineering controls

Usual general occupational hygiene precautions.

The usual precautions for handling chemicals must be observed.

Wash your hands before breaks and at the end of work.

Personal protective equipment

Eye/face protection

Face protection and safety goggles. The eye protection you use must have been tested and approved in accordance with official standards, e.g. NIOSH (US) or EN 166 (EU).

Skin protection

Work with gloves. Gloves must be inspected before use. Use a suitable glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The protective gloves used must comply with the specifications of EC Directive 2016/425 and the standard EN 374 derived from it.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Breakthrough time: 480 min.

Tested material: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Breakthrough time: 480 min.

Tested material: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Data source: KCL GmbH, D-36124 Eichenzell, telephone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN 374

If used in solution or mixed with other substances and under conditions which differ from EN 374, contact a supplier of CE approved gloves. This recommendation is advisory only and must be

evaluated by an industrial hygienist and a safety professional familiar with the specific situation of anticipated use by our customers. It should not be construed as approval for any specific use scenario.

Body protection

Impermeable protective clothing. The type of protective equipment chosen must be suitable for the concentration and quantity of the hazardous substance at the workplace.

Respiratory protection

Is not necessary for the sole approved use for calibration of humidity measuring instruments.

Where protection against annoying dust concentrations is required, use a dust mask with particulate filter N100 (US) or a respirator mask with filter type P3 (EN 143).

The breathing apparatus and its components must have been tested and approved in accordance with national standards, e.g. NIOSH (US) or CEN (EU).

Hygiene measures

The usual precautions for handling chemicals must be observed. Wash hands before breaks, at the end of work and after proper and correct use for humidity calibration.

Environmental exposure controls

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance	State: liquid Color: clear, brownish
b) Odor	No data available
c) Odor threshold	Not applicable
d) pH value	4.5
e) Melting point/freezing point	No data available
f) Initial boiling point and boiling range	165 °C at 1013 hPa
g) Flash point	Not applicable
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	No data available
l) Vapor density	No data available
m) Relative density	2.28 g/cm ³
n) Solubility	Completely soluble
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

9.2 Other safety information

No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available.

10.2 Chemical stability

Stable under the specified storage conditions.

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

Accidental opening of the ampoules or glass breakage.

10.5 Incompatible materials

Strong acids, strong oxidants, sodium/sodium oxides, potassium.

10.6 Hazardous decomposition products

In case of fire, hazardous decomposition products may be formed:

Hydrogen bromide, Calcium oxide

Other decomposition products - No data available.

In case of fire: see section 5.

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity**

LD50 Oral - rat	1,447 mg/kg
LD50 Skin - rabbit	> 2,000 mg/kg

Skin corrosion/irritation

Skin - rabbit	Corrosive
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Serious eye damage/irritation

Eyes - rabbit	Strong eye irritation
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Respiratory or skin sensitization

Maximization test (GPMT) - guinea pig	May cause sensitization by skin contact. (OECD Test Guideline 406)
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Germ cell mutagenicity

Rat	Abdominal tumor cytogenic analysis
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Carcinogenicity

This product is or contains a component that is not classified according to the classifications of IARC, ACGIH, NTP or EPA regarding carcinogenic effects.

IARC: No component of this product present at levels greater than or equal to 0.1% has been identified by the IARC as a probable, possible or confirmed human carcinogen.

Reproductive toxicity

No data available.

Specific target organ toxicity (STOT) – single exposure

No data available.

Specific target organ toxicity (STOT) – repeated exposure

No data available.

Aspiration hazard

No data available.

Additional information

RTECS: ZH1150000

Coughing, breathing difficulties, headache, nausea, vomiting

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish

LC50 - Other fish	115.9 mg/l - 96 h (OECD Test Guideline 203)
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Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia magna (species of water flea)	8.8 mg/l - 48 h (OECD Test Guideline 202)
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Toxicity to algae

EC50 - Skeletonema costatum (diatom)	6.6 mg/l - 72 h
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12.2 Persistence and degradability

Biodegradability	Result: - According to the results of the biodegradability test, this product is not easily biodegradable.
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No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

A PBT/vPvB assessment is not available because a chemical safety assessment was not required/not conducted.

12.6 Other adverse effects

Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

All national and local laws must be observed.

Commission an approved disposal company to dispose of residual quantities and solutions that can no longer be used. These products must be dissolved in or mixed with a flammable solvent and destroyed in an incinerator for chemicals (with afterburner and exhaust air scrubber).

Contaminated packaging

Disposal identical to unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID	3264
IMDG	3264
IATA	3264

14.2 UN proper shipping name

ADR/RID	Corrosive Liquid, Acidic, Inorganic, N.O.S. (Zinc bromide)
IMDG	Corrosive Liquid, Acidic, Inorganic, N.O.S. (Zinc bromide)
IATA	Corrosive Liquid, Acidic, Inorganic, N.O.S. (Zinc bromide)

14.3 Transport hazard classes

Safety data sheet

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ADR/RID	8
IMDG	8
IATA	8

14.4 Packing group

ADR/RID	III
IMDG	III
IATA	III

14.5 Environmental hazards

ADR/RID	No
IMDG Marine pollutant	Yes
IATA	No

14.6 Special precautions for user

Storage only in original packaging.

Handling only with suitable protective equipment (see section 8).

14.7 Further information

According to ADR/IDR 2013 Chapter 3.4, Dangerous Goods Packed in Limited Quantities, the product is excepted from ADR/IDR.

Extract Dangerous Goods List Chapter 3.2

Excepted Quantities (7b) E1

Limited Quantities (7a) 5 l

SECTION 15: Regulatory information

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

This safety data sheet fulfils the requirements under Regulation (EC) No. 1907/2006.

National regulations

Water endangering class:

WGK 3, severely hazardous to water – self classification

15.2 Chemical safety assessment

No chemical safety assessment was performed for this product.

SECTION 16: Other information

Complete text descriptions of the hazard statements in section 2 and 3

Eye Irrit.	Eye irritation
Acute Tox.	Acute toxicity
Aquatic Chronic	Chronic aquatic toxicity
Skin Corr.	Skin corrosion
Skin Sens.	Skin sensitization
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H411	Toxic to aquatic life with long-lasting effects

Further information

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