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

1.1. Product identifier

Trade name

Orbin RT-P

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

Use of the substance/mixture

Cleaning material/ Detergent

1.3. Details of the supplier of the safety data sheet

Address/Manufacturer

BÜFA Cleaning GmbH & Co. KG
August-Hanken-Str. 30
26125 Oldenburg

Telephone no.	+49 441 9317 0
Fax no.	+49 441 9317 100
Information provided by / telephone	Department product safety / +49 441 9317 108
E-Mail	sds-cleaning@buefa.de

1.4. Emergency telephone number

Poison Information Center Goettingen: +49 551 19240

SECTION 2: Hazards identification ***

2.1. Classification of the substance or mixture

Classification (Regulation (EC) No. 1272/2008)

Skin Corr. 1A	H314
Eye Dam. 1	H318
Aquatic Acute 1	H400
Aquatic Chronic 2	H411
Met. Corr. 1	H290

The product is classified and labelled in accordance with Regulation (EC) No 1272/2008
For explanation of abbreviations see section 16.

2.2. Label elements

Labelling according to regulation (EC) No 1272/2008

Hazard pictograms

Signal word

Danger

Hazard statements ***

H314	Causes severe skin burns and eye damage.
H410	Very toxic to aquatic life with long lasting effects.
H290	May be corrosive to metals.

Precautionary statements ***

P273	Avoid release to the environment.
P280.2	Wear protective gloves/ eye/ face protection.

P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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.

Hazardous component(s) to be indicated on label (Regulation (EC) No. 1272/2008)

contains *** Amines, C12-C14-Alkyldimethyl-N-oxides; Potassium hydroxide; Sodium hypochlorite, solution

Sensitising substances

Supplemental information *

EUH031 Contact with acids liberates toxic gas.

2.3. Other hazards

***

The product contains no PBT substances. The product contains no vPvB substances. This product does not contain a substance that has endocrine disrupting properties with respect to human. The product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms.

SECTION 3: Composition/information on ingredients ***

3.2. Mixtures

Hazardous ingredients *

Potassium hydroxide

CAS No.	1310-58-3				
EINECS no.	215-181-3				
Registration no.	01-2119487136-33-XXXX				
Concentration		>=	5	< 9,6	%
Acute Tox. 4	H302				
Skin Corr. 1A	H314				
Met. Corr. 1	H290				

Concentration limits (Regulation (EC) No. 1272/2008)

Eye Irrit. 2	H319	>= 0,5 < 2 %
Skin Corr. 1A	H314	>= 5 %
Skin Corr. 1B	H314	>= 2 < 5 %
Skin Irrit. 2	H315	>= 0,5 < 2 %
ATE oral	333	mg/kg

Sodium hypochlorite, solution

CAS No.	7681-52-9				
EINECS no.	231-668-3				
Registration no.	01-2119488154-34-XXXX				
Concentration		>=	3	< 4,5	%
Skin Corr. 1B	H314				
Eye Dam. 1	H318				
Aquatic Acute 1	H400				
Aquatic Chronic 1	H410				

Concentration limits (Regulation (EC) No. 1272/2008)

Aquatic Acute 1	H400	M = 10
Aquatic Chronic 1	H410	M = 1
	EUH031	>= 5 %
ATE oral	1.100	mg/kg

Additional remarks:

CLP Regulation (EC) No 1272/2008, Annex VI, Note B

Amines, C12-C14-Alkyldimethyl-N-oxides

CAS No.	308062-28-4				
EINECS no.	931-292-6				
Registration no.	01-2119490061-47-XXXX				
Concentration	>=	1	<	2,2	%
Eye Dam. 1	H318				
Aquatic Acute 1	H400				
Aquatic Chronic 2	H411				
Acute Tox. 4	H302				
Skin Irrit. 2	H315				

ATE oral 1.064 mg/kg

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

After inhalation

Ensure supply of fresh air. Summon a doctor immediately.

After skin contact

Wash off immediately with soap and water.

After eye contact

In case of contact with the eyes rinse thoroughly with plenty of water or with an eye-cleaning solution. Seek medical advice immediately.

After ingestion

Do not induce vomiting. Call in a physician immediately and show him the Safety Data Sheet.

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

There is no further relevant information available

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

There is no further relevant information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide, Dry powder, Water spray jet, Alcohol-resistant foam, Extinguishing measures to suit surroundings

Non suitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

In case of combustion evolution of dangerous gases possible. In the event of fire the following can be released: Chlorine (Cl2)

5.3. Advice for firefighters

Use self-contained breathing apparatus.
Cool endangered containers with water spray jet.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Keep people away and stay on the upwind side. Use breathing apparatus if exposed to vapours/dust/aerosol. Use personal protective clothing. Avoid contact with skin, eyes and clothing.

6.2. Environmental precautions

Do not allow to enter drains or waterways.

6.3. Methods and material for containment and cleaning up

Take up with absorbent material (eg sand, kieselguhr, universal binder). When picked up, treat material as prescribed under Section 13 "Disposal".

6.4. Reference to other sections

Refer to protective measures listed in Sections 7 and 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Provide good ventilation of working area (local exhaust ventilation if necessary).
Containers in danger should be cooled with water.

7.2. Conditions for safe storage, including any incompatibilities

Keep only in original packaging. Provide ventilation of containers. Provide alkali-resistant floor.
Do not store together with: Acids, Reducing agents
Keep only in the original container in a cool, well ventilated place. Protect from heat and direct sunlight.

7.3. Specific end use(s)

No information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limit values

Potassium hydroxide

List	EH40	
Type	WEL	
Short term exposure limit	2	mg/m³

Maximum limit value; Skin resorption / sensibilisation: Pregnancy group: Status: 2005

8.2. Exposure controls

General protective and hygiene measures

Observe the usual precautions for handling chemicals. Personal protective equipment must comply with the Regulation (EC) No 2016/425 and the resulting CEN standards. The following information on personal protective equipment (PPE) is to be understood as a suggestion. The selection of the necessary PPE must be considered by the employer depending on the activities to be carried out and the local conditions. If it is determined during the on-site risk assessment that there is no danger to the employee, there is no need to wear PPE or the scope of the PPE to be used can be adjusted accordingly.

Respiratory protection

Breathing apparatus in the event of aerosol or mist formation. Short term: filter apparatus, Filter B

Hand protection

Chemical resistant gloves

Appropriate Material	nitrile		
Material thickness	>	0,4	mm
Breakthrough time	>	480	min

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leaktightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Eye protection

Tightly fitting safety glasses

Body protection

Alkali-resistant protective clothing

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	liquid				
Colour	yellowish				
Odour	Product specific				
Melting point					
Remarks	not determined				
Boiling point					
Remarks	not determined				
Flammability					
evaluation	not determined				
Explosion limits					
Remarks	not determined				
Flash point					
Value	>	100			°C
Ignition temperature					
Remarks	not determined				
Thermal decomposition					
Remarks	Not relevant				
pH value					
Value		12,0	to	13,0	
Concentration/H2O		1	%		
Viscosity					
Value	appr.	14			s
Method	DIN 53211 4 mm				
Solubility in other solvents					
	not determined				
Octanol/water partition coefficient (log Pow)					
Remarks	Not relevant				
Vapour pressure					
Remarks	not determined				
Density					
Value	appr.	1,15			kg/l
Vapour density					
Remarks	not determined				
Particle characteristics					
Remarks	irrelevant (liquid)				

9.2. Other information

Odour threshold	
Remarks	No data available
Solubility in water	
Remarks	miscible

SECTION 10: Stability and reactivity

10.1. Reactivity
No hazardous reactions when stored and handled according to prescribed instructions.

10.2. Chemical stability
The product is stable.

10.3. Possibility of hazardous reactions
Reactions with water and acids.

10.4. Conditions to avoid
Protect from heat and direct sunlight.

Thermal decomposition

Remarks	Not relevant

10.5. Incompatible materials
Reactions with metals, with evolution of hydrogen. Strong exothermic reaction with acids. Reducing agents

10.6. Hazardous decomposition products
Chlorine

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity

ATE	3.608	mg/kg
Method	calculated value (Regulation (EC) No. 1272/2008)	

Based on available data, the classification criteria are not met.

Acute oral toxicity (Components)

Amines, C12-C14-Alkyldimethyl-N-oxides

Reference substance	Amines, C12-C14-Alkyldimethyl-N-oxides	
Species	rat	
LD50	1064	mg/kg

Potassium hydroxide

Reference substance	potassium hydroxide ...%	
ATE	333	mg/kg

Sodium hypochlorite, solution

Acute dermal toxicity

Based on available data, the classification criteria are not met.

Acute dermal toxicity (Components)

Sodium hypochlorite, solution

Acute inhalational toxicity

Based on available data, the classification criteria are not met.

Acute inhalative toxicity (Components)

Sodium hypochlorite, solution

Skin corrosion/irritation

evaluation	corrosive

The classification criteria are met.

Serious eye damage/irritation

evaluation	corrosive

The classification criteria are met.

Sensitization

Based on available data, the classification criteria are not met.

Sensitization (Components)
Based on available data, the classification criteria are not met.

Mutagenicity
Based on available data, the classification criteria are not met.

Reproductive toxicity
Based on available data, the classification criteria are not met.

Carcinogenicity
Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity (STOT)

Single exposure
Based on available data, the classification criteria are not met.

Repeated exposure
Based on available data, the classification criteria are not met.

Aspiration hazard
Based on available data, the classification criteria are not met.

11.2 Information on other hazards

Endocrine disrupting properties with respect to humans
The product does not contain a substance that has endocrine disrupting properties with respect to humans.

SECTION 12: Ecological information

12.1. Toxicity

Fish toxicity

Amines, C12-C14-Alkyldimethyl-N-oxides

Reference substance	Amines, C12-C14-Alkyldimethyl-N-oxides	
LC50	2,67	mg/l

Sodium hypochlorite, solution

Reference substance	sodium hypochlorite, solution… % Cl active	
Species	rainbow trout (Oncorhynchus mykiss)	
LC50	0,06	mg/l
Duration of exposure	96 h	
	sodium hypochlorite, solution… % Cl active	
Species	Oncorhynchus kisutch	
LC50	0,032	mg/l
Duration of exposure	96 h	

Daphnia toxicity

Amines, C12-C14-Alkyldimethyl-N-oxides

Reference substance	Amines, C12-C14-Alkyldimethyl-N-oxides	
Species	Daphnia pulex	
EC50	3,1	mg/l

Sodium hypochlorite, solution

Reference substance	sodium hypochlorite, solution… % Cl active	
Species	Daphnia magna	
EC50	0,141	mg/l
Duration of exposure	48 h	
Method	OECD 202	

Algae toxicity

Amines, C12-C14-Alkyldimethyl-N-oxides

Reference substance	Amines, C12-C14-Alkyldimethyl-N-oxides	
IC50	0,143	mg/l

Sodium hypochlorite, solution

Reference substance	sodium hypochlorite, solution… % Cl active		
Species	Pseudokirchneriella subcapitata		
EC50	0,04		mg/l

Bacteria toxicity

Sodium hypochlorite, solution

Reference substance	sodium hypochlorite, solution… % Cl active		
Species	activated sludge		
EC50	> 3		mg/l
Duration of exposure	3	h	

12.2. Persistence and degradability

The surfactant(s) contained in this preparation complies(comply) with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents.Do not discharge product unmonitored into the environment.

Biodegradability

Amines, C12-C14-Alkyldimethyl-N-oxides

Reference substance	Amines, C12-C14-Alkyldimethyl-N-oxides
evaluation	biodegradable

12.3. Bioaccumulative potential

For this subsection there is no ecotoxicological data available on the product as such.

Octanol/water partition coefficient (log Pow)

Remarks	Not relevant

12.4. Mobility in soil

For this subsection there is no ecotoxicological data available on the product as such.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment

The product contains no PBT substances. The product contains no vPvB substances.

12.6 Endocrine disrupting properties

Endocrine disrupting properties with respect to the envrionment

The product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

For this subsection there is no ecotoxicological data available on the product as such.

Behaviour in sewers [waste treatment plants]

The product is an alkaline solution. Neutralization is normally necessary before a waste water is discharged into sewage treatment plants.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations for the product

Allocation of a waste code number, according to the European Waste Catalogue (EWC), should be carried out in agreement with the regional waste disposal company.

Disposal recommendations for packaging

Completely emptied packagings can be given for recycling.

SECTION 14: Transport information

	Land transport ADR/RID	Marine transport IMDG/GGVSee
14.1. UN number	1814	1814
14.2. UN proper shipping name	POTASSIUM HYDROXIDE SOLUTION	POTASSIUM HYDROXIDE SOLUTION
14.3. Transport hazard class(es)	8	8
14.4. Packing group	II	II
Label		
14.5. Environmental hazards	 ENVIRONMENTALLY HAZARDOUS	 ENVIRONMENTALLY HAZARDOUS
Marine Pollutant		Marine Pollutant
Limited Quantity	1 l	1 l
Transport category	2	
Tunnel restriction code	E	
Hazard id. no.	80	
EmS		F-A, S-B

Information for all modes of transport

14.6. Special precautions for user

Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Other information

14.7 Maritime transport in bulk according to IMO instruments

Not relevant

SECTION 15: Regulatory information ***

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

Major-accident categories acc. 2012/18/EU ***

Category 41

Ingredients (Regulation (EC) No 648/2004)

less than 5 %: ***

chlorine-based bleaching agents, phosphates, non-ionic surfactants, anionic surfactants

Further ingredients ***

bronopol (INN)

VOC

VOC (EU)	0	%

Other information ***

The product does not contain substances according to: Candidate List for inclusion in Annex XIV of Regulation (EC) No. 1907/2006 (REACH).

15.2. Chemical safety assessment

For this preparation a chemical safety assessment has not been carried out.

SECTION 16: Other information

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Skin Corr. 1A	H314	Calculation method
Eye Dam. 1	H318	Calculation method
Aquatic Acute 1	H400	Calculation method
Aquatic Chronic 2	H411	Calculation method
Met. Corr. 1	H290	Calculation method

Hazard statements listed in Chapter 2/3

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

CLP categories listed in Chapter 2/3

Acute Tox. 4	Acute toxicity, Category 4
Aquatic Acute 1	Hazardous to the aquatic environment, acute, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic, Category 2
Eye Dam. 1	Serious eye damage, Category 1
Met. Corr. 1	Substance or mixture corrosive to metals, Category 1
Skin Corr. 1A	Skin corrosion, Category 1A
Skin Corr. 1B	Skin corrosion, Category 1B
Skin Irrit. 2	Skin irritation, Category 2

Abbreviations

ADR: Accord européen relatif au transport international des marchandises Dangereuses par Route
RID: Règlement concernant le transport international ferroviaire de marchandises dangereuses
GGVSee: Gefahrgutverordnung See
IMDG: International Maritime Code for Dangerous Goods
CAS: Chemical Abstracts Service
EAK: Europäischer Abfallkatalog
EINECS: European Inventory of Existing Commercial Chemical Substances
VOC: Volatile Organic Compound
GefStoffV: Gefahrstoffverordnung
TA Luft: Technische Anleitung zur Reinhaltung der Luft
INCI: International Nomenclature of Cosmetic Ingredients
n.a.g.: nicht anders genannt
MAK: Maximale Arbeitsplatz-Konzentration
AGW: Arbeitsplatzgrenzwert
BGW: Biologischer Grenzwert
TRGS: Technische Regeln für Gefahrstoffe

OEL: Occupational exposure limit
SUVA: Schweizerische Unfallversicherungsanstalt
WEL: Workplace exposure limit
MAC: Maximale aanvaarde concentratie (Netherlands)
MEL: Maximum exposure limits
NOEL: No observable effect level
NOEC: No observable effect concentration
LD: Lethal dose
LC: Lethal concentration
LLC: Lowest lethal concentration
LLC: Lowest lethal concentration
PBT: Persistent, Bioaccumulative and Toxic
vPvB: Very persistent and very bioaccumulative
SVHC: Substances of very high concern
DNEL: Derived no effect level
DMEL: Derived minimal effect level
PNEC: Predicted no effect concentration
PEC: Predicted environmental concentration
GHS: Globally Harmonized System of classification and Labelling of Chemicals
REACH: Registration, Evaluation, Autohorisation and Restriction of Chemicals
UN: United Nations
EG: Europäische Gemeinschaft
EWG: Europäische Wirtschaftsgemeinschaft
EU: European Union
HSNO: Hazardous Substances and New Organisms Act (New Zealand)
ATE: Acute Toxicity Estimate
STOT: Specific Target Organ Toxicity
IOELV: Indicative Occupational Exposure Limit Values

Supplemental information

Relevant changes compared with the previous version of the safety data sheet are marked with: ***
This information is based on our present state of knowledge. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship.