

SECTION 1: Identification

1.1. Product identifier

Name : Care cartridge

1.2. Other means of identification

Further information : Article number: 56.01.914

1.3. Recommended use of the chemical and restrictions on use

Recommended use : RATIONAL Care cartridge for all iHexagon, iCombi Pro cooking systems with iCareSystem AutoDose for commercial use,
Acidic descaler for professional users

1.4. Details of the supplier of the safety data sheet

Manufacturer

RATIONAL AG

Siegfried-Meister-Straße 1 Landsberg am Lech 86899 Germany

T +49 8191 327 387 - F +49 8191 327 231

reinigung@rational-online.com - www.rational-online.com

E-mail address of competent person responsible for the SDS: sds@gbk-ingelheim.de

1.5. Emergency telephone number

Emergency number : Emergency CONTACT (24-Hour-Number): GBK GmbH +49 (0)6132-84463

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Acute toxicity (oral) Category 4	H302
Skin corrosion/irritation Category 1	H314
Serious eye damage/eye irritation Category 1	H318
Skin sensitization, Category 1	H317
Specific target organ toxicity (single exposure) Category 3	H335

2.2. Label elements

Hazard pictograms (GHS PH) :



Signal word (GHS PH) : Danger

Contains : Maleic acid; Citric acid; adipic acid

Hazard statements (GHS PH) : H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H335 - May cause respiratory irritation

Precautionary statements (GHS PH) : P101 - If medical advice is needed, have product container or label at hand.
P280 - Wear protective gloves, protective clothing, eye protection, face protection.
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water .
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, a doctor
P501 - Dispose of contents/container to in accordance with local and national regulations.

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2.3. Other hazards

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS PH classification
Maleic acid	CAS-No.: 110-16-7	50 – 70	Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Skin Sens. 1, H317
Citric acid	CAS-No.: 77-92-9	20 – 30	Eye Irrit. 2, H319 STOT SE 3, H335
adipic acid	CAS-No.: 124-04-9	10 – 20	Eye Irrit. 2, H319

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Medical personnel should be made aware of substance(s) involved and take measures for self protection.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. If symptoms persist, consult a doctor.
First-aid measures after skin contact	: After contact with skin, wash immediately and thoroughly with water and soap. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Wash immediately with plenty water (during 15 minutes), also under eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. If the person is fully conscious, make him/her drink plenty of water. Never give an unconscious person anything to drink. Call a poison center/doctor/physician if you feel unwell.

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

Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	: Irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Eye irritation.
Symptoms/effects after ingestion	: Ingestion may cause nausea, vomiting and diarrhea.

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

Treatment	: If possible, show the doctor this safety data sheet. Failing this, show the doctor the packaging or label.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam.
Unsuitable extinguishing media	: Do not use a solid water stream as it may scatter and spread fire.

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5.2. Special hazards arising from the substance or mixture

Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

5.3. Advice for firefighters

Firefighting instructions : Do not allow run-off from fire fighting to enter drains or water courses. Contain the extinguishing fluids by bunding.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid breathing dust. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Mechanically recover the product.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Use only outdoors or in a well-ventilated area. Avoid breathing dust. Avoid contact with skin and eyes. Wear personal protective equipment.
Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.
Storage temperature : 10 – 40 °C

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

Exposure limit values of other components

No additional information available

8.2. Monitoring

No additional information available

8.3. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

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8.4. Personal protective equipment

Hand protection:

Please follow the instructions related to the permeability and the penetration time provided by the manufacturer. Choosing the proper glove is a decision that depends not only on the type of material, but also on other quality features, which differ for each manufacturer

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Chemically resistant protective gloves	Nitrile rubber (NBR), butyl rubber	3 (> 60 minutes)			EN ISO 374

Eye protection:

Protective goggles (EN 166)

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Environmental exposure controls : Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: No data available
Color	: white
Odor	: characteristic
Odor threshold	: No data available
pH	: 1.9 pH solution concentration: 1 %
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Density	: 1.42 g/cm ³
Solubility	: Water: soluble in water
Partition coefficient n-octanol/water (Log Kow)	: No data available
Viscosity, kinematic	: Not applicable
Explosion limits	: Not applicable
Lower explosive limit (LEL)	: No data available
Upper explosive limit (UEL)	: No data available

9.2. Other information

VOC content : < 3 %

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SECTION 10: Stability and reactivity

Reactivity	: The product is non-reactive under normal conditions of use, storage and transport
Chemical stability	: Stable under normal conditions
Possibility of hazardous reactions	: No dangerous reactions known under normal conditions of use
Conditions to avoid	: Protect from moisture
Incompatible materials	: Strong bases, Light metals, Oxidizing agent
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced

SECTION 11: Toxicological information

11.1. Acute toxicity

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	: Not classified (Based on available data, the classification criteria are not met)

Care cartridge	
ATE PH (oral)	714.286 mg/kg body weight

Maleic acid (110-16-7)	
LD50 dermal rabbit	2620 mg/kg body weight Animal: rabbit, Animal sex: female, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)

Citric acid (77-92-9)	
LD50 oral	5400 mg/kg body weight Animal: mouse, Guideline: OECD Guideline 401 (Acute Oral Toxicity), Remarks on results: other:, 95% CL: 4500 - 6400
LD50 dermal rat	> 2000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)

adipic acid (124-04-9)	
LD50 oral rat	5560 mg/kg
LC50 Inhalation - Rat	> 7.7 mg/l (4 h, (OECD 403 method))

Skin corrosion/irritation	: Causes severe skin burns. pH: 1.9
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)
Specific target organ toxicity – single exposure	: May cause respiratory irritation.
Specific target organ toxicity – repeated exposure	: Not classified (Based on available data, the classification criteria are not met)

Citric acid (77-92-9)	
LOAEL (oral, rat, 90 days)	8000 mg/kg body weight Animal: rat
NOAEL (oral, rat, 90 days)	4000 mg/kg body weight Animal: rat

Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)
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SECTION 12: Ecological information

12.1. Ecotoxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute)	: Not classified (Based on available data, the classification criteria are not met)

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Hazardous to the aquatic environment, long-term (chronic) : Not classified (Based on available data, the classification criteria are not met)

Maleic acid (110-16-7)	
EC50 Daphnia 1	42.81 mg/l Test organisms (species): Daphnia magna
EC50 - Crustacea [2]	≈ 93.8 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	74.35 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	17.17 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
NOEC (chronic)	10 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

Citric acid (77-92-9)	
LC50 fish 1	440 mg/l (48 h, Leuciscus idus (golden orfe), (OECD 203 method)
EC50 Daphnia 1	1535 mg/l (24 h)

adipic acid (124-04-9)	
EC50 Daphnia 1	46 mg/l 48 h, (OECD 202 method)
ErC50 algae	59 mg/l Pseudokirchneriella subcapitata, (OECD 201 method)
NOEC chronic crustacea	6.3 mg/l 48 h, (OECD 211 method)
LC0, Danio rerio	> 1000 mg/l (96 h, ECHA)

12.2. Persistence and degradability

Care cartridge	
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. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.

12.3. Bioaccumulative potential

Care cartridge	
Bioaccumulative potential	No additional information available

12.4. Mobility in soil

Care cartridge	
Mobility in soil	No additional information available

12.5. Other adverse effects

Ozone : Not classified (Based on available data, the classification criteria are not met)
Other adverse effects : No additional information available

SECTION 13: Disposal considerations

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.




SECTION 14: Transport information

In accordance with IMDG / IATA / UN RTDG

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IMDG	IATA	UNRTDG
14.1. UN number		
3261	3261	3261
14.2. Proper Shipping Name		
CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (Maleic acid ; citric acid ; adipic acid)	Corrosive solid, acidic, organic, n.o.s. (Maleic acid ; citric acid ; adipic acid)	CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (Maleic acid ; Citric acid ; adipic acid)
14.3. Transport hazard class(es)		
8	8	8
		
14.4. Packing group		
II	II	II
14.5. Environmental hazards		
Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available		

14.6. Special precautions for user

UN RTDG

UN-No.(UN RTDG) : 3261
Special provision (UN RTDG) : 274
Limited quantities (UN RTDG) : 1 kg
Excepted quantities (UN RTDG) : E2
Packing instruction (UN RTDG) : P002, IBC08
Special packing provisions (UN RTDG) : B2, B4
Portable tank and bulk container special instructions (UN RTDG) : T3
Portable tank and bulk container special provisions (UN RTDG) : TP33

IMDG

UN-No. (IMDG) : 3261
Special provision (IMDG) : 274
Limited quantities (IMDG) : 1 kg
Excepted quantities (IMDG) : E2
Packing instructions (IMDG) : P002
IBC packing instructions (IMDG) : IBC08
IBC special provisions (IMDG) : B21, B4
Tank instructions (IMDG) : T3
Tank special provisions (IMDG) : TP33
Stowage category (IMDG) : B
Segregation (IMDG) : SGG1, SG36, SG49

IATA

UN-No. (IATA) : 3261
PCA Excepted quantities (IATA) : E2
PCA Limited quantities (IATA) : Y844
PCA limited quantity max net quantity (IATA) : 5kg
PCA packing instructions (IATA) : 859
PCA max net quantity (IATA) : 15kg
CAO packing instructions (IATA) : 863
CAO max net quantity (IATA) : 50kg

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Special provision (IATA) : A3, A803
ERG code (IATA) : 8L

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. National regulations

Priority Chemical List (PCL) and Chemical Control Orders (CCO)		
Initial List of Single Substances and Compounds Covered under Chemical Control Order (CCO) and Priority Chemical List (PCL) DENR Administrative Order 2015-09	Not applicable	
Priority Chemical List DENR Administrative Order 2005-27	Not applicable	
Chemical Control Orders	Not applicable	
Chemical Control Order for Ozone Depleting Substances	Not applicable	

Others		
Food Additives Regulation	Additives approved only for use as food processing	Citric acid (77-92-9)
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Applicable	2-Butenedioic acid (2Z)- (110-16-7) 1,2,3-Propanetricarboxylic acid, 2-hydroxy- (77-92-9) 1,4-BUTANEDICARBOXYLIC ACID (124-04-9)

15.2. International regulations

No additional information available

SECTION 16: Other information

Version : 2.1
Issue date : 11/29/2022
Revision date : 12/20/2024
Supersedes : 8/4/2023

Indication of changes		
Section	Changed item	Comments
1		Modified

Other information : Data of sections 4 to 8, as well as 10 to 12, do partly not refer to the use and the regular employing of the product (in this sense consult information on use and on product), but to liberation of major amounts in case of accidents and irregularities. The information describes exclusively the safety requirements for the product(s) and is based on the present level of our knowledge. The delivery specifications are contained in the corresponding product sheet. This data does not constitute a guarantee for the characteristics of the product(s) as defined by the legal warranty regulations.

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Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disruptor
DOT	Department of Transport
TDG	Transportation of Dangerous Goods
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006

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Abbreviations and acronyms:	
GHS	Globally Harmonized System of Classification, Labelling and Packaging of Chemicals
IBC-Code	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
MARPOL 73/78	MARPOL 73/78: International Convention for the Prevention of Pollution From Ships
ADG	Transport of Australian Dangerous Goods

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should therefore not be construed as guaranteeing any specific property of the product.