Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 04.11.2019 Version number 9 Revision: 04.11.2019

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

· **1.1 Product identifier**
· Trade name: **Radiator Cleaner**

· Article number: 90103
· **1.2 Relevant identified uses of the substance or mixture and uses advised against** No further relevant information available.
· Application of the substance / the mixture Cleaning agent/ Cleaner

· **1.3 Details of the supplier of the safety data sheet**
· Manufacturer/Supplier: AKEMI chemisch technische Spezialfabrik GmbH Tel. +49(0)911-642960
Lechstrasse 28 Fax. +49(0)911-644456
D 90451 Nürnberg e-mail info@akemi.de

· Further information obtainable from: Laboratory
· **1.4 Emergency telephone number:** Product Safety Department AKEMI chemisch technische Spezialfabrik GmbH
Tel. +49(0)911-64296-59
Reachable during the following office hours:
Monday – Thursday from 07:30 a.m. to 16:30 p.m.
Friday from 07:30 a.m. to 13:30 p.m.
+44 (171) 635 91 91
National Poison Inform. Centre
Medical Toxicology Unit
Avalonley Road
London SE14 5ER

* **SECTION 2: Hazards identification**

· **2.1 Classification of the substance or mixture**
· Classification according to Regulation (EC) No 1272/2008


GHS05 corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

· **2.2 Label elements**
· Labelling according to Regulation (EC) No 1272/2008 The product is classified and labelled according to the CLP regulation.
· Hazard pictograms


GHS05

· Signal word Danger

· Hazard-determining components of labelling: urea phosphate
· Hazard statements H314 Causes severe skin burns and eye damage.
H412 Harmful to aquatic life with long lasting effects.
· Precautionary statements P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read label before use.
P260 Do not breathe dusts or mists.

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P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
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/doctor.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **2.3 Other hazards** The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.

· Results of PBT and vPvB assessment

· PBT: Not applicable.

· vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

· **3.2 Chemical characterisation: Mixtures**

· Description: Mixture of substances listed below with nonhazardous additions.

· Dangerous components:

CAS: 5329-14-6 EINECS: 226-218-8 Index number: 016-026-00-0 Reg.nr.: 01-2119488633-28-xxxx	sulphamic acid Skin Irrit. 2, H315; Eye Irrit. 2, H319 Aquatic Chronic 3, H412	50-100%
CAS: 4861-19-2 EINECS: 225-464-3 Reg.nr.: 01-2119489460-34	urea phosphate Skin Corr. 1B, H314	25-50%

· Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· **4.1 Description of first aid measures**

· After inhalation: Supply fresh air; consult doctor in case of complaints.
In case of unconsciousness place patient stably in side position for transportation.

· After skin contact: Immediately wash with water and soap and rinse thoroughly.

· After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· After swallowing: Drink plenty of water and provide fresh air. Call for a doctor immediately.

· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**

· Suitable extinguishing agents: CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· For safety reasons unsuitable extinguishing agents: Water with full jet

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· **5.2 Special hazards arising from the substance or mixture** Formation of toxic gases is possible during heating or in case of fire.
· **5.3 Advice for firefighters**
· Protective equipment: Wear fully protective suit.
Wear self-contained respiratory protective device.
· Additional information Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures** Not required.
· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **6.3 Methods and material for containment and cleaning up:** Pick up mechanically.
· **6.4 Reference to other sections** See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling** Keep receptacles tightly sealed.
· Information about fire - and explosion protection: No special measures required.

· **7.2 Conditions for safe storage, including any incompatibilities**
· Storage:
· Requirements to be met by storerooms and receptacles: No special requirements.
· Information about storage in one common storage facility: Do not store together with alkalis (caustic solutions).
· Further information about storage conditions: Keep container tightly sealed.
· **7.3 Specific end use(s)** No further relevant information available.

*
SECTION 8: Exposure controls/personal protection

· Additional information about design of technical facilities: No further data; see item 7.

· **8.1 Control parameters**
· Ingredients with limit values that require monitoring at the workplace: The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· DNELs

5329-14-6 sulphamic acid		
Oral	DNEL (Langzeit-wiederholt)	5 mg/kg bw/day (BEV)
Dermal	DNEL (Langzeit-wiederholt)	10 mg/kg bw/day (ARB)
		5 mg/kg bw/day (BEV)
Inhalative	DNEL (Langzeit-wiederholt)	70.5 mg/m³ Air (ARB)
		17.4 mg/m³ Air (BEV)

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· PNECs

5329-14-6 sulphamic acid	
PNEC (wässrig)	20 mg/l (KA)
	0.18 mg/l (MW)
	1.8 mg/l (SW)
PNEC (fest)	5 mg/kg Trockengew (BO)
	0.84 mg/kg Trockengew (MWS)
	8.36 mg/kg Trockengew (SWS)

· Additional information: The lists valid during the making were used as basis.

· **8.2 Exposure controls**
· Personal protective equipment:
· General protective and hygienic measures:
Do not eat, drink, smoke or sniff while working.
Use skin protection cream for skin protection.
Clean skin thoroughly immediately after handling the product.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

· Respiratory protection: In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· Protection of hands: Preventive skin protection by use of skin-protecting agents is recommended.
After use of gloves apply skin-cleaning agents and skin cosmetics.
The protection gloves to be used have to comply with the specifications of the directive 89/686/EC and the directive derived decree EN374, respectively, e.g. the above listed protection glove type. The mentioned permeation times´ data were generated and verified with material samples of the recommended protection glove type in the scope of laboratory anylyses of the company KCL GmbH in compliance with EN374.
This recommendation refers exclusively to the material safety data sheet referenced product delivered by Akemi and the indicated field of application. In case of product dilution or in case of mixture with different substances or chemicals, and in condition of EN374 deviation the producer of CE-approved protection gloves must be contacted for detailed information (e.g., KCL GmbH, Germany, 36124 Eichenzell, internet: http://www.kcl.de).

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves
Nitrile rubber, NBR
Chloroprene rubber, CR
Natural rubber, NR
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material Value for the permeation: Level ≤ 6, 480 min

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The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· For the permanent contact gloves made of the following materials are suitable:
Nitrile rubber, NBR
Camatril (KCL, Art_No. 730, 731, 732, 733)
Dermatril (Art_No. 740, 741, 742)
Chloroprene rubber, CR
Camapren (KCL, Art_No. 720, 722, 726)
Natural rubber, NR
Combi-Latex (KCL, Art_No. 395)

· As protection from splashes gloves made of the following materials are suitable:
Nitrile rubber, NBR
Dermatril (KCL, Art_No. 740, 741, 742)
Camatril (KCL, 730, 731, 732, 733)
Natural rubber, NR
Combi-Latex (KCL, Art_No. 395)

· Not suitable are gloves made of the following materials:
Strong material gloves

· Eye protection:

Tightly sealed goggles

· Body protection:
Protective work clothing

*
SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· General Information	
· Appearance:	
Form:	Solid
Colour:	Whitish
· Odour:	Undistinguishable.
· pH-value (10 g/l) at 20 °C:	1.2
· Change in condition	
Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	Undetermined.
· Flash point:	Not applicable.
· Auto-ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product does not present an explosion hazard.
· Vapour pressure:	Not applicable.
· Density:	Not determined.
· Solubility in / Miscibility with water:	Soluble.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· Solvent content:	
Organic solvents:	0.0 %
Solids content:	60.0 %

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· **9.2 Other information** No further relevant information available.

* **SECTION 10: Stability and reactivity**

· **10.1 Reactivity** No further relevant information available.
· **10.2 Chemical stability**
· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
No decomposition if used and stored according to specifications.
· **10.3 Possibility of hazardous reactions** Violent reactions with strong alkalis and oxidising agents.
· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:** No further relevant information available.
· **10.6 Hazardous decomposition products:** Nitrogen oxides
Sulphur oxides (SOx)
Corrosive gases/vapours

* **SECTION 11: Toxicological information**

· **11.1 Information on toxicological effects**
· Acute toxicity Based on available data, the classification criteria are not met.

· LD/LC50 values relevant for classification:

5329-14-6 sulphamic acid		
Oral	LD50	3,160 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat) (OECD 402)
4861-19-2 urea phosphate		
Oral	LD50	5,840 mg/kg (mouse)
		>2,000 mg/kg (rat)

· Primary irritant effect:
· Skin corrosion/irritation Causes severe skin burns and eye damage.
· Serious eye damage/irritation Causes serious eye damage.
· Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
· CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
· Germ cell mutagenicity Based on available data, the classification criteria are not met.
· Carcinogenicity Based on available data, the classification criteria are not met.
· Reproductive toxicity Based on available data, the classification criteria are not met.
· STOT-single exposure Based on available data, the classification criteria are not met.
· STOT-repeated exposure Based on available data, the classification criteria are not met.
· Aspiration hazard Based on available data, the classification criteria are not met.

* **SECTION 12: Ecological information**

· **12.1 Toxicity**

· Aquatic toxicity:

5329-14-6 sulphamic acid	
EC50/24h	71.6 mg/l (daphnia magna) (OECD 202)
EC10/16h	>1,000 mg/l (pseudomonas putida)
ErC50/72h	48 mg/l (green alge) (OECD 201)
LC50/96h	70.3 mg/l (pimephales promelas)

· **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential** No further relevant information available.

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· **12.4 Mobility in soil** No further relevant information available.
· Ecotoxical effects:
· Remark: Harmful to fish
· Additional ecological information:
· General notes: Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Harmful to aquatic organisms
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
· **12.5 Results of PBT and vPvB assessment**
· PBT: Not applicable.
· vPvB: Not applicable.
· **12.6 Other adverse effects** No further relevant information available.

*
SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· Recommendation Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· European waste catalogue	
20 00 00	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS
20 01 00	separately collected fractions (except 15 01)
20 01 14*	acids

· Uncleaned packaging:
· Recommendation: Disposal must be made according to official regulations.
Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

*
SECTION 14: Transport information

· **14.1 UN-Number**
· ADR, IMDG, IATA UN2967

· **14.2 UN proper shipping name**
· ADR 2967 SULPHAMIC ACID
· IMDG, IATA SULPHAMIC ACID

· **14.3 Transport hazard class(es)**

· ADR

· Class 8 (C2) Corrosive substances.
· Label 8

· IMDG, IATA

· Class 8 Corrosive substances.
· Label 8

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· **14.4 Packing group**	
· ADR, IMDG, IATA	III
· **14.5 Environmental hazards:**	
· Marine pollutant:	No
· **14.6 Special precautions for user**	Warning: Corrosive substances.
· Danger code (Kemler):	80
· EMS Number:	F-A,S-B
· Segregation groups	Acids
· Stowage Category	A
· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	5 kg
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· Transport category	3
· Tunnel restriction code	E
· IMDG	
· Limited quantities (LQ)	5 kg
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· UN "Model Regulation":	UN 2967 SULPHAMIC ACID, 8, III

* **SECTION 15: Regulatory information**

· **15.1 Safety, health and environmental regulations/ legislation specific for the substance or mixture**	1967/548 (1999/45); 1991/689 (2001/118); 1999/13; 2004/42; 648/2004; 1907/2006 (REACH); 1272/2008; 75/324/EWG (2008/47/EG); 453/2010/EG
· Directive 2012/18/EU	
· Named dangerous substances - ANNEX I	None of the ingredients is listed.
· National regulations:	
· Information about limitation of use:	Employment restrictions concerning juveniles must be observed. Employment restrictions concerning pregnant and lactating women must be observed.
· Waterhazard class:	Water hazard class 1 (Self-assessment): slightly hazardous for water.
· **15.2 Chemical safety assessment:**	A Chemical Safety Assessment has not been carried out.

* **SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant phrases	H314 Causes severe skin burns and eye damage. H315 Causes skin irritation. H319 Causes serious eye irritation. H412 Harmful to aquatic life with long lasting effects.

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· Recommended restriction of use: refer to Technical Data Sheet (TDS)

· Department issuing SDS: Laboratory
· Contact: Dieter Zimmermann
· Abbreviations and acronyms:
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
· Sources: REACH directive 1907/2006/EC
· * Data compared to the previous version altered.: Adaptation in accordance with REACH directive 1907/2006/EC