



RAVENOL Professional Radiator Cleaner



ART.-NR. 1390302

250 ml | 1390302-250

EMPFEHLUNGEN KANN ZU EINER VERBESSERTEN KÜHLLLEISTUNG NACH REPARATUREN AM KÜHLSYSTEM FÜHREN

Reinigungsadditiv für alle Kühler

RAVENOL Professional Radiator Cleaner ist ein Kühler Reinigungsadditiv, das zur schnellen und einfachen Reinigung des Kühl- und Heizsystems eingesetzt wird.

RAVENOL Professional Radiator Cleaner löst und bindet öl- und fetthaltige Rückstände in Kühler, Heizungen und Leitungen.

RAVENOL Professional Radiator Cleaner unterwandert und beseitigt Schlamm- und Korrosionsablagerungen.

RAVENOL Professional Radiator Cleaner neutralisiert Kalkrückstände.

Anwendungshinweis

RAVENOL Professional Radiator Cleaner wird dem Kühler zugeführt. Es wird empfohlen durch Öleintritt angegriffene Gummiteile zu ersetzen.

Einsatzbereich:

- Kühlerreparaturen
- Bei verminderter Kühlleistung
- Bei Ablagerungen im Kühlkreislauf
- Kühlfülligkeitswechsel
- Zur Reinigung nach Motorreparaturen auf Grund von Öl im Kühlsystem

Anwendung: **RAVENOL Professional Radiator Cleaner** ist ausreichend bis 10 L. Kühlwasser.

Verunreinigtes Kühlmittel vor der Reinigung ablassen und Frischwasser auffüllen.

RAVENOL Professional Radiator Cleaner auffüllen und Motor auf Betriebstemperatur ca. 30 Minuten laufen lassen. Verunreinigte Mischung ablassen – bei starken Verschmutzungen gegebenenfalls Behandlung wiederholen. Kühlkreislauf mit klarem Wasser nachspülen. Nach Reinigung das Kühlsystem neu befüllen, entlüften und auf Dichtigkeit überprüfen.



Eigenschaften

RAVENOL Professional Radiator Cleaner bietet:

- Reinigung des Kühl und Heizungssystems
- Schutz der neuen Kühlflüssigkeit vor Altverschmutzung
- Beseitigung von Schlamm und Korrosionsablagerungen

Eigenschaften	Einheit	Daten	Prüfung nach
Dichte bei 20°C	kg/m ³	1003	EN ISO 12185
Farbe		farblos	visuell
pH-Wert bei 20°C		10,25	DIN 19268

Alle Angaben entsprechen nach bestem Wissen dem derzeitigen Stand der Erkenntnisse und unserer Entwicklung. Änderungen bleiben vorbehalten. Alle Bezugnahme auf DIN-Normen dienen nur der Warenbeschreibung und stellen keine Garantie dar. Bei vorliegenden Problemfällen technische Beratung anfordern.

Stand: 20. Januar 2020

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Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

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

1.1. Product identifier

Trade name/designation:

RAVENOL Professional Radiator Cleaner

Article No.:

1390302

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

Use of the substance/mixture:

Cleaning agent

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Ravensberger Schmierstoffvertrieb GmbH

Jöllenbecker Str. 2

33824 Werther

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Telephone: +49 5203 9719 0

Telefax: +49 5203 9719 48

E-mail: kontakt@ravenol.de

Website: www.ravenol.de

E-mail (competent person): kontakt@ravenol.de

1.4. Emergency telephone number

Abt. Produktsicherheit, 24h: +49 700 24 112 112 (Company ID: RAV) (outside USA/Canada) 011 49 700 24 112 112 (Company ID: RAV) (inside USA/Canada), +49 5203 9719 0 (Only available during office hours.)

SECTION 2: Hazards identification

* **2.1. Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation (<i>Skin Irrit. 2</i>)	H315: Causes skin irritation.	
Serious eye damage/eye irritation (<i>Eye Irrit. 2</i>)	H319: Causes serious eye irritation.	

* **2.2. Label elements**

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms:



GHS07

Exclamation mark

Signal word: Warning

hazard statements for health hazards	
H315	Causes skin irritation.
H319	Causes serious eye irritation.

Supplemental Hazard information (EU): -

Precautionary statements	
P102	Keep out of reach of children.



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Precautionary statements Response

P302 + P352	IF ON SKIN: Wash with plenty of water/Soap.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.

Precautionary statements Disposal

P501.2	Dispose of contents/container to an appropriate recycling or disposal facility.
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2.3. Other hazards

No data available

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Additional information:

Labelling for contents according to regulation (EC) No. 648/2004: 5-15% nonionic surfactants, <5% anionic surfactants

Hazardous ingredients / Hazardous impurities / Stabilisers:

product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CL P]	Concentration
CAS No.: 5329-14-6 EC No.: 226-218-8	sulphamidic acid Skin Irrit. 2, Eye Irrit. 2, Aquatic Chronic 3 Warning H315-H319-H412	10 - < 15 Wt %
CAS No.: 5949-29-1 EC No.: 201-069-1 REACH No.: 01-2119457026-42	Citric acid Eye Irrit. 2 H319	1 - < 5 Wt %

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:

Never give anything by mouth to an unconscious person or a person with cramps. Remove casualty to fresh air and keep warm and at rest. Remove contaminated, saturated clothing immediately. Remove persons to safety.

Following inhalation:

Provide fresh air. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Consult a doctor immediately.

In case of skin contact:

Wash with plenty of water. Take off contaminated clothing and wash it before reuse.

After eye contact:

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion:

Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Call a physician immediately.

Self-protection of the first aider:

First aider: Pay attention to self-protection!

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

Skin corrosion/irritation.
 After eye contact: Risk of serious damage to eyes.
 After ingestion: Harmful. Corrosion, Irritant.

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

Treat symptomatically. The following symptoms may occur: Cough, Nausea, Dyspnoea, Abdominal pain



SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Carbon dioxide (CO₂)
Foam
Extinguishing powder
Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media:

Full water jet

* 5.2. Special hazards arising from the substance or mixture

Non-flammable.

Hazardous combustion products:

Nitrogen oxides (NO_x), Carbon monoxide, Carbon dioxide (CO₂), Sulphur dioxide (SO₂), Ammonia (NH₃)

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

5.4. Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

* 6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

Provide adequate ventilation. Use personal protection equipment. Avoid contact with skin, eyes and clothes.

6.1.2. For emergency responders

No data available

* 6.2. Environmental precautions

Do not allow to enter into surface water or drains. Immediately inform the responsible authorities in entry into waterways or sewage system.

6.3. Methods and material for containment and cleaning up

For cleaning up:

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).
Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

SECTION 7: Handling and storage
SECTION 8: Exposure controls/personal protection
SECTION 13: Disposal considerations

6.5. Additional information

Clear spills immediately.

SECTION 7: Handling and storage

* 7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Keep container tightly closed in a cool place. Avoid contact with eyes and skin.

Fire prevent measures:

No special fire protection measures are necessary.

Measures to prevent aerosol and dust generation:

See protective measures under point 7 and 8.

Environmental precautions:

SECTION 6: Accidental release measures



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Advices on general occupational hygiene

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500. Wash hands before breaks and after work. When using do not eat, drink, smoke, sniff. Remove contaminated, saturated clothing immediately.

* 7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

Keep container tightly closed. Keep locked up and out of reach of children. Keep only in original container. Keep in a cool, well-ventilated place. Store in a place accessible by authorized persons only.

Requirements for storage rooms and vessels:

No special measures are necessary. Shafts and sewers must be protected from entry of the product. Keep only in the original container in a cool, well-ventilated place.

Hints on storage assembly:

TRGS 510

Do not store together with: Alkali (lye)

Storage class: 8B – Non-combustible corrosive substances

Further information on storage conditions:

Observe technical data sheet.

* 7.3. Specific end use(s)

Recommendation:

Observe technical data sheet.

SECTION 8: Exposure controls/personal protection

* 8.1. Control parameters

No data available

* 8.2. Exposure controls

8.2.1. Appropriate engineering controls

No data available

8.2.2. Personal protection equipment

Eye/face protection:

During transfer: Eye glasses with side protection

Skin protection:

Hand protection

Suitable material: Butyl caoutchouc (butyl rubber),

Thickness of the glove material: $\geq 0,4$ mm

Breakthrough time (maximum wearing time) >480 min

Breakthrough times and swelling properties of the material must be taken into consideration.

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

Suitable protective clothing: Protective clothing:

Respiratory protection:

Usually no personal respirative protection necessary.

8.2.3. Environmental exposure controls

See section 7. No additional measures necessary.

8.3. Additional information

No data available

SECTION 9: Physical and chemical properties

* 9.1. Information on basic physical and chemical properties

Appearance

Physical state: Liquid

Colour: not determined

Odour: not determined



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Safety relevant basis data

parameter		at °C	Method	Remark
pH	0 - 1	20 °C		
Melting point	<i>not determined</i>			
Freezing point	<i>not determined</i>			
Initial boiling point and boiling range	> 100 °C			
Decomposition temperature (°C):	<i>not determined</i>			
Flash point	<i>not determined</i>			
Evaporation rate	<i>not determined</i>			
Ignition temperature in °C	<i>not determined</i>			
Upper/lower flammability or explosive limits	<i>not determined</i>			
Vapour pressure	<i>not determined</i>			
Vapour density	<i>not determined</i>			
Relative density	1.07 kg/m ³	20 °C		
Bulk density	<i>not determined</i>			
Water solubility (g/L)	easily soluble			
Partition coefficient: n-octanol/ water	<i>not determined</i>			
Dynamic viscosity	<i>not determined</i>			
Kinematic viscosity	<i>not determined</i>	40 °C		

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

* 10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

No information available.

* 10.5. Incompatible materials

Oxidizing agent, Alkali (lye), concentrated

* 10.6. Hazardous decomposition products

Sulphur dioxide (SO₂), Nitrogen oxides (NO_x), Ammonia (NH₃)

Further information

Do not mix with other chemicals.

SECTION 11: Toxicological information

* 11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
5329-14-6	sulphamidic acid	LD₅₀ oral: 3,160 mg/kg (rat)
5949-29-1	Citric acid	LD₅₀ oral: 5,400 mg/kg (mouse) LD₅₀ dermal: >200 mg/kg (rat)

Acute oral toxicity:

No information available.

Acute dermal toxicity:

No information available.

Acute inhalation toxicity:

No information available.

Skin corrosion/irritation:

Skin corrosion/irritation: skin irritation, Corrosion



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Serious eye damage/irritation:

Causes serious eye damage.

Respiratory or skin sensitisation:

No sensitizing effects known.

Germ cell mutagenicity:

No indications of human germ cell mutagenicity exist.

Carcinogenicity:

Pamatojoties uz pieejamajiem datiem, klasifikācijas kritēriji nav izpildīti.

Reproductive toxicity:

No indications of human reproductive toxicity exist.

STOT-single exposure:

Pamatojoties uz pieejamajiem datiem, klasifikācijas kritēriji nav izpildīti.

STOT-repeated exposure:

Pamatojoties uz pieejamajiem datiem, klasifikācijas kritēriji nav izpildīti.

Aspiration hazard:

Pamatojoties uz pieejamajiem datiem, klasifikācijas kritēriji nav izpildīti.

SECTION 12: Ecological information

* **12.1. Toxicity**

CAS No.	Substance name	Toxicological information
5329-14-6	sulphamidic acid	LC ₅₀ : 70.3 mg/l 4 d
5949-29-1	Citric acid	LC ₅₀ : 440 mg/l 4 d (Leuciscus idus) ErC ₅₀ : 425 mg/l 4 d (Scenedesmus subspicatus) EC ₅₀ : 1,535 mg/l 2 d (Daphnia magna)

Additional ecotoxicological information:

The product is: Acid. Before discharge into sewage plants the product normally needs to be neutralised.

* **12.2. Persistence and degradability**

Additional information:

No information available.

* **12.3. Bioaccumulative potential**

Accumulation / Evaluation:

No information available.

* **12.4. Mobility in soil**

No information available.

* **12.5. Results of PBT and vPvB assessment**

CAS No.	Substance name	Results of PBT and vPvB assessment
5329-14-6	sulphamidic acid	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
5949-29-1	Citric acid	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product:

Remark:

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.



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Waste treatment options

Appropriate disposal / Product:

Dispose of waste according to applicable legislation.

Appropriate disposal / Package:

Dispose of waste according to applicable legislation.

* **13.2. Additional information**

The product is: Acid. Before discharge into sewage plants the product normally needs to be neutralised.

SECTION 14: Transport information

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
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* **14.1. UN-No.**

UN 2967	UN 2967	UN 2967	UN 2967
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* **14.2. UN proper shipping name**

SULPHAMIC ACID, mixture	SULPHAMIC ACID, mixture	SULPHAMIC ACID, mixture	SULPHAMIC ACID, mixture
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* **14.3. Transport hazard class(es)**

 8	 8	 8	 8
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* **14.4. Packing group**

III	III	III	III
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* **14.5. Environmental hazards**

No	No	No	No
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14.6. Special precautions for user

Special provisions: Limited quantity (LQ): 5 L Hazard identification number (Kemler No.): Classification code: C1 tunnel restriction code: (E) Remark:	Special provisions: Limited quantity (LQ): 5 L Classification code: C1 Remark:	Special provisions: Limited quantity (LQ): 5 L EmS-No.: F-A, S-B Remark: IMDG-Code segregation group 1 - Acids	Special provisions: Limited quantity (LQ): Remark:
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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. Safety, health and environmental regulations/legislation specific for the substance or mixture**

15.1.1. EU legislation

No data available

15.1.2. National regulations

 **[DE] National regulations**

Restrictions of occupation

Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers. Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).



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Water hazard class (WGK)

WGK:

1 - schwach wassergefährdend

Source:

Self-classification (mixture; calculation rule).

Technische Regeln für Gefahrstoffe

Minimum protective measures according to TRGS 500

Berufsgenossenschaftliche Vorschriften (BGV)

To follow: Berufsgenossenschaftliche Regeln (BGR) 190, 192, 195

15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

15.3. Additional information

No data available

SECTION 16: Other information

* **16.1. Indication of changes**

2.1.	Classification of the substance or mixture
2.2.	Label elements
3.2.	Mixtures
4.1.	Description of first aid measures
4.2.	Most important symptoms and effects, both acute and delayed
4.3.	Indication of any immediate medical attention and special treatment needed
5.2.	Special hazards arising from the substance or mixture
6.1.	Personal precautions, protective equipment and emergency procedures
6.2.	Environmental precautions
7.1.	Precautions for safe handling
7.2.	Conditions for safe storage, including any incompatibilities
7.3.	Specific end use(s)
8.1.	Control parameters
8.2.	Exposure controls
9.1.	Information on basic physical and chemical properties
10.3.	Possibility of hazardous reactions
10.5.	Incompatible materials
10.6.	Hazardous decomposition products
11.1.	Information on toxicological effects
12.1.	Toxicity
12.2.	Persistence and degradability
12.3.	Bioaccumulative potential
12.4.	Mobility in soil
12.5.	Results of PBT and vPvB assessment
13.2.	Additional information
14.1.	UN number
14.2.	UN proper shipping name
14.3.	Transport hazard class(es)
14.4.	Packing group
14.5.	Environmental hazards
15.1.	Safety, health and environmental regulations/legislation specific for the substance or mixture
16.1.	Indication of changes

16.2. Abbreviations and acronyms

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

See overview table at www.euphrac.eu



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16.3. Key literature references and sources for data

67/548/EEC - Dangerous Substances Directive
 1999/45/EEC - Dangerous Preparations Directive
 EC 1907/2006 - REACH Regulation
 1272/2008 EC - Regulation on classification, labeling and packaging of substances and mixtures, and amending Directives 67/548/EEC and 1999/45/EC and Regulation (EC) No 1907/2006
 Regulation (EC) No 1907/2006 (REACH), Annex II
 European Chemicals Agency (ECHA), C & L classification and labeling inventory
 European Chemicals Agency (ECHA), ECHA CHEM Registered substances
 OECD The Global Portal to Information on Chemical Substances (ChemPortal)
 Institute for Occupational Safety and Health of the German Social Accident Insurance (IFA): GESTIS substance database and International limit values for chemical substances
 Federal Environment Agency, Section IV 2.4: Documentation and Information Centre substances hazardous to water Rigoletto (catalog substances hazardous to water)

16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation (<i>Skin Irrit. 2</i>)	H315: Causes skin irritation.	
Serious eye damage/eye irritation (<i>Eye Irrit. 2</i>)	H319: Causes serious eye irritation.	

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H412	Harmful to aquatic life with long lasting effects.

16.6. Training advice

No data available

16.7. Additional information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

* Data changed compared with the previous version