



Restore Radiator Flush

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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

1.1. Product identifier

Product name : Restore Radiator Flush

Product code : S11464

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Cleaning of cooling systems from combustion engines.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Groupe Restore - Biral N.V.

Rue de l'Echauffourée 1

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T +32 (0)56 33 38 40 - F +32 (0)56 33 38 07

biral.lubricants@laposte.net - www.biral-lubricants.be

1.4. Emergency telephone number

Emergency number : BIG: 0032 (0)14 58 45 45

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Skin Irrit. 2 H315

Eye Irrit. 2 H319

Full text of hazard classes and H-statements : see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS07

Signal word (CLP) : Warning

Hazard statements (CLP) : H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary statements (CLP) : P102 - Keep out of reach of children
P280 - Wear eye protection, protective gloves
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing
P337+P313 - If eye irritation persists: Get medical advice/attention

Detergent Regulation : Labelling of contents: (Regulation (EC) No. 648/2004 of 31 March 2004 on detergents):

Component	%
NTA (nitrilotriacetic acid) and salts thereof, non-ionic surfactants	<5%

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

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3.2. Mixture

Name	Product identifier	% w	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Nitrilotriacetic acid trisodium salt monohydrate	(CAS No) 18662-53-8 (EC No) 225-768-6 (EC Index No) 607-620-00-6 (REACH-no) 01-2119519239-36	2,5 - 5	Carc. 2, H351 Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319
alcohols, C11-14-iso, C13-rich, ethoxylated	(CAS No) 78330-21-9 (EC No) 616-609-5	1 - 2,5	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318
sodium acrylate	(CAS No) 9003-04-7	1 - 2,5	Eye Irrit. 2, H319
Sodium hydroxide	(CAS No) 1310-73-2 (EC No) 215-185-5 (EC Index No) 011-002-00-6 (REACH-no) 01-2119457892-27	0,1 - 1	Met. Corr. 1, H290 Skin Corr. 1A, H314

Name	Product identifier	Specific concentration limits
Nitrilotriacetic acid trisodium salt monohydrate	(CAS No) 18662-53-8 (EC No) 225-768-6 (EC Index No) 607-620-00-6 (REACH-no) 01-2119519239-36	(C >= 5) Carc. 2, H351
Sodium hydroxide	(CAS No) 1310-73-2 (EC No) 215-185-5 (EC Index No) 011-002-00-6 (REACH-no) 01-2119457892-27	(0,5 =<C < 2) Skin Irrit. 2, H315 (0,5 =<C < 2) Eye Irrit. 2, H319 (2 =<C < 5) Skin Corr. 1B, H314 (C >= 5) Skin Corr. 1A, H314

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Check the vital functions. Keep victim at rest in half upright position. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Keep watching the victim. Give psychological aid. Prevent cooling by covering the victim (no warming up). Keep the victim calm, avoid physical strain. If necessary seek medical advice.
First-aid measures after inhalation	: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
First-aid measures after skin contact	: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Drink plenty of water. Call a POISON CENTER or doctor/physician if you feel unwell. Ingestion of large quantities: immediately to hospital.

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

No additional information available

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: All extinguishing agents can be used.
Unsuitable extinguishing media	: None to our knowledge. If there is a fire close by, use suitable extinguishing agents.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: No fire hazard.
Explosion hazard	: Product is not explosive.

5.3. Advice for firefighters

Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Wear suitable gloves and eye/face protection.
- Emergency procedures : Mark the danger area. Prevent flow to low areas. Take off contaminated clothing and wash before reuse.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- For containment : Collect spillage. Contain leaking substance, pump over in suitable containers.
- Methods for cleaning up : Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Clean contaminated surfaces with an excess of water.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Meet the legal requirements. Presents no particular risk when handled in accordance with good occupational hygiene practice.
- Hygiene measures : Use good personal hygiene practices. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Does not require any specific or particular technical measures.
- Storage conditions : Meet the legal requirements. Store in a closed container. Keep out of frost.
- Storage area : Meet the legal requirements.
- Special rules on packaging : correctly labelled. Keep only in original container.

7.3. Specific end use(s)

See product bulletin for detailed information.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Sodium hydroxide (1310-73-2)

Belgium	Limit value (mg/m ³)	2 mg/m ³
Belgium	Remark (BE)	M

reaction mass of (2S)- and (2R)-Alanine,N,N-bis(carboxymethyl)-, trisodium salt (164462-16-2)

DNEL/DMEL (Workers)

Acute - systemic effects, dermal	2000 mg/kg bodyweight/day
Acute - systemic effects, inhalation	40 mg/m ³
Acute - local effects, dermal	2000 mg/cm ²
Acute - local effects, inhalation	40 mg/m ³
Long-term - systemic effects, dermal	170 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	40 mg/m ³
Long-term - local effects, inhalation	4 mg/m ³

DNEL/DMEL (General population)

Acute - systemic effects, dermal	400 mg/kg bodyweight
Acute - systemic effects, inhalation	20 mg/m ³
Acute - systemic effects, oral	85 mg/kg bodyweight
Acute - local effects, dermal	400 mg/cm ²
Acute - local effects, inhalation	20 mg/m ³
Long-term - systemic effects, oral	17 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	20 mg/m ³
Long-term - systemic effects, dermal	25 mg/kg bodyweight/day

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reaction mass of (2S)- and (2R)-Alanine,N,N-bis(carboxymethyl)-, trisodium salt (164462-16-2)

Long-term - local effects, inhalation	2 mg/m ³
PNEC (Water)	
PNEC aqua (freshwater)	2 mg/l
PNEC aqua (marine water)	0,2 mg/l
PNEC aqua (intermittent, freshwater)	1 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	24 mg/kg dwt
PNEC (Soil)	
PNEC soil	2,5 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	100 mg/l

sodium 4(or 5)-methyl-1H-benzotriazolide (64665-57-2)

DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	0,5 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	8,8 mg/m ³
DNEL/DMEL (General population)	
Acute - systemic effects, oral	0,54 mg/kg bodyweight
Long-term - systemic effects,oral	0,25 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	4,4 mg/m ³
Long-term - systemic effects, dermal	0,25 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0,008 mg/l
PNEC aqua (marine water)	0,008 mg/l
PNEC aqua (intermittent, freshwater)	0,086 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0,0025 mg/kg dwt
PNEC sediment (marine water)	0,0025 mg/kg dwt
PNEC (Soil)	
PNEC soil	0,0024 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	39,4 mg/l

Sodium hydroxide (1310-73-2)

DNEL/DMEL (Workers)	
Long-term - local effects, inhalation	1 mg/m ³
DNEL/DMEL (General population)	
Long-term - local effects, inhalation	1 mg/m ³

Silicic acid, sodium salt (1344-09-8)

DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	1,59 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	5,61 mg/m ³
DNEL/DMEL (General population)	
Long-term - systemic effects,oral	0,8 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	1,38 mg/m ³
Long-term - systemic effects, dermal	0,8 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	7,5 mg/l
PNEC aqua (marine water)	1 mg/l
PNEC aqua (intermittent, freshwater)	7,5 mg/l
PNEC (STP)	
PNEC sewage treatment plant	348 mg/l

8.2. Exposure controls

Appropriate engineering controls

: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Does not require any specific or particular technical measures.

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Personal protective equipment : Gloves. Safety glasses.



Hand protection : Neoprene. Nitrile rubber. Polyvinylchloride (PVC) . 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. Time of penetration is to be checked with the glove producer.

Other information : Breakthrough time : >30'. Thickness of the glove material >0.1 mm.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: light green.
Odour	: No data available
Odour threshold	: No data available
pH	: 12,23
Relative evaporation rate (butylacetate=1)	: No data available
refraction index	: 1,356
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density @20°C	: 1067 kg/m ³
Solubility	: Soluble in water.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic @40°C	: No data available
Viscosity, dynamic @40°C	: No data available
Viscosity	:
Viscosity Index	:
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

VOC content	: 0 %
Additional information	: The physical and chemical data in this section are typical values for this product and are not intended as product specifications.

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

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10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

alcohols,C11-14-iso, C13-rich, ethoxylated (78330-21-9)

LD50 oral rat 500 - 1999 mg/kg bodyweight

ATE CLP (oral) 500,000 mg/kg bodyweight

Skin corrosion/irritation : The mixture need not be classified as corrosive in spite of the extreme pH
Causes skin irritation
pH: 12,23

Serious eye damage/irritation : Causes serious eye irritation.
pH: 12,23

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : This product contains hazardous components for the aquatic environment. The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Nitilotriacetic acid trisodium salt monohydrate (18662-53-8)

Threshold limit other aquatic organisms 1 800 mg/l (24 h; Daphnia magna; ANHYDROUS FORM)

alcohols,C11-14-iso, C13-rich, ethoxylated (78330-21-9)

LC50 fish 1 96h 10 - 100 mg/l

EC50 Daphnia 1 48h 10 - 100 mg/l

ErC50 (algae) 72h 10 - 100 mg/l

Sodium hydroxide (1310-73-2)

EC50 Daphnia 1 48h 40,4 mg/l Ceriodaphnia sp.

12.2. Persistence and degradability

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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.

Nitilotriacetic acid trisodium salt monohydrate (18662-53-8)

Persistence and degradability Readily biodegradable in water. Biodegradable in the soil.

alcohols,C11-14-iso, C13-rich, ethoxylated (78330-21-9)

Persistence and degradability Readily biodegradable.

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sodium acrylate (9003-04-7)

Persistence and degradability Not readily biodegradable in water.

12.3. Bioaccumulative potential

Nitrilotriacetic acid trisodium salt monohydrate (18662-53-8)

Bioaccumulative potential Bioaccumulation: not applicable.

sodium acrylate (9003-04-7)

Bioaccumulative potential Low potential for bioaccumulation (molecular mass ≥ 700 g/mol).

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Remove to an authorized waste treatment plant. Avoid release to the environment.
European List of Waste (LoW) code : 20 01 29* - detergents containing dangerous substances
15 01 10* - packaging containing residues of or contaminated by dangerous substances

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Not applicable

14.3. Transport hazard class(es)

Not applicable

14.4. Packing group

Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

14.6.1. Overland transport

No additional information available

14.6.2. Transport by sea

No additional information available

14.6.3. Air transport

No additional information available

14.7. Transport in bulk according to Annex II of MARPOL 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-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

VOC content : 0 %

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15.1.2. National regulations

Water hazard class (WGK) : 2 - hazard to waters

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Full text of H- and EUH-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Carc. 2	Carcinogenicity, Category 2
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Met. Corr. 1	Corrosive to metals, Category 1
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
Skin Irrit. 2	Skin corrosion/irritation, Category 2
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
H319	Causes serious eye irritation
H351	Suspected of causing cancer

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 not therefore be construed as guaranteeing any specific property of the product