

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

1.1. Product identifier

Product form : Mixture
Trade name : VIRAFAL® sludge remover for radiators
Product code : 295055

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

1.2.1. Relevant identified uses

Intended for general public
Main use category : Professional use
Use of the substance/mixture : DEGREASER
Use of the substance/mixture : Degreasing cleaning product

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

VIRAX SAS
39, quai Marne - CS 40197
FR- 51206 EPERNAY Cedex
T +33 (0)3 26 59 56 56 - F +33 (0)3 26 59 56 60
hse@virax.com

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Edinburgh Centre) Royal Infirmary of Edinburgh	Little France Crescent EH16 4SA	0344 892 0111	Only for healthcare professionals

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Skin corrosion/irritation, Category 1 H314
Serious eye damage/eye irritation, Category 1 H318
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation H335

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

May cause respiratory irritation. Causes severe skin burns and eye damage. Causes serious eye damage.

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS05

GHS07

Signal word (CLP) : Danger
Contains : citric acid
Hazard statements (CLP) : H314 - Causes severe skin burns and eye damage.
H335 - May cause respiratory irritation.

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Precautionary statements (CLP)	: P101 - If medical advice is needed, have product container or label at hand. P102 - Keep out of reach of children. P261 - Avoid breathing vapours, mist, spray. P264 - Wash hands thoroughly after handling. P280 - Wear protective gloves. 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 skin 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. P405 - Store locked up. P501 - Dispose of contents and container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
Child-resistant fastening	: Applicable
Tactile warning	: Applicable

2.3. Other hazards

PBT: not yet assessed

vPvB: not yet assessed

Contains no PBT/vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

Component	
citric acid (77-92-9)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
citric acid	CAS-No.: 77-92-9 EC-No.: 201-069-1 EC Index-No.: 607-750-00-3 REACH-no: 01-2119457026-42	$\geq 25 - < 50$	Eye Irrit. 2, H319 STOT SE 3, H335

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If medical advice is needed, have product container or label at hand.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
First-aid measures after skin contact	: Immediately call a POISON CENTER/doctor. Rinse skin with water/shower. Take off immediately all contaminated clothing.

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First-aid measures after eye contact : Immediately call a POISON CENTER/doctor. Rinse cautiously with water for several minutes. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

First-aid measures after ingestion : Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. Rinse mouth.

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

Symptoms/effects after inhalation : May cause respiratory irritation.

Symptoms/effects after skin contact : Burns.

Symptoms/effects after eye contact : Causes serious eye damage.

Symptoms/effects after ingestion : Burns.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Sand. Water spray. Dry powder. Foam. Carbon dioxide.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Carbon monoxide. Nitrogen oxides.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Do not breathe gas/vapour. Do not attempt to take action without suitable protective equipment. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate unnecessary personnel. Evacuate area.

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. Do not breathe vapours, mist, spray.

6.1.2. For emergency responders

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

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

See Section 8. Exposure controls and personal protection. For further information refer to section 13.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes. Do not breathe gas, vapours, spray, mist. Wear personal protective equipment.
- Hygiene measures : Wash contaminated clothing before reuse. 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

- Technical measures : Comply with applicable regulations.
- Storage conditions : Store in a well-ventilated place. Keep cool. Store in original container. Keep container closed when not in use.
- Incompatible products : Strong bases. Strong acids.
- Incompatible materials : Sources of ignition. Direct sunlight.
- Information on mixed storage : Keep away from food, drink and animal feedingstuffs.

7.3. Specific end use(s)

See Section 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

citric acid (77-92-9)	
PNEC (Water)	
PNEC aqua (freshwater)	0,44 mg/l
PNEC aqua (marine water)	0,044 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	34,6 mg/kg dwt
PNEC sediment (marine water)	3,46 mg/kg dwt
PNEC (Soil)	
PNEC soil	33,1 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	1000 mg/l

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

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8.2.2. Personal protection equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Chemical goggles or safety glasses. Safety glasses (EN 166)

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

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. Protective gloves. Nitrile rubber gloves

Hand protection					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Protective gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0.11		

Other skin protection

Materials for protective clothing:

Wear suitable protective clothing

8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

Other information:

Keep away from food, drink and animal feedingstuffs. Always wash hands after handling the product. Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: clear.
Odour	: characteristic.
Odour threshold	: Not available
Melting point	: Not applicable
Freezing point	: Not available
Boiling point	: > 100 °C No data available
Flammability	: Non flammable.
Explosive properties	: Product is not explosive.
Oxidising properties	: No data available.
Explosive limits	: Not available
Lower explosion limit	: Not available

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Upper explosion limit	: Not available
Flash point	: No data available
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
pH	: 1 – 2 at 20 °C
Viscosity, kinematic	: Not available
Viscosity, dynamic	: No data available
Solubility	: Water: Soluble in water
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Density	: 1,13 – 1,17 g/cm ³ at 20 °C
Relative density	: Not available
Relative vapour density at 20°C	: Not available
Particle characteristics	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Strong alkalis.

10.6. Hazardous decomposition products

No hazardous decomposition products known at room temperature.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral)	: Not classified (Based on available data, the classification criteria are not met)
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)

citric acid (77-92-9)	
LD50 oral rat	3000 mg/kg
LD50 oral	5400 mg/kg bodyweight (OECD 401 method)
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402 method)

Skin corrosion/irritation	: Causes severe skin burns. pH: 1 – 2 at 20 °C
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Serious eye damage/irritation	: Causes serious eye damage. pH: 1 – 2 at 20 °C
Respiratory or skin sensitisation	: Not classified (Based on available data, the classification criteria are not met)
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)
STOT-single exposure	: May cause respiratory irritation.

citric acid (77-92-9)

STOT-single exposure	May cause respiratory irritation.
STOT-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 bodyweight
NOAEL (oral, rat, 90 days)	4000 mg/kg bodyweight

Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)
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11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

No additional information available

11.2.2. Other information

Potential adverse human health effects and symptoms	: Based on available data, the classification criteria are not met
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SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. Before neutralisation, the product may represent a danger to aquatic organisms.
Hazardous to the aquatic environment, short-term (acute)	: Not classified (Based on available data, the classification criteria are not met)
Hazardous to the aquatic environment, long-term (chronic)	: Not classified (Based on available data, the classification criteria are not met)

citric acid (77-92-9)

LC50 - Fish [1]	440 – 760 mg/l
EC50 - Crustacea [1]	120 mg/l Daphnia magna (Water flea)
ErC50 algae	425 mg/l

12.2. Persistence and degradability

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Persistence and degradability	Not established.
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12.3. Bioaccumulative potential

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Bioaccumulative potential	Not established.
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12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

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PBT: not yet assessed	
vPvB: not yet assessed	
Component	
citric acid (77-92-9)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

Additional information : Avoid release to the environment.






SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Dispose of this material and its container at hazardous or special waste collection point.
Ecology - waste materials	: Avoid release to the environment.
European List of Waste (LoW) code	: Code Waste to be completed according to the use and the list of Decision 2000/352 / EC
HP Code	: HP8 - "Corrosive:" waste which on application can cause skin corrosion.

SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 1760	UN 1760	UN 1760	UN 1760	UN 1760
14.2. UN proper shipping name				
CORROSIVE LIQUID, N.O.S. (citric-acid)	CORROSIVE LIQUID, N.O.S. (citric-acid)	Corrosive liquid, n.o.s. (citric-acid)	CORROSIVE LIQUID, N.O.S. (citric-acid)	CORROSIVE LIQUID, N.O.S. (citric-acid)
Transport document description				
UN 1760 CORROSIVE LIQUID, N.O.S. (citric-acid), 8, III, (E)	UN 1760 CORROSIVE LIQUID, N.O.S. (citric-acid), 8, III	UN 1760 Corrosive liquid, n.o.s. (citric-acid), 8, III	UN 1760 CORROSIVE LIQUID, N.O.S. (citric-acid), 8, III	UN 1760 CORROSIVE LIQUID, N.O.S. (citric-acid), 8, III
14.3. Transport hazard class(es)				
8	8	8	8	8
				

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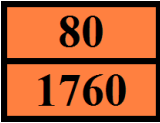
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ADR	IMDG	IATA	ADN	RID
14.4. Packing group				
III	III	III	III	III
14.5. Environmental hazards				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary information available				

14.6. Special precautions for user

Overland transport

Classification code (ADR)	: C9
Special provisions (ADR)	: 274
Limited quantities (ADR)	: 5I
Excepted quantities (ADR)	: E1
Packing instructions (ADR)	: P001, IBC03, LP01, R001
Mixed packing provisions (ADR)	: MP19
Portable tank and bulk container instructions (ADR)	: T7
Portable tank and bulk container special provisions (ADR)	: TP1, TP28
Tank code (ADR)	: L4BN
Vehicle for tank carriage	: AT
Transport category (ADR)	: 3
Special provisions for carriage - Packages (ADR)	: V12
Hazard identification number (Kemler No.)	: 80
Orange plates	: 
Tunnel restriction code (ADR)	: E
EAC code	: 2X

Transport by sea

Special provisions (IMDG)	: 223, 274
Limited quantities (IMDG)	: 5 L
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: P001, LP01
IBC packing instructions (IMDG)	: IBC03
Tank instructions (IMDG)	: T7
Tank special provisions (IMDG)	: TP1, TP28
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-B
Stowage category (IMDG)	: A
Stowage and handling (IMDG)	: SW2
Properties and observations (IMDG)	: Causes burns to skin, eyes and mucous membranes.

Air transport

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y841
PCA limited quantity max net quantity (IATA)	: 1L
PCA packing instructions (IATA)	: 852
PCA max net quantity (IATA)	: 5L
CAO packing instructions (IATA)	: 856
CAO max net quantity (IATA)	: 60L
Special provisions (IATA)	: A3, A803
ERG code (IATA)	: 8L

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Inland waterway transport

Classification code (ADN)	: C9
Special provisions (ADN)	: 274
Limited quantities (ADN)	: 5 L
Excepted quantities (ADN)	: E1
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP, EP
Number of blue cones/lights (ADN)	: 0

Rail transport

Classification code (RID)	: C9
Special provisions (RID)	: 274
Limited quantities (RID)	: 5L
Excepted quantities (RID)	: E1
Packing instructions (RID)	: P001, IBC03, LP01, R001
Mixed packing provisions (RID)	: MP19
Portable tank and bulk container instructions (RID)	: T7
Portable tank and bulk container special provisions (RID)	: TP1, TP28
Tank codes for RID tanks (RID)	: L4BN
Transport category (RID)	: 3
Special provisions for carriage – Packages (RID)	: W12
Colis express (express parcels) (RID)	: CE8
Hazard identification number (RID)	: 80

14.7. Maritime transport in bulk according to IMO instruments

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

REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Seveso Directive (Disaster Risk Reduction)

Seveso Additional information : Not relevant

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

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Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

Ensure all national/local regulations are observed

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes			
Section	Changed item	Change	Comments
	Substance(s) listed on the REACH Candidate List	Added	
1.1	Trade name	Modified	
1.1	Name	Added	
1.2	Intended for general public	Added	
1.2	Use of the substance/mixture	Added	
1.2	Use of the substance/mixture	Added	
2.1	Adverse physicochemical, human health and environmental effects	Modified	
2.1	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Modified	
2.1	Intended for general public	Added	
2.2	Precautionary statements (CLP)	Added	
2.2	Signal word (CLP)	Added	
2.2	Hazard pictograms (CLP)	Added	
2.2	Hazard statements (CLP)	Added	
3	Composition/information on ingredients	Modified	
4.1	First-aid measures after ingestion	Modified	
4.1	First-aid measures general	Modified	
4.1	First-aid measures after skin contact	Modified	
4.1	First-aid measures after eye contact	Modified	
4.2	Symptoms/effects after skin contact	Added	
4.2	Symptoms/effects after ingestion	Added	
4.2	Symptoms/effects after inhalation	Added	
5.2	Hazardous decomposition products in case of fire	Modified	
5.3	EAC code	Added	
5.3	Protection during firefighting	Modified	
6.1	General measures	Added	
6.1	Emergency procedures	Modified	

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Indication of changes			
Section	Changed item	Change	Comments
7.1	Precautions for safe handling	Modified	
7.1	Hygiene measures	Modified	
7.2	Prohibitions on mixed storage	Added	
7.2	Storage conditions	Modified	
7.3	Specific end uses	Added	
8.2	Hand protection	Modified	
8.2	Eye protection	Modified	
8.2	Other information	Modified	
9.1	Flammability (solid, gas)	Modified	
9.1	Boiling point	Modified	
9.1	pH	Modified	
9.1	Colour	Modified	
10.1	Reactivity	Modified	
10.2	Chemical stability	Modified	
10.3	Possibility of hazardous reactions	Modified	
10.4	Conditions to avoid	Modified	
10.5	Incompatible materials	Modified	
10.6	Hazardous decomposition products	Modified	
11.1	Reason for no classification	Added	
12.1	Reason for no classification	Added	
12.1	Ecology - general	Modified	
13.1	H code	Modified	
13.1	Regional legislation (waste)	Added	
13.1	European List of Waste (LoW) code	Added	
14.1	UN-No. (ADR)	Added	
14.1	UN-No. (ADN)	Added	
14.1	UN-No. (RID)	Added	
14.1	UN-No. (IMDG)	Added	
14.1	UN-No. (IATA)	Added	
14.2	Proper Shipping Name (ADN)	Added	
14.2	Proper Shipping Name (RID)	Added	
14.2	Proper Shipping Name (ADR)	Added	
14.3	Danger labels (RID)	Added	
14.3	Danger labels (ADR)	Added	
14.3	Class (ADR)	Added	
14.4	Packing group (ADN)	Added	
14.4	Packing group (IATA)	Added	
14.4	Packing group (IMDG)	Added	

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Indication of changes			
Section	Changed item	Change	Comments
14.4	Packing group (ADR)	Added	
14.6	Special provisions (ADN)	Added	
14.6	Packing instructions (IMDG)	Added	
14.6	Transport category (ADR)	Added	
14.6	Special provisions (ADR)	Added	
14.6	Excepted quantities (ADR)	Added	
14.6	Limited quantities (ADR)	Added	
14.6	Tunnel restriction code (ADR)	Added	
14.6	Hazard identification number (Kemler No.)	Added	
14.6	Classification code (ADR)	Added	
15.1	Seveso Additional information	Added	
16	Data sources	Modified	
16	Abbreviations and acronyms	Modified	

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
IARC	International Agency for Research on Cancer
LC50	Median lethal concentration
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
DPD	Dangerous Preparations Directive 1999/45/EC
DSD	Dangerous Substances Directive 67/548/EEC
EC50	Median effective concentration
SDS	Safety Data Sheet
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
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
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration

VIRAFAL® sludge remover for radiators

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Abbreviations and acronyms:	
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
STP	Sewage treatment plant
TLM	Median Tolerance Limit
vPvB	Very Persistent and Very Bioaccumulative
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
EC-No.	European Community number
EN	European Standard
OEL	Occupational Exposure Limit
ThOD	Theoretical oxygen demand (ThOD)
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
ED	Endocrine disrupting properties
IOELV	Indicative Occupational Exposure Limit Value
WGK	Water Hazard Class
TRGS	Technical Rules for Hazardous Substances

Data sources	: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 . 18 ATP Inserted / Updated. ECHA (European Chemicals Agency). Supplier's safety documents.
Training advice	: Normal use of this product shall imply use in accordance with the instructions on the packaging.
Other information	: Ensure all national/local regulations are observed. DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

Full text of H- and EUH-statements:	
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
Skin Corr. 1	Skin corrosion/irritation, Category 1

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Full text of H- and EUH-statements:

STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation
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Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Skin Corr. 1	H314	Expert judgement
Eye Dam. 1	H318	Expert judgement
STOT SE 3	H335	Calculation method

Safety Data Sheet (SDS), EU

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.