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Safety Summary - Revised 18/10/2019

SUPER DILAC VA4

1. HAZARDS FOR HUMANS AND THE ENVIRONMENT.

Contains nitric acid (Nitric Acid), phosphoric acid (Phosphoric Acid)

Signal word: Danger.
Hazard statements: H314 - Causes severe skin burns and eye damage.
H290 - May be corrosive to metals.

2. PREVENTION AND CONDUCT.

The following information applies for the uses indicated in subsection 1.2 of the Safety Data Sheet. If available, please refer to the product information sheet for application and handling instructions. Normal use conditions are assumed for this section.

Recommended Safety Measures For Handling The Undiluted Product:

Covering activities such as filling and transfer of product to application equipment, flasks or buckets.

Appropriate engineering controls: If the product is diluted by using specific dosing systems with no risk of splashes or direct skin contact, the personal protection equipment as described in this section is not required.
Appropriate organisational controls: Avoid direct contact and/or splashes where possible. Train personnel.

Personal protective equipment

Eye / face protection: Safety glasses or goggles (EN166). The use of a full-face shield or other full-face protection is strongly recommended when handling open containers or if splashes may occur.
Hand protection: Chemical-resistant protective gloves (EN 374). Consider specific local use conditions, such as risk of splashes, cuts, contact time and temperature.
Body protection: Wear chemical-resistant clothing and boots in case direct dermal exposure and/or splashes may occur. (EN14605).
Respiratory protection: No special requirements under normal use conditions.
Environmental Exposure Controls: Should not reach sewage water or drainage ditch undiluted or unneutralised.

Recommended Safety Measures For Handling The Diluted Product:

Recommended maximum concentration (%): 13
Appropriate engineering controls: No special requirements under normal use conditions.
Appropriate organisational controls: Avoid direct contact and/or splashes where possible. Train personnel.

Personal protective equipment

Eye / face protection: Safety glasses or goggles (EN166).
Hand protection: Chemical resistant protective gloves (EN374). Consider specific local use conditions, such as risk of splashes, cuts, contact time and temperature.
Body protection: No special requirements under normal use conditions.
Respiratory Protection: If the product is applied in a closed system, as recommended, no respiratory protection equipment will be required.
Environmental exposure controls: No special requirements under normal use conditions.

3. EMERGENCY PROCEDURES.

Suitable extinguishing media: Carbon dioxide. Dry powder. Water spray jet. Fight larger fires with water spray jet or alcohol-resistant foam.
Environmental precautions: Do not allow to enter drainage system, surface or ground water. Dilute with plenty of water.
Methods for cleaning up: Dyke to collect large liquid spills. Use neutralising agent. Absorb onto dry sand or similar inert material. Do not place spilled material back into the original container. Collect in closed and suitable containers for disposal

4. FIRST AID MEASURES.

Inhalation: Get medical attention if you feel unwell.
Skin contact: Wash skin with plenty of lukewarm, gently flowing water for at least 30 minutes. Take off immediately all contaminated clothing and wash it before re-use. Immediately call a POISON CENTRE, doctor or physician.
Eye contact: Hold eyelids apart and flush eyes with plenty of lukewarm water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE, doctor or physician.
Ingestion: Rinse mouth. Immediately drink 1 glass of water. Do NOT induce vomiting. Keep at rest. Immediately call a POISON CENTRE, doctor or physician.

Always check the product labels and consult the Safety Data Sheet for details. The information in this document is based on our best present knowledge. However, it does not constitute a guarantee for any specific product features and does not establish a legally binding contract.

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Product Information Sheet

SUPER DILAC VA4

Description:
Super Dilac is a low foaming, high active, non-fuming nitric/phosphoric acid detergent descaler for use in a wide range of CIP applications in the Food and Beverage industry.

Key properties:
Super Dilac is highly effective at removing inorganic scale deposits, including calcium oxalate (beerstone).
Super Dilac is low foaming and suitable for use in CIP applications under conditions of high pressure and turbulence.
Super Dilac is highly economical at in use concentrations.
Super Dilac is a conductive liquid detergent and suitable for automatic dosing and control.

Benefits:
Highly effective in removing most inorganic scale deposits, improving operational efficiency.
Can be used for the passivation of new stainless steel CIP and Bottlewashing installations.
Suitable for automatic dosing and control by conductivity, ensuring consistent delivery of product.

Use instructions:
Super Dilac is typically used for descaling at concentrations between 2.5 - 13%w/w (2-10%v/v) at temperatures between 20-60°C.
Super Dilac is typically used for CIP applications at concentrations between 1.0-2.5%w/w (0.8-2%v/v) for descaling, depending upon the application and level of scale.
NB: The exact concentration, time and temperature when using **Super Dilac** will depend upon the application. All detergents and disinfectants should be thoroughly rinsed after use to remove them from all food and beverage contact surfaces.

Technical data:

Appearance:	clear, colourless liquid
Relative density at 20°C:	1.28
pH (1% solution at 20°C):	1
Chemical Oxygen Demand (COD):	none
Nitrogen Content (N):	85 g/Kg
Phosphorous Content (P):	21 g/Kg

Super Dilac (%w/w)	Specific conductivity at 25°C (mS/cm)
0.5	12.8
1	25.1
2	46
3	66
4	85

The above data is typical of normal production and should not be taken as a specification.

Safe handling and storage Information:
Store in original closed containers or (where applicable) in an approved bulk tank, away from extreme temperatures. Full guidance on the handling and disposal of this product is provided in a separate Material Safety Data Sheet.

Product compatibility:
Super Dilac is safe to use on all type of materials commonly found in CIP circuits when applied under the recommended conditions. In the event of uncertainty it is advisable to evaluate individual materials before any prolonged use.

Test method:
Reagents: 0.1N Sodium hydroxide solution Phenolphthalein Indicator
Procedure: Add 2-3 drops of the Indicator solution to 10mls of the test solution.
Titrate with the caustic to a red end point.

Calculation:
%w/w Super Dilac = titre (mls) x 0.14%v/v Super Dilac = titre (mls) x 0.11

Available pack sizes:
20L

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SAFETY DATA SHEET
according to 1907/2006/EC

SUPER DILAC VA4

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product Name: Super Dilac VA4
Product Code: MSDS1994
Supplier: Hugh Crane (Cleaning Equipment) Ltd
South Walsham Rd, Acle
Norwich, NR13 3ES
Telephone: 01493 750072 Fax 01493 751854
Emergency telephone number: 0800 052 0185 For medical or environmental emergency only:

Relevant identified uses of the substance or mixture and uses advised against
Identified uses: For industrial use only.
AISE-P801 - Food process cleaner. Cleaning In place (CIP) process
Uses advised against: Uses other than those identified are not recommended

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
Skin Corr. 1A (H314)
Eye Dam 1 (H318)
Met Corr (H290)

Label elements

Signal word: Danger
Contains nitric acid (Nitric Acid). Phosphoric acid (Phosphoric Acid).
Hazard statements: H314 Causes severe skin burns and eye damage
H290 May be corrosive to metals.
Precautionary statements: P280 Wear protective gloves, protective clothing and eye or face protection
P303+361+353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
P305+351+338 - 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 CENTRE, doctor or physician
Other hazards: No other hazards known. The product does not meet the criteria for PBT or vPvB in accordance with Regulation (EC) No 1907/2006, Annex XIII.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

Ingredient(s)	EC No,	CAS No.	REACH No.	Classification EC 1272/2008	Notes	Weight %
Nitric Acid	231-741-2	7697-37-2	01-2119487297-23	Ox Liq 2 (H272) Ox Liq 3 (H272) Acute Tox 3 (H331) Skin Corr 1A (H314) Met Corr 1 (H290)		30-50
Phosphoric Acid	231-633-2	7664-38-2	01-2119485924-24	Skin Corr 1B (H314) Met Corr 1 (H290)		3-10

For the full text of the H and EUH phrases mentioned in this Section, see Section 16.
Workplace exposure limit(s), if available, are listed in subsection 8.1.

4. FIRST AID MEASURES

Description Of First Aid Measures
General Information: If unconscious place in recovery position and seek medical advice. Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator.
Inhalation: Seek medical attention or advice if you feel unwell.

Skin contact: Wash skin with plenty of lukewarm, gently flowing water for at least 30 minutes. Take off immediately all contaminated clothing and wash it before re-use. Immediately call a POISON CENTRE, doctor or physician.

Eye contact: Hold eyelids apart and flush eyes with plenty of lukewarm water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE, doctor or physician.

Ingestion: Rinse mouth. Immediately drink 1 glass of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Keep at rest. Immediately call a POISON CENTRE, doctor or physician.

Self-protection of first aider: Consider personal protective equipment as indicated in subsection 8.2.

Most Important Symptoms And Effects, Both Acute And Delayed

Inhalation: No known effects or symptoms in normal use.

Skin contact: Causes severe burns.

Eye contact: Causes severe or permanent damage.

Ingestion: Ingestion will lead to a strong caustic effect on mouth and throat and to the danger of perforation of oesophagus and stomach.

Indication Of Any Immediate Medical Attention And Special Treatment Needed

No information available on clinical testing and medical monitoring. Specific toxicological information on substances, if available, can be found in section 11

5. FIREFIGHTING MEASURES

Extinguishing media: Carbon dioxide. Dry powder. Water spray jet. Fight larger fires with water spray jet or alcohol- resistant foam.

Special hazards arising from the substance or mixture: No special hazards known.

Advice for firefighters: As in any fire, wear self contained breathing apparatus and suitable protective clothing including gloves and eye/face protection.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective Eqpt & emergency procedures

Personal Precautions: Wear suitable protective clothing, gloves and eye/face protection.

Environmental precautions: Do not allow to enter drainage system, surface or ground water. Dilute with plenty of water.

Methods and material for containment and cleaning up

Clean-up Methods: Dyke to collect large spills. Use neutralising agent. Absorb onto dry sand or similar inert material. Do not place spilled materials back into the original container. Collect in closed and suitable containers for disposal.

Reference to other sections: For personal protective equipment see Section 8. For disposal considerations see section 13.

7. HANDLING AND STORAGE

Precautions For Safe Handling

Measures To Prevent Fire And Explosions: No special precautions required.

Measures Required To Protect The Environment: For environmental exposure controls see subsection 8.2.

Advice On General Occupational Hygiene: Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not mix with other products unless advised by Diversey. Wash face, hands and any exposed skin thoroughly after handling. Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. Avoid contact with skin and eyes. Use only with adequate ventilation.
See section 8, Exposure Controls/Personal Protection.

Conditions For Safe Storage, Including Any Incompatibilities: Store in accordance with local and national regulations. Store in a closed container. Keep only in original packaging. Keep cool. Keep away from heat and direct sunlight.. For conditions and materials to avoid see section 10.

Specific End Use(s): No specific advice for end use available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Workplace exposure limits

Air limit values, if available:

Ingredient(s)	UK - Long Term Values	UK – Short Term Values
Nitric Acid		1ppm 2.6 mg/m^3
Phosphoric Acid	1 mg/m^3	2 mg/m^3

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Biological limit values, if available:

Recommended monitoring procedures if available:

Additional exposure limits under the conditions of use, if available:

DNEL/DMEL and PNEC values

Human exposure

DNEL oral exposure - Consumer (mg/kg bw)

Ingredient(s)	Short term – Local effects	Short term – Systemic effects	Long term – Local effects	Long term – Systemic effects
Nitric Acid	-	-	-	-
Phosphoric Acid	-	-	-	-

DNEL dermal exposure – Worker

Ingredient(s)	Short term – Local effects	Short term – Systemic effects (mg/kg bw)	Long term – Local effects	Long term – Systemic effects (mg/kg bw)
Nitric Acid	-	-	-	-
Phosphoric Acid	No data available	-	No data available	-

DNEL dermal exposure – Consumer

Ingredient(s)	Short term – Local effects	Short term – Systemic effects (mg/kg bw)	Long term – Local effects	Long term – Systemic effects (mg/kg bw)
Nitric Acid	-	-	-	-
Phosphoric Acid	No data available	-	No data available	-

DNEL inhalatory exposure - Worker (mg/m^3)

Ingredient(s)	Short term – Local effects	Short term – Systemic effects	Long term – Local effects	Long term – Systemic effects
Nitric Acid	No data available	-	2.6	-
Phosphoric Acid	-	-	2.92	1

DNEL inhalatory exposure - Consumer (mg/m^3)

Ingredient(s)	Short term – Local effects	Short term – Systemic effects	Long term – Local effects	Long term – Systemic effects
Nitric Acid	No data available	-	1.3	-
Phosphoric Acid	-	-	0.73	-

Environmental exposure

Environmental exposure – PNEC

Ingredient(s)	Surface water, fresh (mg/l)	Surface water, marine (mg/l)	Intermittent (mg/l)	Sewage treatment plant (mg/l)
Nitric Acid	-	-	-	-
Phosphoric Acid	-	-	-	-

Environmental exposure - PNEC, continued

Ingredient(s)	Sediment, freshwater (mg/kg)	Sediment, marine (mg/kg)	Soil (mg/kg)	Air (mg/m^3)
Nitric Acid	-	-	-	-
Phosphoric Acid	-	-	-	-

Exposure Controls

The following information applies for the uses indicated in subsection 1 of the Safety Data Sheet.
If available, please refer to the product information sheet for application and handling instructions.
Normal use conditions are assumed for this section.

Recommended safety measures for handling the **undiluted** *product:*
Covering activities such as filling and transfer of product to application equipment, flasks or buckets

Appropriate engineering controls: If the product is diluted by using specific dosing systems with no risk of splashes or direct skin contact, the personal protection equipment as described in this section is not required.

Appropriate organisational controls: Avoid direct contact and/or splashes where possible. Train personnel.

Personal Protective Equipment

Eye / face protection: Safety glasses or goggles (EN 166). The use of a full-face shield or other full-face protection is strongly recommended when handling open containers or if splashes may occur

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Hand protection: Chemical-resistant protective gloves (EN 374). Verify instructions regarding permeability and breakthrough time, as provided by the gloves supplier. Consider specific local use conditions, such as risk of splashes, cuts, contact time and temperature.

Suggested gloves for prolonged contact:	Material:	butyl rubber
	Penetration time:	>= 480 min
	Material thickness:	>= 0.7 mm
Suggested gloves for protection against splashes:	Material:	nitrile rubber
	Penetration time:	>= 30 min
	Material thickness:	>= 0.4 mm

In consultation with the supplier of protective gloves a different type providing similar protection may be chosen.
Body protection: Wear chemical-resistant clothing and boots in case direct dermal exposure and/or splashes may occur. (EN 14605).
Respiratory protection: No special requirements under normal use conditions.
Environmental exposure controls: Should not reach sewage water or drainage ditch undiluted or unneutralised.

*Recommended safety measures for handling the **diluted** product:*
Recommended maximum concentration (%): 13
Appropriate engineering controls: No special requirements under normal use conditions.
Appropriate organisational controls: Avoid direct contact and/or splashes where possible. Train personnel.

Personal protective equipment .
Eye / face protection: Safety glasses or goggles (EN166).
Hand protection: Chemical-resistant protective gloves (EN 374). Verify instructions regarding permeability and breakthrough time, as provided by the gloves supplier. Consider specific local use conditions, such as risk of splashes, cuts, contact time and temperature.

Suggested gloves for prolonged contact:	Material:	butyl rubber
	Penetration time:	>= 480 min
	Material thickness:	>= 0.7 mm
Suggested gloves for protection against splashes:	Material:	nitrile rubber
	Penetration time:	>= 30 min
	Material thickness:	>= 0.4 mm

In consultation with the supplier of protective gloves a different type providing similar protection may be chosen.
Body protection: No special requirements under normal use conditions.
Respiratory protection: No special requirements under normal use conditions..
Environmental exposure controls: No special requirements under normal use conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Information in this section refers to the product, unless it is specifically stated that substance data is listed.

		Method / Remark
Physical State:	Liquid	
Colour:	Clear colourless	
Odour:	Product specific	
Odour Threshold:	Not applicable	
pH:	<2 (neat)	ISO 4316
Melting/Freezing Point (ºC):	Not determined.	Not relevant to classification of product.
Initial Boiling point/range (°C):	Not determined	See substance data.

Substance Data, Boiling Point

Ingredient(s)	Value (ºC)	Method	Atmospheric Pressure (hPa)
Nitric Acid	116	Method not given	
Phosphoric Acid	158	Method not given	1013

Flammability (liquid):	Not flammable.	
Flash point (°C):	Not determined.	
Sustained Combustion:	Not applicable	UN Manual of Tests & Criteria, Section 32, L2
Evaporation Rate:	Not determined.	Not relevant to classification of product.
Flammability (solid, gas):	Not applicable to liquids.	
Upper/lower flammability Limit:	Not determined.	

Substance Data, Flammability or Explosive Limits, if Available:

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Vapour Pressure: Not determined. See substance data.

Substance Data, Vapour Pressure

Ingredient(s)	Value (Pa)	Method	Temperature (ºC)
Nitric Acid	770	Method not given	20
Phosphoric Acid	4	Method not given	20

Vapour Density: Not determined. Not relevant to classification of this product.
Relative Density: Approx 1.28 g/cm^3 (20ºC) OECD 109 (EU A.3)
Solubility in / Miscibility with Water: Fully miscible

Substance Data, Solubility in Water

Ingredient(s)	Value (g/l)	Method	Temperature (ºC)
Nitric Acid	>500	Method not given	
Phosphoric Acid	Soluble		

Substance Data, Partition Coefficient N-Octanol/Water (log/Kow): See section 12.

Autoignition Temperature: Not determined.
Decomposition Temperature: Not applicable.
Viscosity: Not determined.
Explosive Properties: Not explosive.
Oxidising properties: Not oxidising.

Other information
Surface Tension (N/m): Not determined. Not relevant to classification of this product.
Corrosion To Metals: Corrosive Weight of evidence.

Substance Data, Dissociation Constant, if available.

10. STABILITY AND REACTIVITY

Reactivity: No reactivity hazards known under normal storage and use conditions.
Chemical stability: Stable under normal storage and use conditions.
Possibility of hazardous reactions: No hazardous reactions known under normal storage and use conditions.
Conditions to avoid: None known under normal storage and use conditions.
Incompatible materials: Keep away from products containing chlorine-based bleaching agents or sulphites. Reacts with alkali and metals.
Hazardous decomposition products: Nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION

Information On Toxicological Effects
Mixture Data

Acute Inhalation Toxicity
Result: Mist
Species: Not applicable
Method: Weight of evidence

Relevant Calculated ATE(s)
ATE - Oral (mg/kg): Not applicable
ATE _ Inhalatory, mists (mg/l): >5

Substance data, where relevant and available, are listed below.

Acute toxicity
Acute oral toxicity

Ingredients	Endpoint	Value (mg/kg)	Species	Method	Exposure Time (h)
Nitric Acid		No data available			
Phosphoric Acid	LD_{50}	>300-5000	Rat	OECD 423 (EU B.1 tris).	

Acute dermal toxicity

Ingredients	Endpoint	Value (mg/kg)	Species	Method	Exposure Time (h)
Nitric Acid		No data available			
Phosphoric Acid	LD_{50}	2740	Rabbit	Method not given	

Acute inhalative toxicity

Ingredients	Endpoint	Value (mg/l)	Species	Method	Exposure Time (h)
Nitric Acid	LC_{50}	>2.65 (vapour)_	Rat	OECD 403 (EU B.2)	
Phosphoric Acid	LC_{50}	850	Rat	Method not given	2

Irritation and corrosivity

Skin irritation and corrosivity

Ingredients	Result	Species	Method	Exposure Time (h)
Nitric Acid	Corrosive	Rabbit	Method not given	
Phosphoric Acid	Corrosive	Rabbit	OECD 404 (EU B.4)	

Eye irritation and corrosivity

Ingredients	Result	Species	Method	Exposure Time (h)
Nitric Acid	Corrosive		Method not given	
Phosphoric Acid	Severe damage	Rabbit	Method not given	

Respiratory tract irritation and corrosivity

Ingredients	Result	Species	Method	Exposure Time (h)
Nitric Acid	No data available			
Phosphoric Acid	No data available			

Sensitisation - Sensitisation by skin contact

Ingredients	Result	Species	Method	Exposure Time (h)
Nitric Acid	No data available			
Phosphoric Acid	Not sensitising	Human	Human Experience	

Sensitisation by inhalation

Ingredients	Result	Species	Method	Exposure Time (h)
Nitric Acid	No data available			
Phosphoric Acid	No data available			

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Mutagenicity

Ingredients	Result (in vitro)	Method (in vitro)	Result (in vivo)	Method (in vivo)
Nitric Acid	No evidence for mutagenicity, negative test results	OECD 471 (EU B.12/13)	No data available	
Phosphoric Acid	No evidence for mutagenicity, negative test results	OECD 471 (EU B.12/13) OECD 473 OECD 476 (Mouse lymphoma)	No data available	

Carcinogenicity

Ingredient(s)	Effect
Nitric Acid	No evidence for carcinogenicity, negative test results
Phosphoric Acid	No data available

Toxicity for reproduction

Ingredient(s)	End point	Specific effect	Value (mg/kg bw/d)	Species	Method	Exposure Time	Remarks & other effects reported
Nitric Acid	NOAEL	Developmental toxicity	1500	Rat	OECD 422 oral	28 days	Not toxic for reproduction
Phosphoric Acid	NOAEL	Developmental toxicity	410	Rat	OECD 422 oral	10 days	No evidence for reproductive or developmental toxicity

Repeated dose toxicity – Sub-acute or sub-chronic oral toxicity

Ingredient(s)	Endpoint	Value (mg/kg bw/d)	Species	Method	Exposure time (days)	Specific effects & organs affected
Nitric Acid	NOAEL	1500	Rat	OECD 422 oral	28	
Phosphoric Acid	NOAEL	250	Rat	OECD 422 oral		

Sub-chronic dermal toxicity

Ingredient(s)	Endpoint	Value (mg/kg bw/d)	Species	Method	Exposure time (days)	Specific effects & organs affected
Nitric Acid		No data available				
Phosphoric Acid		No data available				

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Sub-chronic inhalation toxicity

Ingredient(s)	Endpoint	Value (mg/kg bw/d)	Species	Method	Exposure time (days)	Specific effects & organs affected
Nitric Acid		No data available				
Phosphoric Acid		No data available				

Chronic toxicity

Ingredient(s)	Exposure route	End point	Value (mg/kg bw/d)	Species	Method	Exposure time	Specific effects & organs affected	Remark
Nitric Acid			No data available					
Phosphoric Acid			No data available					

STOT – Single Exposure

Ingredient(s)	Affected organ(s)
Nitric Acid	No data available
Phosphoric Acid	No data available

STOT – Repeated Exposure

Ingredient(s)	Affected organ(s)
Nitric Acid	No data available
Phosphoric Acid	No data available

Aspiration Hazard: Substances with an aspiration hazard (H304), if any, are listed in section 3. If relevant, see section 9 for dynamic viscosity and relative density of the product.

Potential Adverse Health Effects And Symptoms: Effects and symptoms related to the product, if any, are listed in section 4.

12. ECOLOGICAL INFORMATION

Toxicity

No data is available on the mixture.
Substance data, where relevant and available, are listed below

Aquatic short-term toxicity

Aquatic short-term toxicity – fish

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure Time (h)
Nitric Acid	LC_{50}	12.5	Gambusia Affinis	Method not given	96
Phosphoric Acid	LC_{50}	138	Gambusia Affinis	Method not given	96

Aquatic short-term toxicity – crustacea

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure Time (h)
Nitric Acid	EC_{50}	8609	Daphnia Magna Straus	Non guideline test	24
Phosphoric Acid	EC_{50}	>100	Daphna Magna Straus	OECD 202	48

Aquatic short-term toxicity – algae

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure Time (h)
Nitric Acid		No data available			
Phosphoric Acid	EC_{50}	>100	Desmodesmus Subspicatus	OECD 201 (EU C.3)	72

Aquatic short-term toxicity - marine species

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure Time (h)
Nitric Acid		No data available			
Phosphoric Acid		No data available			

Impact on sewage plants - toxicity to bacteria

Ingredient(s)	Endpoint	Value (mg/l)	Inoculum	Method	Exposure Time (h)
Nitric Acid		No data available			
Phosphoric Acid	EC_{50}	270	Activated sludge	Method not given	

Aquatic long-term toxicity

Aquatic long-term toxicity – fish

Ingredients	Endpoint	Value (mg/l)	Species	Method	Exposure Time	Effects Observed
Nitric Acid	LD_{50}	8226	Oncorhynchus Mykiss	Method not given	96 hrs	
Phosphoric Acid		No data available				

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Aquatic long-term toxicity – crustacea

Ingredients	Endpoint	Value (mg/l)	Species	Method	Exposure Time	Effects Observed
Nitric Acid		No data available				
Phosphoric Acid		No data available				

Aquatic toxicity to other aquatic benthic organisms, including sediment-dwelling organisms, if available:

Ingredients	Endpoint	Value (mg/kg dw sediment)	Species	Method	Exposure Time	Effects Observed
Nitric Acid		No data available				
Phosphoric Acid		No data available				

Terrestrial Toxicity

Terrestrial toxicity - soil invertebrates, including earthworms, if available:

Ingredients	Endpoint	Value (mg/kg dw soil)	Species	Method	Exposure Time	Effects Observed
Nitric Acid		No data available				
Phosphoric Acid		No data available				

Terrestrial toxicity - plants, if available

Ingredients	Endpoint	Value (mg/kg dw soil)	Species	Method	Exposure Time	Effects Observed
Nitric Acid		No data available				
Phosphoric Acid		No data available				

Terrestrial toxicity - birds, if available

Ingredients	Endpoint	Value	Species	Method	Exposure Time	Effects Observed
Nitric Acid		No data available				
Phosphoric Acid		No data available				

Terrestrial toxicity - beneficial insects, if available

Ingredients	Endpoint	Value (mg/kg dw soil)	Species	Method	Exposure Time	Effects Observed
Nitric Acid		No data available				
Phosphoric Acid		No data available				

Terrestrial toxicity - soil bacteria, if available

Ingredients	Endpoint	Value (mg/kg dw soil)	Species	Method	Exposure Time	Effects Observed
Nitric Acid		No data available				
Phosphoric Acid		No data available				

Persistence And Degradability

Abiotic degradation - photodegradation in air, if available:
Abiotic degradation - hydrolysis, if available:
Abiotic degradation - other processes, if available:

Biodegradation

Ready biodegradability - aerobic conditions

Ingredient(s)	Inoculum	Analytical Method	DT_{50}	Method	Evaluation
Nitric Acid					Not applicable – (inorganic substance)
Phosphoric Acid					Not applicable – (inorganic substance)

Ready biodegradability - anaerobic and marine conditions, if available:

Degradation in relevant environmental compartments, if available:

Bioaccumulative potential

Partition coefficient n-octanol/water (log Kow)

Ingredient(s)	Value	Method	Evaluation	Remark
Nitric Acid	-2.3	Method not given	Not relevant, does not bioaccumulate.	
Phosphoric Acid	No data available		No bioaccumulation expected.	

Bioconcentration factor (BCF)

Ingredient(s)	Value	Method	Evaluation	Remark
Nitric Acid	No data available			
Phosphoric Acid	No data available		No bioaccumulation expected.	

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Mobility in soil
Adsorption/Desorption to soil or sediment

Ingredient(s)	Adsorption coefficient Log Koc	Desorption coefficient Log Koc(des)	Method	Soil / sediment type	Evaluation
Nitric Acid	No data available				Mobile in aqueous environment
Phosphoric Acid	No data available				Potential for mobility in soil, soluble in water.

Results of PBT and vPvB assessment
Substances that fulfill the criteria for PBT/vPvB, if any, are listed in section 3.

Other adverse effects
No other adverse effects known.

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods
Waste from residues/unused Products: The concentrated contents or contaminated packaging should be disposed of by a certified handler or according to the site permit. Release of waste to sewers is discouraged. The cleaned packaging is suitable for energy recovery or recycling in line with local legislation.
European Waste Catalogue: 20 01 14* - acids .
Empty packaging Recommendation: Dispose of observing national or local regulations.
Suitable cleaning agents: Water, if necessary with cleaning agent.

14. TRANSPORT INFORMATION

Land transport (ADR/RID), Sea transport (IMDG), Air transport (ICAO-TI / IATA-DGR)
UN number: 2031
UN proper shipping name: Nitric acid, solution
Transport hazard class(es)
Class (and subsidiary risk): 8

Packing group: II

Environmental hazards:
Environmentally hazardous: No
Marine pollutant: No
Special precautions for user: None known.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: The product is not transported in bulk tankers.

Other Relevant Information
ADR
Classification code: C1
Tunnel restriction code: E
Hazard identification number: 80

IMO/IMDG
EmS: F-A, S-B

The product has been classified, labelled and packaged in accordance with the requirements of ADR and the provisions of the IMDG Code. Transport regulations include special provisions for certain classes of dangerous goods packed in limited quantities.

15. REGULATORY INFORMATION

Safety, Health And Environmental Regulations/Legislation Specific For The Substance Or Mixture
EU regulations: Regulation (EC) No. 1907/2006 - REACH
Regulation (EC) No 1272/2008 - CLP
Regulation (EC) No. 648/2004 - Detergents regulation

Authorisations or restrictions (Regulation [EC] No 1907/2006, Title VIII, respectively Title VIII): Not applicable

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UFI: W394-90EC-A00Y-0HPS

Ingredients according to EC Detergents Regulation 648/2004:

Chemical safety assessment: A chemical safety assessment has not been carried out on the mixture

16. OTHER INFORMATION

The information in this document is based on our best present knowledge. However, it does not constitute a guarantee for any specific product features and does not establish a legally binding contract

MSDS code: MSDS1994
Revision: 8th September 2019.
Reason for revision: Overall design adjusted in accordance with Amendment 453/2010, Annex II of Regulation (EC) No 1907/2006,
Classification procedure: The classification of the mixture is in general based on calculation methods using substance data, as required by Regulation (EC) No 1272/2008. If for certain classifications data on the mixture is available or for example bridging principles or weight of evidence can be used for classification, this will be indicated in the relevant sections of the Safety Data Sheet. See section 9 for physical chemical properties, section 11 for toxicological information and section 12 for ecological information

Full text of theH and EUH phrases mentioned in section 3:

H272	May intensify fire; oxidiser.
H290	May be corrosive to metals
H303	May be harmful if swallowed.
H314	Causes sever skin burns and eye damage.
H331	Toxic if inhaled.

Abbreviations and acronyms:

AISE	The international Association for Soaps, Detergents and Maintenance Products
ATE	Acute Toxicity Estimate.
DNEL	Derived No Effect Limit
EC50	Effective concentration, 50%
EUH	CLP Specific hazard statement
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal dose
NOAEL	No observed adverse effect level
NOEL	No observed effect level
OECD	Organization for Economic Cooperation and Development
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No Effect Concentration
REACH number - REACH registration number, without supplier specific part	
vPvB	very Persistent and very Bioaccumulative

End of Safety Data Sheet.