

SAFETY DATA SHEET**NOVADAN®****Ro Dan 18****NOVADAN®**

The safety data sheet is in accordance with Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

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

Date issued 16.10.2014

Revision date 29.09.2020

1.1. Product identifier

Product name Ro Dan 18

UFI AG41-F0A4-W007-19TF

Article no. 12839, 12840, 12841

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

Use of the substance / preparation Acidic membrane cleaning agent.

Main intended use PC-CLN-OTH Other cleaning, care and maintenance products (excludes biocidal products)

Relevant identified uses
SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
SU4 Manufacture of food products
SU22 Professional uses: publicly accessible (administration, education, entertainment, services, craftsmen)
PC35 Washing and cleaning products (including solvent based products)
PROC2 Use in closed, continuous process with occasional controlled exposure
ERC8A Wide dispersive indoor use of processing aids in open systems

Uses advised against No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet**Producer**

Company name Novadan ApS

Postal address Platinvej 21

Postcode DK-6000

City Kolding

Country Danmark

Telephone number + 45 76 34 84 00

Fax	+ 45 75 50 43 70
Email	sds@novadan.dk
Website	www.novadan.dk

1.4. Emergency telephone number

Emergency telephone	Description: UK: NHS: 111 EI: National Poisons Information Centre, 24/7: 01 809 2166
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP / GHS]	Skin Corr. 1B; H314; Calculation method Eye Dam. 1; H318; Calculation method
Substance / mixture hazardous properties	For further information, please refer to section 11.
Additional information on classification	The informations stated in this MSDS, applies for the concentrated product. See Sec. 16, for informations regarding recommended user solutions

2.2. Label elements

Hazard pictograms (CLP)



Composition on the label	Formic acid, Methane sulphonic acid
Signal word	Danger
Hazard statements	H314 Causes severe skin burns and eye damage.
Precautionary statements	P280 Wear protective gloves / protective clothing / eye protection / face protection. P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water / shower. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER or doctor / physician.

2.3. Other hazards

Health effect	Corrosive to skin and eyes. May cause permanent damage to the eyes, especially if the product is not washed away IMMEDIATELY. See section 11 for additional information on health hazards.
Environmental effects	Substantial amounts of the product may lead to a local change in acidity in small water systems which may have adverse effects on aquatic organisms.

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Substance	Identification	Classification	Contents	Notes
Formic acid	CAS No.: 64-18-6 EC No.: 200-579-1 Index No.: 607-001-00-0 REACH Reg. No.: 01-2119491174-37-xxxx	Skin Corr 1A; H314 Flam. Liq. 3; H226 Acute tox. 3; H331 Acute tox. 4; H302	5 - 15 %	
Methane sulphonic acid	CAS No.: 75-75-2 EC No.: 200-898-6 Index No.: 607-145-00-4 REACH Reg. No.: 01-2119491166-34-xxxx	Skin Corr 1B; H314 Met. Corr. 1; H290 Acute tox. 4; H302 Acute tox. 4; H312 Eye Dam. 1; H318 STOT SE3; H335	5 - 15 %	
Substance comments	-	The full text for all hazard statements is displayed in section 16.		

SECTION 4: First aid measures

4.1. Description of first aid measures

General	Remove affected person from source of contamination.
Inhalation	Move injured person into fresh air and keep person calm under observation. If uncomfortable: Seek hospital and bring these instructions.
Skin contact	Wash off promptly and flush contaminated skin with water. Promptly remove clothing if soaked through and flush skin with water. Get medical attention if any discomfort continues.
Eye contact	Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Get medical attention immediately. Continue to rinse.
Ingestion	Immediately rinse mouth and drink plenty of water. Call an ambulance. Bring along these instructions. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Do not give victim anything to drink if he is unconscious.
Recommended personal protective equipment for first aid responders	Wear necessary protective equipment. For personal protection, see section 8.

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

Acute symptoms and effects	Strongly corrosive. Causes severe burns and serious eye damage. Immediate first aid is imperative. Strongly corrosive. May cause deep tissue damage.
Delayed symptoms and effects	The etching penetrates deeply into the tissue and is first noticed after a while.

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

Other information	In case of unconsciousness, ingestion or eye contact: Immediately call a doctor / ambulance. Show this safety data sheet.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Use fire-extinguishing media appropriate for surrounding materials.

5.2. Special hazards arising from the substance or mixture

Fire and explosion hazards

This product is not flammable. During fire, gases hazardous to health may be formed. Water used for fire extinguishing, which has been in contact with the product, may be corrosive.

5.3. Advice for firefighters

Personal protective equipment

Wear necessary protective equipment. For personal protection, see section 8.

Fire fighting procedures

Reference is made to the company fire procedure. If risk of water pollution occurs, notify appropriate authorities.
Avoid breathing fire vapours.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal protection measures

Look out! The product is corrosive.
Use protective gloves, goggles and suitable protective clothing.
In case of inadequate ventilation use suitable respirator.
For personal protection, see section 8.
In case of spills, beware of slippery floors and surfaces.

6.2. Environmental precautions

Environmental precautionary measures

Avoid discharge into water courses or onto the ground. Contact local authorities in case of spillage to drain/aquatic environment.

6.3. Methods and material for containment and cleaning up

Cleaning method

Dam and absorb spillage with sand, sawdust or other absorbent. Wash contaminated area with water.

6.4. Reference to other sections

Other instructions

See section 8 and section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling

Use work methods which minimize spreading of vapours, dust, smoke, aerosols, splashes etc. to the extent technically possible. Avoid spilling, skin and eye contact. Do not mix with hypochlorite containing products: toxic chlorine vapors may be formed.

Protective safety measures

Advice on general occupational hygiene

Good personal hygiene is necessary. Wash hands and contaminated areas with water and soap before leaving the work site.

Eating, smoking and water fountains prohibited in immediate work area.
Take off contaminated clothing and personal protective equipment before entering an eating area..

7.2. Conditions for safe storage, including any incompatibilities

Storage Keep away from food, drink and animal feeding stuffs. Store in closed original container in a dry place.

Conditions for safe storage

Storage temperature Value: -20 - 35 °C

Storage stability Durability: 36 months.

7.3. Specific end use(s)

Specific use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Substance	Identification	Exposure limits	TWA Year
Formic acid	CAS No.: 64-18-6	Limit value (8 h) : 9,6 mg/ m3 Limit value (8 h) : 5 ppm	TWA Year: 2011

DNEL / PNEC

Substance Formic acid

DNEL

Group: Consumer
Route of exposure: Short term (acute) - Inhalation - Systemic effect
Value: 9,5 mg/m3
Reference: Supplier MSDS

Group: Consumer
Route of exposure: Long term (repeated) - Inhalation - Systemic effect
Value: 3 mg/m3
Reference: Supplier MSDS

Group: Worker
Route of exposure: Long term (repeated) - Inhalation - Systemic effect
Value: 8,5 mg/m3
Reference: Supplier MSDS

Group: Worker
Route of exposure: Short term (acute) - Inhalation - Systemic effect
Value: 19 mg/m3
Reference: Supplier MSDS

PNEC

Route of exposure: Air
Value: 1 mg/l
Reference: Supplier MSDS

Route of exposure: Sediment

Value: 13,4 mg/kg
Reference: fresh water, Supplier MSDS

Route of exposure: Sediment
Value: 1,34 mg/kg
Reference: sea water, Supplier MSDS

Route of exposure: Soil
Value: 1,5 mg/kg
Reference: Supplier MSDS

Route of exposure: Sewage treatment plant STP
Value: 7,2 mg/l
Reference: Supplier MSDS

Route of exposure: Water
Value: 0,2 mg/l
Reference: Sea water, Supplier MSDS

Route of exposure: Water
Value: 2 mg/l
Reference: Fresh water, Supplier MSDS

Substance

Methane sulphonic acid

DNEL

Group: Professional
Route of exposure: Lang sigt (gentages) - Indånding - Lokal effekt
Value: 2,89 mg/m³
Reference: Supplier MSDS

Group: Professional
Route of exposure: Lang sigt (gentages) - Dermal - Systemisk virkning
Value: 19,44 mg/kg
Reference: Supplier MSDS

Group: Consumer
Route of exposure: Lang sigt (gentages) - Dermal - Systemisk virkning
Value: 8,33 mg/kg
Reference: Supplier MSDS

Group: Consumer
Route of exposure: Kort sigt (akut) - Indånding - Systemisk virkning
Value: 1,44 mg/m³
Reference: Supplier MSDS

Group: Consumer
Route of exposure: Lang sigt (gentages) - Indånding - Systemisk virkning
Value: 1,44 mg/m³
Reference: Supplier MSDS

PNEC

Route of exposure: Water
Value: 0,012 mg/l
Reference: Fresh water, Supplier MSDS

Route of exposure: Sewage treatment plant STP
Value: 100 mg/l
Reference: Supplier MSDS

Route of exposure: Water
Value: 0,0012 mg/l
Reference: Sea water, Supplier MSDS Fresh water, Supplier MSDS

Route of exposure: Air
Value: 0,12 mg/l
Reference: Supplier MSDS

Route of exposure: Sediment
Value: 0,0251 mg/kg
Reference: Fresh water, Supplier MSDS Sea water, Supplier MSDS

Route of exposure: Soil
Value: 0,00183 mg/kg
Reference: Supplier MSDS

8.2. Exposure controls

Safety signs



Precautionary measures to prevent exposure

Technical measures to prevent exposure

Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

An eye wash bottle must be available at the work site.

Eye / face protection

Suitable eye protection

Wear approved safety goggles. EN 166.

Hand protection

Skin- / hand protection, long term contact

Use protective gloves made of:
 Butyl rubber. $\geq 0,7$ mm
 Neoprene. $\geq 0,5$ mm
 EN 374.

Breakthrough time

Value: ≥ 480 minute(s)

Hand protection, comments

Manufacturer's directions for use should be observed because of great diversity of types.

The recommendation is a qualified estimate based on knowledge of the components.

Skin protection

Additional skin protection measures

Wear apron or protective clothing in case of contact. Wear rubber footwear.

Respiratory protection

Respiratory protection necessary at Under normal conditions of use respiration protection should not be required.

Thermal hazards

Thermal hazards None specific. See section 5.

Appropriate environmental exposure control

Environmental exposure controls See section 6.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Fluid.
Colour	Water-white.
Odour	Slightly pungent odour.
pH	Status: In delivery state Value: < 1 Concentration: 0,3 % Status: In aqueous solution Value: ~ 2,5 Comments: 15°dH Concentration: 3 % Status: In aqueous solution Value: ~ 1,5 Comments: 15°dH
Melting point / melting range	Comments: Not relevant.
Boiling point / boiling range	Comments: Not relevant.
Flash point	Comments: Not relevant.
Evaporation rate	Comments: Not relevant.
Flammability (solid, gas)	Not relevant.
Explosion limit	Comments: Not relevant.
Vapour pressure	Comments: Not relevant.
Vapour density	Comments: Not relevant.
Relative density	Comments: Not relevant.
Bulk density	Value: ~ 1,10 kg/l
Solubility	Comments: Completely soluble in water.
Partition coefficient: n-octanol/ water	Comments: Not relevant.
Spontaneous combustability	Comments: Not relevant.
Decomposition temperature	Comments: Not relevant.
Viscosity	Comments: Not relevant.

Explosive properties	Not explosive.
Oxidising properties	Does not meet the criteria for oxidising.

9.2. Other information

Other physical and chemical properties

Comments	No data recorded.
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	There are no known reactivity hazards associated with this product.
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10.2. Chemical stability

Stability	Stable under normal temperature conditions and recommended use.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Liberates toxic gases when mixed with chlorine containing products. Reacts with alkalis and generates heat. Reacts strongly with water. Do not add water directly to the product. It may cause a violent reaction. Risk of bumping (splashes).
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10.4. Conditions to avoid

Conditions to avoid	Strong alkalis. Chlorine containing products. Corrodes aluminum and other light metals, as well as zinc, brass, lead, tin, etc.
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10.5. Incompatible materials

Materials to avoid	Due to the high acidity of the product, it should not be used on untreated aluminum, light metal alloys and other non-acid resistant surfaces.
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10.6. Hazardous decomposition products

Hazardous decomposition products	In case of fire, toxic gases (CO, CO ₂ , NO _x) may be formed.
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Substance	Formic acid
Acute toxicity	Type of toxicity: Acute Effect tested: LD50 Route of exposure: Oral Value: 730 mg/kg Animal test species: Rat Test reference: OECD 401 Comments: Supplier MSDS

Type of toxicity: Acute
Effect tested: LC50
Route of exposure: Inhalation.
Duration: 4h
Value: 7,4 mg/l
Animal test species: Rat
Comments: Supplier MSDS

Other toxicological data

Toxicological tests on the product has not been performed.

Other information regarding health hazards

Assessment of acute toxicity, classification

No evidence for acute toxicity.

Inhalation

Aerosols may be corrosive.

Skin contact

Strongly corrosive. May cause deep tissue damage.

Eye contact

Strongly corrosive. Causes severe burns. Immediate first aid is imperative. May cause permanent damage to the eyes, especially if the product is not washed away IMMEDIATELY.

Ingestion

May cause burns in mucous membranes, throat, oesophagus and stomach.

Sensitisation

No evidence for respiratory nor skin sensitization.

Assessment of germ cell mutagenicity, classification

No evidence for germ cell mutagenicity.

Assessment of carcinogenicity, classification

No evidence for carcinogenicity.

Assessment of reproductive toxicity, classification

No evidence for reproductive toxicity.

Assessment of specific target organ toxicity - single exposure, classification

No evidence for STOT-single exposure.

Assessment of specific target organ toxicity - repeated exposure, classification

No evidence for STOT-repeated exposure.

Assessment of aspiration hazard, classification

No evidence for aspiration hazard.

Symptoms of exposure

Endocrine disruption

No evidence for endocrine disrupting properties.

Other information

No specific symptoms noted.

SECTION 12: Ecological information

12.1. Toxicity

Substance

Formic acid

Aquatic toxicity, fish

Value: 68 mg/l
Test duration: 96h
Species: Leuciscus idus

	Method: LC50, DIN 38412 Test reference: Supplier MSDS
Substance	Methane sulphonic acid
Aquatic toxicity, fish	Value: 10 - 100 mg/l Test duration: 96h Species: Oncorhynchus mykiss Method: LC50, OECD 203 Test reference: Supplier MSDS
Substance	Methane sulphonic acid
Aquatic toxicity, algae	Value: 10 - 100 mg/l Test duration: 72h Species: Selenastrum capricomutum Method: EC50, OECD 201 Test reference: Supplier MSDS
Substance	Formic acid
Aquatic toxicity, crustacean	Value: 1,24 mg/l Test duration: 48h Species: Daphnia Magna Method: EC50, OECD 202 Test reference: Supplier MSDS
Substance	Methane sulphonic acid
Aquatic toxicity, crustacean	Value: 10 - 100 mg/l Test duration: 48h Species: Daphnia Magna Method: EC50, OECD 202 Test reference: Supplier MSDS
Ecotoxicity	Large amounts of the product may affect the acidity (pH-factor) in water with possible risk of harmful effects to aquatic organisms.

12.2. Persistence and degradability

Persistence and degradability description/evaluation	The product is readily biodegradable.
Substance	Methane sulphonic acid
Biodegradability	Value: > 70 % Method: OECD 301A

12.3. Bioaccumulative potential

Bioaccumulation, evaluation	The product is not bioaccumulating.
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12.4. Mobility in soil

Mobility	The product is water soluble and may spread in water systems.
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12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	Not Classified as PBT/vPvB by current EU criteria.
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12.6. Other adverse effects

Potential endocrine disruptor	Comments: No evidence for endocrine disrupting properties.
Additional ecological information	None.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Appropriate methods of disposal for the chemical	Do not empty into drains; dispose of this material and its container at hazardous or special waste collection point. Dispose of waste and residues in accordance with local authority requirements. -
Appropriate methods of disposal for the contaminated packaging	Dispose unused product and the packaging in accordance with local requirements.
EWC waste code	EWC waste code: 0706 wastes from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics Classified as hazardous waste: Yes
EWL packing	EWC waste code: 0706 wastes from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics Classified as hazardous waste: Yes
Other information	When handling waste, consideration should be made to the safety precautions applying to handling of the product. Waste code applies to product remnants in pure form.

SECTION 14: Transport information

Dangerous goods	Yes
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14.1. UN number

ADR/RID/ADN	3265
IMDG	3265
ICAO/IATA	3265

14.2. UN proper shipping name

Proper shipping name English ADR/RID/ADN	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Technical name/Danger releasing substance English ADR/RID/ADN ADR/RID/ADN	Formic acid, Methanesulphonic acid CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Technical name/danger releasing substance ADR/RID/ADN IMDG	Formic acid, Methanesulphonic acid CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Technical name/danger releasing substance IMDG ICAO/IATA	Formic acid, Methanesulphonic acid CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.

Technical name/danger releasing substance ICAO/IATA	Formic acid, Methanesulphonic acid
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14.3. Transport hazard class(es)

ADR/RID/ADN	8
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Classification code ADR/RID/ADN	C3
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IMDG	8
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ICAO/IATA	8
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14.4. Packing group

ADR/RID/ADN	II
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IMDG	II
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ICAO/IATA	II
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14.5. Environmental hazards

IMDG Marine pollutant	No
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14.6. Special precautions for user

Special safety precautions for user None.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Product name	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
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Additional information

Hazard label ADR/RID/ADN	8
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Hazard label IMDG	8
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Hazard label ICAO/IATA	8
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ADR/RID Other information

Tunnel restriction code	E
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Transport category	2
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Hazard No.	80
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Other applicable information ADR/RID	80
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IMDG Other information

EmS	F-A, S-B
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SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture

Other label information	For professional users only. As a general rule, persons under 18 years of age are not allowed to work with this product. Users must be carefully instructed in the proper work procedure, the dangerous properties of the product and the necessary safety instructions.
Water hazard class (DE)	Water hazard class (WGK): 1: low hazard to waters Source: Self-classification (mixture; calculation rule).
Legislation and regulations	The Management of Health and Safety at Work Regulations 1999 (SI 1999 No. 3242), with amendments. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments. The List of Wastes (England) (Amendment) Regulations 2005. (SI 2005 No. 895). EH40/2005, Workplace exposure limits 2005, with amendments. 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. REGULATION (EC) No 648/2004 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 March 2004 on detergents.

15.2. Chemical safety assessment

Chemical safety assessment performed	No
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SECTION 16: Other information

List of relevant H-phrases (Section 2 and 3)	H226 Flammable liquid and vapour. H290 May be corrosive to metals. H302 Harmful if swallowed. H312 Harmful in contact with skin. H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage. H331 Toxic if inhaled. H335 May cause respiratory irritation.
Training advice	No particular training or education is required but the user must be familiar with this SDS. Users must be carefully instructed in the proper work procedure, the dangerous properties of the product and the necessary safety instructions.
Additional information	READY-TO-USE MIXTURE: 0,4 - 3%: H314 Causes severe skin burns and eye damage.
Information added, deleted or revised	Change to Sections: 1, 2, 3, 7, 8, 9, 11, 12, 13, 14, 16
Version	2

Prepared by

MP