

NOVADAN®

SAFETY DATA SHEET

Ro Dan Acid

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 20.04.2012

Revision date 17.05.2017

1.1. Product identifier

Product name Ro Dan Acid

Article no. 12396, 12402, 12486, 56740, 59222

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

Use of the substance/preparation Acidic membrane cleaning agent.

Relevant identified uses

- SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
- SU4 Manufacture of food products
- 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

Manufacturer

Company name Novadan ApS

Postal address Platinvej 21

Postcode DK-6000

City Kolding

Country Danmark

Tel + 45 76 34 84 00

Fax + 45 75 50 43 70

E-mail sds@novadan.dk

Website www.novadan.dk

1.4. Emergency telephone number

Emergency telephone

Description: UK: 111 NHS
IE: 01 809 2166 National Poisons Information Centre, 24/7

SECTION 2: Hazards identification

2.1. Classification of substance or mixture

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

Met. Corr. 1; H290
Skin Corr 1A; H314
Eye Dam. 1; H318

Substance / mixture
hazardous properties

For further information, please refer to section 11.

2.2. Label elements

Hazard Pictograms (CLP)



Composition on the label

Nitric Acid , Phosphoric acid

Signal word

Danger

Hazard statements

H290 May be corrosive to metals.
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): Remove / 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

Description of hazard

In contact with compounds containing chlorine, toxic gases may form. Generates strong heat in contact with alkaline compounds, risk of bumping.

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.
This product does not contain any PBT or vPvB substances.

Other hazards

Undiluted, the product may be corrosive to metals.
When used in the recommended dosages, contact time and temperature, the product is compatible with acid-proof stainless steels.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Substance	Identification	Classification	Contents
Nitric Acid	CAS no.: 7697-37-2 EC no.: 231-714-2 Index no.: 007-004-00-1 REACH Reg. No.: 01-2119487297-23-xxxx	Met. Corr. 1; H290 Skin Corr 1A; H314 Ox. Liq. 3; H272	30 – 60 %
Phosphoric acid	CAS no.: 7664-38-2-A EC no.: 231-633-2 Index no.: 015-011-00-6 REACH Reg. No.: 01-2119485924-24-XXXX	Acute tox. 4; H302 Skin Corr 1B; H314 Eye Dam. 1; H318 Met. Corr. 1; H290	0 – 5 %
Citric acid, monohydrate	CAS no.: 5949-29-1	Eye Irrit. 2; H319	0 – 5 %

EC no.: 201-069-1
REACH Reg. No.: 01-
2119457026-42-xxxx

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	Important! Immediately rinse with water for at least 15 minutes. May cause permanent damage if eye is not immediately irrigated. Make sure to remove any contact lenses from the eyes before rinsing. Immediately transport to hospital or eye specialist. Continue flushing during transport to hospital.
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	As described in section 2.2 and 2.3.
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.
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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.
Hazardous combustion products	Toxic gases/vapours/fumes of: Nitrous gases (NOx).

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 respiratory protection. For personal protection, see section 8.

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

7.2. Conditions for safe storage, including any incompatibilities

Storage Store in tightly closed original container. Keep away from food, drink and animal feeding stuffs. Store away from: Chlorine and Alkalis.

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	Value	TWA Year
Nitric Acid	CAS no.: 7697-37-2	TWA (8h): 5 mg/m ³ TWA (8h): 2 ppm	
Phosphoric acid	CAS no.: 7664-38-2-A	TWA (8h): 1 mg/m ³ OEL Short Term Value Value: 2 mg/m ³	
Citric acid, monohydrate	CAS no.: 5949-29-1		

DNEL / PNEC

Substance Nitric Acid
DNEL **Group:** Worker
Route of exposure: Short term (acute) – Inhalation – Local effect

Substance DNEL	Value: 2,6 mg/m ³ Group: Worker Route of exposure: Long term (repeated) – Inhalation – Local effect Value: 1,3 mg/m ³
	Phosphoric acid
Summary of risk management measures, environment	Group: Worker Route of exposure: Long term (repeated) – Inhalation – Systemic effect Value: 10,7 mg/m ³ Group: Consumer Route of exposure: Long term (repeated) – Oral – Systemic effect Value: 0,1 mg/kg bw/d Group: Consumer Route of exposure: Long term (repeated) – Inhalation – Systemic effect Value: 4,57 mg/m ³ Group: Consumer Route of exposure: Long term (repeated) – Inhalation – Local effect Value: 0,36 mg/m ³ Group: Worker Route of exposure: Short term (acute) – Inhalation – Local effect Value: 2 mg/m ³ Group: Worker Route of exposure: Long term (repeated) – Inhalation – Local effect Value: 1 mg/m ³
	Data lacking.

8.2. Exposure controls

Recommended monitoring procedures	Not known.
Limitation of exposure on workplace	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.

Safety signs



Eye / face protection

Eye protection	Use eye protection. (EN 166).
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Hand protection

Hand protection	Use protective gloves made of: Butyl rubber. Neoprene. Nitrile.
Hand protection comments	Breakthrough time for nitrile rubber, neoprene and butyl rubber is approx. 3 hours. The recommendation is a qualified estimate based on knowledge of the components. Elastic gloves stretch when used as glove thickness and thus the breakthrough time reduced. The EN 374-3 standard test is performed at 23°C, but the practical temperature of the glove is approx. 35°C.

The breakthrough time of the different glove guides, is therefor reduced by a factor 3.

Skin protection

Skin protection (except hands) Wear apron or protective clothing in case of contact. Wear rubber footwear.

Respiratory protection

Respiratory protection Respiratory protection is not required for normal use.

Thermal hazards

Thermal hazards 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	Colourless to pale yellow.
Odour	Slightly pungent odour.
Odour limit	Comments: No data recorded.
pH	Status: In delivery state Value: < 1,0 Status: In aqueous solution Value: ~ 1,0 Comments: 2,0%
Melting point / melting range	Comments: No data recorded.
Boiling point / boiling range	Comments: No data recorded.
Flash point	Comments: Not relevant.
Evaporation rate	Comments: Not relevant.
Flammability (solid, gas)	Not relevant.
Explosion limit	Comments: Not relevant.
Vapour pressure	Comments: No data recorded.
Vapour density	Comments: No data recorded.
Bulk density	Value: ~ 1,25 kg/l
Solubility description	Completely soluble in water.
Partition coefficient: n-octanol/water	Comments: No data recorded.
Spontaneous combustability	Comments: Not relevant.
Decomposition temperature	Comments: Not relevant.
Viscosity	Value: < 50 mPa s
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.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability

Stable under normal temperature conditions and recommended use.

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).

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.

10.5. Incompatible materials

Materials to avoid

Alkali-sensitive metals such as aluminium, tin, lead and zinc and alloys with these metals.

10.6. Hazardous decomposition products

Hazardous decomposition products

In case of fire, toxic gases (CO, CO₂, NO_x) may be formed.

Other information

Other Information

Undiluted, the product may be corrosive to metals.
When used in the recommended dosages, contact time and temperature, the product is compatible with acid-proof stainless steels.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Substance

Phosphoric acid

Acute toxicity

Type of toxicity: Acute**Effect Tested:** LD50**Route of exposure:** Oral**Value:** 300-2000 mg/kg**Animal test species:** Rat**Test reference:** OECD 423**Type of toxicity:** Acute**Effect Tested:** LD50**Route of exposure:** Dermal**Value:** 2740 mg/kg**Animal test species:** Rabbit**Comments:** Supplier MSDS**Type of toxicity:** Acute

	Effect Tested: LC50 Route of exposure: Inhalation. Duration: 1h Value: 3846 mg/l Animal test species: Rat Comments: Supplier MSDS
Substance	Citric acid, monohydrate
Acute toxicity	Type of toxicity: Acute Effect Tested: LD50 Route of exposure: Oral Value: 3000 mg/kg Animal test species: Rat Type of toxicity: Acute Effect Tested: LD50 Route of exposure: Oral Value: 5400 mg/kg Animal test species: Mice
Other toxicological data	Toxicological tests on the product has not been performed.

Other information regarding health hazards

General	This substance is corrosive.
Inhalation	Inhalation may cause: Serious damage to the lining of nose, throat and lungs.
Skin contact	Strongly corrosive. May cause deep tissue damage.
Eye contact	Strongly corrosive. Causes severe burns and serious eye damage. Immediate first aid is imperative. Contact with concentrated chemical may very rapidly cause severe eye damage, possibly loss of sight.
Ingestion	Strongly corrosive. Even small amounts may be fatal. Symptoms are severe burning pains in mouth, throat and stomach. May cause burns in mucous membranes, throat, oesophagus and stomach.
Assessment of acute toxicity classification	Inconclusive data.
Sensitisation	No evidence for respiratory nor skin sensitization.
Mutagenicity	No evidence for germ cell mutagenicity.
Carcinogenicity	No evidence for carcinogenicity.
Reproductive toxicity	No evidence for reproductive toxicity.
STOT-single exposure	No evidence for STOT-single exposure.
STOT-repeated exposure	No evidence for STOT-repeated exposure.
Aspiration hazard	No evidence for aspiration hazard.

Symptoms of Exposure

Symptoms of overexposure	No specific symptoms noted.
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SECTION 12: Ecological information

12.1. Toxicity

Substance	Nitric Acid
Acute aquatic, fish	Value: > 100 mg/l Test duration: 96h Species: Fish

Substance	Method: LC50 Phosphoric acid
Acute aquatic, fish	Value: 98 – 106 mg/l Test duration: 96h Species: Lepomis macrochirus Test reference: Supplier MSDS
Substance	Citric acid, monohydrate
Acute aquatic, fish	Value: 440-760 mg/L Test duration: 96h Species: Leuciscus idus Method: LC50
Substance	Phosphoric acid
Acute aquatic, algae	Value: > 100 mg/l Test duration: 72h Test reference: Supplier MSDS
Substance	Citric acid, monohydrate
Acute aquatic, algae	Value: 640 mg/L Test duration: 168h Species: Scenedesmus quadricauda Method: EC0
Substance	Nitric Acid
Acute aquatic, Daphnia	Value: > 150 mg/l Test duration: 48h Method: LC50
Substance	Phosphoric acid
Acute aquatic, Daphnia	Value: > 100 mg/l Test duration: 48h Species: Daphnia Magna Test reference: Supplier MSDS
Substance	Citric acid, monohydrate
Acute aquatic, Daphnia	Value: 120 mg/L Test duration: 72h Species: Daphnia Magna Method: EC100
Ecotoxicity	Large amounts of the product may affect the acidity (pH-factor) in water with possible risk of harmful effects to aquatic organisms. Contains nitric acid which when discharged will increase the content of nitrates in the aquatic environment.
Aquatic, comments	No data available for the product.

12.2. Persistence and degradability

Substance	Citric acid, monohydrate
Biodegradability	Value: 97% Method: OECD 301B Test period: 28d
Persistence and degradability	The product is easily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential	The product does not contain any substances expected to be 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

PBT assessment results	Not Classified as PBT/vPvB by current EU criteria.
Substance	Nitric Acid
PBT assessment results	Not Classified as PBT/vPvB by current EU criteria.
Substance	Phosphoric acid
PBT assessment results	Not Classified as PBT/vPvB by current EU criteria.
Substance	Citric acid, monohydrate
PBT assessment results	Not Classified as PBT/vPvB by current EU criteria.

12.6. Other adverse effects

Environmental details, summation	For this product no classification is required for environmental hazards.
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Specify the appropriate methods of disposal	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. -
Product classified as hazardous waste	Yes
Packaging classified as hazardous waste	Yes
EWC waste code	EWC waste code: 0706 wastes from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics
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

14.1. UN number

ADR / RID / ADN	3264
IMDG	3264
ICAO/IATA	3264

14.2. UN proper shipping name

ADR / RID / ADN	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
Technical name / Danger releasing substance	(Nitric acid, phosphoric acid)
ADR/RID/ADN	
IMDG	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
Technical name / Danger releasing substance IMDG	(Nitric acid, phosphoric acid)
ICAO/IATA	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.

Technical name / Danger (Nitric acid, phosphoric acid)
releasing substance ICAO

14.3. Transport hazard class(es)

ADR / RID / ADN	8
IMDG	8
ICAO/IATA	8

14.4. Packing group

ADR / RID / ADN	II
IMDG	II
ICAO/IATA	II

14.5. Environmental hazards

14.6. Special precautions for user

Special safety precautions for user Not relevant.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Additional information.

Additional information.	Not relevant.
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ADR / RID - Other information

Hazard no.	80
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IMDG / ICAO / IATA 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.
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Legislation and regulations	The Management of Health and Safety at Work Regulations 1999 (SI 1999 No. 3242). 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. 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. The List of Wastes (England) (Amendment) Regulations 2005. (SI 2005 No. 895).
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EH40/2005, Workplace exposure limits 2005, with amendments.

15.2. Chemical safety assessment

Chemical safety assessment No
performed

SECTION 16: Other information

List of relevant H-phrases (Section 2 and 3).	H272 May intensify fire; oxidiser. H290 May be corrosive to metals. H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage. H318 Causes Serious eye damage. H319 Causes serious eye irritation.
Classification according to Regulation (EC) No 1272/2008 [CLP / GHS]	Met. Corr. 1; H290 Skin Corr 1A; H314 Eye Dam. 1; H318
Training advice	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: 0,3-2% H314 Causes severe skin burns and eye damage.
Information which has been added, deleted or revised	Change to Sections: 1, 16
Prepared by	ALM