

1. Product and Company Identification

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Product Name DI METHYL FORMAMIDE
Part Number RXSOL-19-1142-050

Company Details:

RX MARINE INTERNATIONAL
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2. Composition / Information on ingredients

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Chemical Name	CAS	EC number	Weight	Formula
Dimethylformamide	68-12-2	200-679-5	350 °C	
Vapour pressure	3,77 hPa at 20 °C			
Density	0,944 g/mL			
Relative Vapour Density	2,52 - (Air = 1.0)			
Freezing point	No data available			
Specific Gravity	No data available			
Partition coefficient	log Pow: -0,85 at 25 °C			
Explosive properties	No data available			
Solubility	1.000 g/l at 20 °C			
Ignition temperature	No information available.			
Particle characteristics	No data available			

10. Stability and reactivity

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Reactivity	Vapor/air-mixtures are explosive at intense warming.
Stability	The product is chemically stable under standard ambient conditions (room temperature) .
Possibility of hazardous reactions	Violent reactions possible with: Alkali metals halogens halides Reducing agents triethylaluminium nitrates metallic oxides nonmetallic oxides Halogenated hydrocarbon Isocyanates sodium Sodium borohydride hydrides Oxidizing agents Oxides of phosphorus Tin Strong oxidizing agents rubber Copper Copper alloys various metals A risk of explosion and/or of toxic gas formation exists with the following substances: azides Bromine Chlorine chromium(VI) oxide potassium permanganate triethylaluminium chlorates Halogenated hydrocarbon with Iron
Conditions to avoid	Heating.
Incompatible materials	Various plastics, Copper, Copper alloys, Tin, Strong oxidizing agents
Hazardous Polymerization	In the event of fire: see section 5

11. Toxicological information

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Acute toxicity	LD50 Oral - Rat - male and female - 3.010 mg/kg (OECD Test Guideline 401) Acute toxicity estimate Inhalation - 4 h - 11,1 mg/l - vapor (Expert judgment) Remarks: (Regulation (EC) No 1272/2008, Annex VI) LD50 Dermal - Rabbit - 1.500 mg/kg Remarks: (Regulation (EC) No 1272/2008, Annex VI) (IUCLID)
Skin corrosion/irritation	Skin - Rabbit Result: No skin irritation - 20 h Remarks: (ECHA)
Serious eye damage/eye irritation	Eyes - Rabbit Result: Irritating to eyes. (OECD Test Guideline 405) Remarks: (Regulation (EC) No 1272/2008, Annex VI)
Respiratory or skin sensitization	Local lymph node assay (LLNA) - Mouse Result: negative (OECD Test Guideline 406)
Toxicity to Animal	WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE Acute oral toxicity (LD50): 689 mg/kg [Rat].
Toxic Effects on Human	May cause damage to the following organs: upper respiratory tract. Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant, sensitizer), of ingestion, of inhalation (lung irritant, lung sensitizer).
Carcinogenicity	Carcinogenicity - No carcinogenic properties suspected. (IUCLID)
Germ cell mutagenicity	Test Type: sister chromatid exchange assay Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Result: negative Remarks: (ECHA) Test Type: unscheduled DNA synthesis assay Test system: human diploid fibroblasts Metabolic activation: with and without metabolic activation Result: negative Remarks: (ECHA) Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Result: negative Remarks: (ECHA) Test Type: Micronucleus test Species: Mouse Cell type: Bone marrow Application Route: Intraperitoneal injection Result: negative Remarks: (ECHA) Test Type: dominant lethal test Species: Rat Application Route: Inhalation Result: negative Remarks: (ECHA) Test Type: dominant lethal test Species: Mouse Application Route: Intraperitoneal Result: negative Remarks: (ECHA).
Reproductive toxicity	May damage the unborn child.
Specific target organ toxicity - single exposure	No data available
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects: Skin: Causes skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Eyes: Causes eye irritation. Ingestion: Causes gastrointestinal (digestive) tract irritation with nausea, vomiting, and diarrhea. May be harmful if swallowed. Inhalation: Causes respiratory tract irritation. May cause chemical pneumonitis and pulmonary edema, inflammation, edema of bronchi and larynx. Chronic Potential Health Effects: Repeated or prolonged skin exposure may cause allergic reactions in sensitive individuals. Repeated or prolonged exposure by inhalation may affect respiration and metabolism.
Additional Information	RTECS: AF3675000 Gastrointestinal disturbance To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. After uptake of large quantities: muscular symptoms agitation Convulsions Headache Tremors Nausea psychoses
Endocrine disrupting properties	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. Repeated dose toxicity - Rat - male and female - Oral - 28 d - NOAEL (No observed adverse effect level) - 238 mg/kg - LOAEL (Lowest observed adverse effect level) - 475 mg/kg Remarks: Subacute toxicity RTECS: LQ2100000 Vomiting Diarrhea Abdominal pain Warning: intolerance for alcohol can occur up to 4 days after dimethylformamide exposure. N,N-dimethylformamide is considered to be a potent liver toxin. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. After absorption: Headache Dizziness Drowsiness Damage to: Kidney Liver This substance should be handled with particular care.

Persistence and degradability	Biodegradability aerobic - Exposure time 21 d Result: 100 % - Readily biodegradable. (OECD Test Guideline 301E) Biochemical Oxygen Demand (BOD) 900 mg/g Remarks: (Lit.) Theoretical oxygen demand 1.863 mg/g Remarks: (Lit.)
Bioaccumulative potential	Bioaccumulation Cyprinus carpio (Carp) - 56 d at 25 °C - 0,002 mg/l(N,N-dimethylformamide) Bioconcentration factor (BCF): 0,3 - 1,2 (OECD Test Guideline 305C) Remarks: Does not significantly accumulate in organisms.
Toxicity to fish	Flow-through test LC50 - Lepomis macrochirus (Bluegill sunfish) - 7.100 mg/l - 96 h (US-EPA)
Toxicity to daphnia and other aquatic invertebrates	Static test EC50 - Daphnia magna (Water flea) - 13.100 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	Static test ErC50 - Desmodesmus subspicatus (green algae) - > 1.000 mg/l - 72 h (DIN 38412)
Products Biodegradation	The methods for determining the biological degradability are not applicable to inorganic substances.
Mobility in soil	No Information available
Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Endocrine disrupting properties	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
Other adverse effects	Stability in water - ca.50 d Remarks: reaction with hydroxyl radicals(calculated)(Lit.)

13. Disposal considerations

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Disposal methods	The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.
Contaminated packaging	Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.
Waste treatment Method	See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

14. Transport information

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UN number	ADR/RID: 2265 IMDG: 2265 IATA: 2265
UN proper shipping name	ADR/RID:N,N-Dimethylformamide IMDG:N,N-Dimethylformamide IATA:N,N-Dimethylformamide
Transport hazard class(es)	ADR/RID: 3 IMDG: 3 IATA: 3
Packaging group	ADR/RID: III IMDG: III IATA: III
Environmental hazards	ADR/RID: No IMDG: No IATA: No
Special precautions for user	Tunnel restriction code : (C/E)
Further information	Not classified as dangerous in the meaning of transport regulations.

15. Regulatory information

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Inventory status	Components are on the following inventories: Polymaleic acid: - US
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TSCA, Canadian DSL, EU EINECS, Australian AICS, Korean, Philippine PICCS and Chinese Xi irritant R 36/38 Irritant to eyes & skin R 41 Risk of serious damage to eyes S24/25 Avoid contact with skin and eyes S26/28 In case of contact eyes & skin, rinse with plenty water and seek medical advice Section 312/313: Not listed. Not listed under California proposition 65.

Safety, health and environmental regulations/legislation specific for the substance or mixture	This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006
Safety, health and environmental regulations specific for the product in question	European Inventory of Existing Commercial Chemical Substances (EINECS) -Listed.EC Inventory Listed. United States Toxic Substances Control Act (TSCA) Inventory- Listed. China Catalog of Hazardous chemicals 2015 Not- Listed. New Zealand Inventory of Chemicals (NZIoC)Listed. PICCS -Listed. Vietnam National Chemical Inventory -Listed. IECSC Listed. Korea Existing Chemicals List (KECL) -Listed.
Authorisations and/or restrictions on use	REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : N,N-dimethylformamide REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : N,N-dimethylformamide
National legislation	Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. : FLAMMABLE LIQUIDS
Other regulations	Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable. Take note of Dir 94/33/EC on the protection of young people at work.
Chemical Safety Assessment	A Chemical Safety Assessment has been carried out for this substance.

16. Other information

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Other Information

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