



SAFETY DATA SHEET

Issue Date No data available

Revision Date 05-May-2015

REVISION NUMBER: 4

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

Product identifier

Product Name DOLPHON CR-1034H B

Other means of identification

Product Code CR-1034H B

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use No information available.

Uses advised against No information available

Details of the supplier of the safety data sheet

MANUFACTURED BY:

JOHN C. DOLPH, a Von Roll Company

320 New Road, MONMOUTH JUNCTION, NJ 08852

BUSINESS: (732) 329-2333

EMERGENCY: (800) 794-6277

Emergency telephone number

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

ACUTE TOXICITY - ORAL	Category 4
ACUTE TOXICITY - DERMAL	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Corrosive to metals	Category 1

Label elements

Emergency Overview

Danger

Hazard statements

Harmful if swallowed

Harmful in contact with skin

Causes severe skin burns and eye damage

May cause an allergic skin reaction

May be corrosive to metals

**Appearance** No information available**PHYSICAL STATE** Liquid**ODOR** No information available**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Wear protective gloves/protective clothing/eye protection/face protection
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Contaminated work clothing should not be allowed out of the workplace
 Keep only in original container

Precautionary Statements - Response

Specific measures (see .? on this label)
 Specific treatment (see .? on this label)
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 Immediately call a POISON CENTER or doctor/physician
 IF ON SKIN: Wash with plenty of soap and water
 Call a POISON CENTER or doctor/physician if you feel unwell
 Wash contaminated clothing before reuse
 If skin irritation or rash occurs: Get medical advice/attention
 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
 Rinse mouth
 Absorb spillage to prevent material damage

Precautionary Statements - Storage

Store in corrosive resistant/ .? container with a resistant inner liner

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)**Other Information**

- Very toxic to aquatic life with long lasting effects
- Toxic to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS PRODUCT COMPOSITION/CAS NUMBER	CAS No.	APPROX. WEIGHT PERCENT	TRADE SECRET
Tetraethylene Pentamine 112-57-2	112-57-2	60 - 100	
Triethylene Tetramine 112-24-3	112-24-3	1 - 5	
Pentaethylene Hexamine 4067-16-7	4067-16-7	1 - 5	

4. FIRST AID MEASURES

First aid measures

General advice	THIS IS A CORROSIVE MATERIAL. Remove contaminated clothing and shoes. If symptoms persist, call a physician. Repeated contact may cause allergic reactions in very susceptible persons.
EYE CONTACT	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.
SKIN CONTACT	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician. In the case of skin irritation or allergic reactions see a physician.
Inhalation	If symptoms persist, call a physician. If fumes from reactions are inhaled, move to fresh air immediately. Artificial respiration and/or oxygen may be necessary. May cause allergic respiratory reaction.
Ingestion	Never give anything by mouth to an unconscious person. Immediate medical attention is required. Do not induce vomiting without medical advice. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE.
Self-protection of the first aider	Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians May cause sensitization by inhalation and skin contact. Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media CAUTION: Use of water spray when fighting fire may be inefficient.

Special Hazard

None known.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge Yes.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas.

For emergency responders In the case of vapor formation use a respirator with an approved filter. Use personal protective equipment as required.

Environmental precautions

Environmental precautions See Section 12 for additional ecological information. Do not allow into any sewer, on the ground or into any body of water. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Prevent entry into waterways, sewers, basements or confined areas. Avoid release to the environment. Dispose of contents/container to an approved waste disposal plant.

Methods and material for containment and cleaning up

Methods for containment Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling THIS IS A REACTIVE MATERIAL. Handle in accordance with good industrial hygiene and safety practice. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity).

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Keep in a dry, cool and well-ventilated place.

Incompatible materials Incompatible with strong acids and bases. Incompatible with oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

HAZARDOUS PRODUCT COMPOSITION/CAS NUMBER	ACGIH TLV	OSHA PEL-TWA	NIOSH IDLH
Tetraethylene Pentamine 112-57-2	-	-	-
Triethylene Tetramine 112-24-3	-	-	-
Pentaethylene Hexamine 4067-16-7	-	-	-

Appropriate engineering controls

ENGINEERING CONTROLS: Exhaust ventilation.
Showers.
Eyewash stations.
Use in a well ventilated area.
Localized ventilation should be used to control dust levels.

Individual protection measures, such as personal protective equipment

Von Roll recommends evaluation and selection of appropriate engineering controls (such as ventilation and eyewash/safety shower) as well as appropriate personal protective equipment (such as respiratory protection, protective gloves, eye protection) for safely handling this material. The following guidelines should be considered in this process.

EYE PROTECTION:	Safety glasses with side shields (designed to ANSI standards). Goggles may be required based on application and processing of material. Splash Goggles. Face shield.
GLOVES:	Rubber gloves.
VENTILATION:	Use only in well ventilated area. Localized mechanical ventilation. General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits during the use of this product.
RESPIRATORY PROTECTION:	Use approved NIOSH respiratory protection if TLV exceeded, or over exposure is likely. Use an approved NIOSH organic vapor respirator below the TLV. If TLV is exceeded or overexposure is likely, use positive pressure or self contained breathing apparatus.
OTHER PERSONAL PROTECTION DATA:	Wear eye protection and protective clothing.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

PHYSICAL STATE	Liquid	ODOR:	STRONG AMMONIA LIKE ODOR
Appearance	No information available	ODOR THRESHOLD (PPM):	UNKNOWN
DESCRIPTION:	YELLOW		
PROPERTIES	Values	Remarks • Method	
pH	No information available		
Melting point/freezing point	-40 °C / -40 °F		
Boiling point / boiling range	340 °C / 644 °F		
Flash point	No information available		
EVAPORATION RATE	No information available		
Flammability (solid, gas)	No information available		
Flammability Limit in Air			
Upper flammability limit:	No information available		
Lower flammability limit:	No information available		
VAPOR PRESSURE	No information available		
VAPOR DENSITY	No information available		
SPECIFIC GRAVITY	0.90		
Water solubility	No information available		
Solubility in other solvents	No information available		
Partition coefficient	No information available		
Autoignition temperature	No information available		
Decomposition temperature	No information available		
Kinematic viscosity	No information available		
Dynamic viscosity	No information available		
Explosive properties	No information available		
Oxidizing properties	No information available		
Other Information			
Softening point	No information available		
VOC (EPA METH.24) (G/L):	Unknown		
DENSITY	No information available		
Bulk density	No information available		

10. STABILITY AND REACTIVITY

REACTIVITY THIS IS A REACTIVE MATERIAL.

No data available

Chemical stability

Stable under recommended storage conditions. Polymerization can occur. Hazardous polymerization may occur.

Possibility of Hazardous Reactions

Reacts with many compounds.

Hazardous polymerization

Polymerization can occur. Hazardous polymerization may occur.

CONDITIONS TO AVOID

Keep away from any contact with water. Avoid any source of ignition. Incompatible materials. Product generates flammable gas on contact with acids, bases or oxidizing materials. Avoid contact with heat, sparks, open flame, and static discharge.

Incompatible materials

Keep away from all sources of heat. Exposure to moist air or water. Oxides. Oxidizing or reducing agents. Avoid contact with acidic, basic or oxidizing agents. Incompatible materials such as acids, alkalies, heavy metals, and reducing agents will result in hazardous decomposition.

Hazardous Decomposition Products

Carbon monoxide. Carbon dioxide. Toxic fumes. Oxides of nitrogen.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

PRODUCT INFORMATION

No data available

Inhalation

No data available.

EYE CONTACT

No data available.

SKIN CONTACT

No data available.

Ingestion

No data available.

HAZARDOUS PRODUCT COMPOSITION/CAS NUMBER	Oral LD50	Dermal LD50	Inhalation LC50
Tetraethylene Pentamine 112-57-2	= 2100 mg/kg (Rat)	= 660 µL/kg (Rabbit)	-
Triethylene Tetramine 112-24-3	= 2500 mg/kg (Rat)	= 550 mg/kg (Rabbit)	-
Pentaethylene Hexamine 4067-16-7	= 1600 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms

No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization

No information available.

Germ cell mutagenicity

No information available.

Carcinogenicity

No information available.

HAZARDOUS PRODUCT COMPOSITION/CAS NUMBER	ACGIH	IARC	NTP	OSHA

Tetraethylene Pentamine 112-57-2	-	-	-	-
Triethylene Tetramine 112-24-3	-	-	-	-
Pentaethylene Hexamine 4067-16-7	-	-	-	-

Reproductive toxicity No information available.
STOT - single exposure No information available.
Aspiration hazard No information available.

Numerical measures of toxicity - PRODUCT INFORMATION

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 504 mg/kg
ATEmix (dermal) 1100 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment

HAZARDOUS PRODUCT COMPOSITION/CAS NUMBER	Toxicity to Algae	Toxicity to fish	Crustacea
Tetraethylene Pentamine 112-57-2	2.1: 72 h Pseudokirchneriella subcapitata mg/L EC50	420: 96 h Poecilia reticulata mg/L LC50 static	24.1: 48 h Daphnia magna mg/L EC50
Triethylene Tetramine 112-24-3	2.5: 72 h Desmodesmus subspicatus mg/L EC50 20: 72 h Pseudokirchneriella subcapitata mg/L EC50 3.7: 96 h Pseudokirchneriella subcapitata mg/L EC50	495: 96 h Pimephales promelas mg/L LC50 570: 96 h Poecilia reticulata mg/L LC50 semi-static	31.1: 48 h Daphnia magna mg/L EC50
Pentaethylene Hexamine 4067-16-7	-	-	-

Persistence and degradability

No information available.

Bioaccumulation

No information available.

HAZARDOUS PRODUCT COMPOSITION/CAS NUMBER	Partition coefficient
Tetraethylene Pentamine 112-57-2	<1
Triethylene Tetramine 112-24-3	-1.4
Pentaethylene Hexamine 4067-16-7	-

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

EPA HAZARDOUS WASTE DISPOSAL CODE: D002, D003,

HAZARDOUS PRODUCT COMPOSITION/CAS NUMBER	RCRA Classification:	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Tetraethylene Pentamine 112-57-2	-	-	-	-
Triethylene Tetramine 112-24-3	-	-	-	-
Pentaethylene Hexamine 4067-16-7	-	-	-	-

HAZARDOUS PRODUCT COMPOSITION/CAS NUMBER	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Tetraethylene Pentamine 112-57-2	-	-	-	-
Triethylene Tetramine 112-24-3	-	-	-	-
Pentaethylene Hexamine 4067-16-7	-	-	-	-

HAZARDOUS PRODUCT COMPOSITION/CAS NUMBER	California Hazardous Waste Status
Tetraethylene Pentamine 112-57-2	-
Triethylene Tetramine 112-24-3	-
Pentaethylene Hexamine 4067-16-7	-

14. TRANSPORT INFORMATION

DOT SHIPPING NAME: Tetraethylenepentamine

DOT HAZARD CLASS: 8

DOT PACKING GROUP: PG III

DOT LABEL(S): CORROSIVE

UN/NA NUMBER: UN2320

PLACARDS: CORROSIVE

ICAO/IATA: 8 , III

MARINE POLLUTANT: NONE

NMFC CLASSIFICATION: CLASS 65

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

ACUTE HEALTH HAZARD	Yes
FIRE HAZARD	No
Sudden release of pressure hazard	No
REACTIVE HAZARD	Yes

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

HAZARDOUS PRODUCT COMPOSITION/CAS NUMBER	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Tetraethylene Pentamine 112-57-2	-	-	-	-
Triethylene Tetramine 112-24-3	-	-	-	-
Pentaethylene Hexamine 4067-16-7	-	-	-	-

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

HAZARDOUS PRODUCT COMPOSITION/CAS NUMBER	Hazardous Substances RQs	CERCLA/SARA RQ
Tetraethylene Pentamine 112-57-2	-	-
Triethylene Tetramine 112-24-3	-	-
Pentaethylene Hexamine 4067-16-7	-	-

US State Regulations**CALIFORNIA PROPOSITION 65**

HAZARDOUS PRODUCT COMPOSITION/CAS NUMBER	CALIFORNIA PROPOSITION 65
Tetraethylene Pentamine 112-57-2	-
Triethylene Tetramine 112-24-3	-
Pentaethylene Hexamine 4067-16-7	-

U.S. State Right-to-Know Regulations

HAZARDOUS PRODUCT COMPOSITION/CAS NUMBER	New Jersey Right-to-Know List:	MA Right to Know Law:	Pennsylvania Right to Know List
Tetraethylene Pentamine 112-57-2	X	X	X
Triethylene Tetramine 112-24-3	X	X	X

Pentaethylene Hexamine 4067-16-7	-	-	-
-------------------------------------	---	---	---

U.S. EPA Label Information**EPA Pesticide Registration Number** Not Applicable**16. OTHER INFORMATION**

NFPA RATING: HEALTH 3 , FLAMMABILITY 1 , INSTABILITY 1
HMIS CLASSIFICATION: HEALTH *3 , FLAMMABILITY 1 , PHYSICAL HAZARD 1

Prepared By Santino M. Cardella
Revision Date 05-May-2015
Revision Note

No information available

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

*****END OF MSDS*****