



# Material Safety Data Sheet

The Dow Chemical Company

Product Name: CORROSION INHIBITOR CONCENTRATE NN

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The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

## 1. Product and Company Identification

Product Name  
CORROSION INHIBITOR CONCENTRATE NN

### COMPANY IDENTIFICATION

The Dow Chemical Company  
2030 Willard H. Dow Center  
Midland, MI 48674  
USA

Customer Information Number: 800-258-2436

### EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 989-636-4400  
Local Emergency Contact: 989-636-4400

## 2. Hazards Identification

### Emergency Overview

Color: Brown  
Physical State: Liquid  
Odor: Mild  
Hazards of product:

No significant immediate hazards for emergency response are known.

### Potential Health Effects

**Eye Contact:** May cause slight temporary eye irritation. Corneal injury is unlikely.  
**Skin Contact:** Brief contact may cause slight skin irritation with local redness. May cause drying and flaking of the skin.  
**Skin Absorption:** Prolonged skin contact is unlikely to result in absorption of harmful amounts.  
**Inhalation:** Vapors are primarily water; single exposure is not likely to be hazardous.  
**Ingestion:** Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

**Effects of Repeated Exposure:** For the minor component(s): Contains component(s) which have been reported to cause effects on the following organs in humans: Gastrointestinal tract, Kidney. In humans, symptoms may include: Nausea and/or vomiting.

**Birth Defects/Developmental Effects:** For the minor component(s): Contains component(s) which screening studies in animals suggest that this material has a potential to affect fetal development.

**Reproductive Effects:** For the minor component(s): Contains component(s) which have been shown to interfere with reproduction in animal studies.

### 3. Composition Information

Component	CAS #	Amount
Water	7732-18-5	> 86.0 - < 88.0 %
Carboxylic acid 1	Trade secret	> 3.0 - < 7.0 %
Carboxylic acid 2	Trade secret	> 3.0 - < 7.0 %
Metal hydroxide	Trade secret	> 1.0 - < 4.0 %
Additive	Trade secret	< 1.0 %

### 4. First-aid measures

**Eye Contact:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

**Skin Contact:** Wash skin with plenty of water.

**Inhalation:** No emergency medical treatment necessary.

**Ingestion:** No emergency medical treatment necessary.

**Notes to Physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

**Medical Conditions Aggravated by Exposure:** Skin contact may aggravate preexisting dermatitis.

### 5. Fire Fighting Measures

**Extinguishing Media:** To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

**Special Protective Equipment for Firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

**Unusual Fire and Explosion Hazards:** This material will not burn until the water has evaporated. Residue can burn.

**Hazardous Combustion Products:** Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides, Carbon monoxide, Carbon dioxide.

### 6. Accidental Release Measures

**Steps to be Taken if Material is Released or Spilled:** Contain spilled material if possible. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

**Personal Precautions:** Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling, for additional precautionary measures.

**Environmental Precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

## 7. Handling and Storage

### Handling

**General Handling:** No special precautions required. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

### Storage

Store in the following material(s): 316 stainless steel. Carbon steel. Glass-lined container. Polypropylene. Polyethylene-lined container. Stainless steel. Teflon. This material may soften and lift certain paint and surface coatings. Use product promptly after opening. Store in original unopened container. Unopened containers of material stored beyond the recommended shelf life should be retested against the sales specifications before use. Additional storage and handling information on this product may be obtained by calling your Dow sales or customer service contact.

**Shelf life: Use within**  
24 Months

## 8. Exposure Controls / Personal Protection

### Exposure Limits

Component	List	Type	Value
Metal hydroxide	ACGIH	Ceiling	2 mg/m <sup>3</sup>
	OSHA Table Z-1	PEL	2 mg/m <sup>3</sup>

### Personal Protection

**Eye/Face Protection:** Use safety glasses.

**Skin Protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

**Hand protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Neoprene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Avoid gloves made of: Polyvinyl alcohol ("PVA").  
NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Respiratory Protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge.

**Ingestion:** Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

**Engineering Controls**

**Ventilation:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.

## 9. Physical and Chemical Properties

Physical State	Liquid
Color	Brown
Odor	Mild
Flash Point - Closed Cup	ASTM D93 None
Flash Point - Open Cup	ASTM D92 None
Flammable Limits In Air	<b>Lower:</b> No test data available <b>Upper:</b> No test data available
Autoignition Temperature	Not applicable
Vapor Pressure	14 mmHg <i>Calculated</i>
Boiling Point (760 mmHg)	101.7 °C (215.1 °F) <i>Calculated</i>
Vapor Density (air = 1)	0.71 <i>Calculated</i>
Specific Gravity (H <sub>2</sub> O = 1)	1.062 20 °C/20 °C <i>Calculated</i>
Freezing Point	See Pour Point
Melting Point	Not applicable to liquids
Solubility in Water (by weight)	100 % @ 20 °C <i>Measured</i>
pH	10.5 - 11.5 ASTM E70
Decomposition Temperature	No test data available
Kinematic Viscosity	No test data available
Pour point	-2.4 °C (27.7 °F) ASTM D97
Volatile Organic Compounds	0.0 g/l EPA Method No. 24

## 10. Stability and Reactivity

**Stability/Instability**

Stable.

**Conditions to Avoid:** Some components of this product can decompose at elevated temperatures.

**Incompatible Materials:** None known.

**Hazardous Polymerization**

Will not occur.

**Thermal Decomposition**

Decomposition products depend upon temperature, air supply and the presence of other materials.

## 11. Toxicological Information

**Acute Toxicity****Ingestion**

LD50, Rat, male and female > 5,000 mg/kg

**Skin Absorption**

LD50, Rabbit, male and female 16,992 mg/kg

**Repeated Dose Toxicity**

For the minor component(s): Contains component(s) which have been reported to cause effects on the following organs in humans: Gastrointestinal tract. Kidney. In humans, symptoms may include: Nausea and/or vomiting.

#### Developmental Toxicity

For the minor component(s): Contains component(s) which screening studies in animals suggest that this material has a potential to affect fetal development.

#### Reproductive Toxicity

For the minor component(s): Contains component(s) which have been shown to interfere with reproduction in animal studies.

#### Genetic Toxicology

Contains component(s) which were negative in some in vitro genetic toxicity studies and positive in others.

## 12. Ecological Information

### ENVIRONMENTAL FATE

Data for Component: **Carboxylic acid 1**

#### Movement & Partitioning

Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Potential for mobility in soil is very high (Koc between 0 and 50). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

**Henry's Law Constant (H):** 3.79E-10 atm\*m3/mole; 25 °C Estimated

**Partition coefficient, n-octanol/water (log Pow):** 1.83 Measured

**Partition coefficient, soil organic carbon/water (Koc):** 16.71 Estimated

#### Persistence and Degradability

Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

#### OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method
< 12 %	14 d	OECD 301C Test

Data for Component: **Carboxylic acid 2**

#### Movement & Partitioning

Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Potential for mobility in soil is very high (Koc between 0 and 50). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

**Henry's Law Constant (H):** 7.34e-09 atm\*m3/mole; 25 °C

**Partition coefficient, n-octanol/water (log Pow):** 2.26 Measured

**Partition coefficient, soil organic carbon/water (Koc):** 24 Estimated

#### Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

#### Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
13.00e-12 cm3/s	0.823 d	Estimated

#### OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method
88.1 %	14 d	OECD 301C Test

**Theoretical Oxygen Demand:** 1.62 mg/mg

Data for Component: **Metal hydroxide**

#### Movement & Partitioning

No bioconcentration is expected because of the relatively high water solubility. Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient, n-octanol/water (log Pow):** -3.88 Estimated

**Partition coefficient, soil organic carbon/water (Koc):** 14 Estimated

**Persistence and Degradability**

Biodegradation is not applicable.

**ECOTOXICITY**

Material is practically non-toxic to aquatic invertebrates on an acute basis (LC50/EC50 &gt; 100 mg/L).

**Aquatic Invertebrate Acute Toxicity**

LC50, water flea Daphnia magna, 48 h: &gt; 5,000 mg/l

**Toxicity to Micro-organisms**

IC50; bacteria: &gt; 500 mg/l

**13. Disposal Considerations**

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

**14. Transport Information**

**DOT Non-Bulk**  
NOT REGULATED

**DOT Bulk**  
NOT REGULATED

**IMDG**  
NOT REGULATED

**ICAO/IATA**  
NOT REGULATED

*This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.*

**15. Regulatory Information****Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312**

Immediate (Acute) Health Hazard	No
Delayed (Chronic) Health Hazard	No
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313**

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

**Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:**

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Metal hydroxide	Trade secret	> 1.0 - < 4.0 %

**Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:**

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

**US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)**

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

**California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)**

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

**US. Toxic Substances Control Act**

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

**European Inventory of Existing Commercial Chemical Substances (EINECS)**

The components of this product are on the EINECS inventory or are exempt from inventory requirements.

**CEPA - Domestic Substances List (DSL)**

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

## 16. Other Information

**Hazard Rating System**

NFPA	Health	Fire	Reactivity
	1	0	0

**Recommended Uses and Restrictions**

Selection of the appropriate polyglycol product for a specific application requires knowledge of the fluid requirements of the application, awareness of the most important of these requirements, and a match-up with the properties of the various polyglycol materials. Polyglycol products can be formulated for use in numerous industry applications such as hydraulic fluids, quenchants, compressor and refrigeration lubricants, heat transfer fluids, machinery lubricants, solder assist fluids, metalworking lubricants, textile finishing, etc. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

**Revision**

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Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

*The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.*

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