



North Metal and Chemical Company

## 1. Company Identification:

**Product Name** : 2-PHOSPHONOBUTANE-1,2,4-TRICARBOXYLIC ACID.  
**Synonyms** : PBTC; PBTCA; Phosphonobutane Tricarboxylic Acid  
**Product Use** : Used as a scale inhibitor, deflocculant, sequestrant, and water stabilizer in cooling water systems  
**Manufactured for** : **NORTH Metal and Chemical Company**  
P.O. Box 1985 609 E. King St.  
York, PA USA 17405 York, PA USA 17405  
Tel: 717-845-8646 Fax: 717-846-7350  
Email: north@northmetal.net Website: www.northmetal.net

In Case of Emergency or Spill Call CHEMTREC (24 Hours): 1-800-424-9300

## 2. Hazard Identification:

### GHS Classification:

Skin Irritation (Category 2)  
Serious Eye Damage (Category 1)  
Corrosive to Metals (Category 1)

**Signal Word: Danger**

**Pictograms:**



### Hazard Statements:

**H290** : May be corrosive to metals.  
**H303** : May be harmful if swallowed.  
**H333** : May be harmful if inhaled  
**H315** : Causes skin irritation.  
**H318** : Causes serious eye damage.

### Precautionary Statements:

**P280** : Wear protective gloves (rubber/PVC)/protective clothing such as apron, boots and safety glasses with side shields.  
**P264** : Wash all affected body parts thoroughly after handling.  
**P273** : Avoid release to the environment.  
**P234** : Keep only in original packaging.  
**P305 + P351 + P338** : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor/physician.  
**P310** : Immediately call a POISON CENTER/doctor  
**P302 + P352** : IF ON SKIN: Wash with plenty of soap and water  
**P332 + P313** : If skin irritation or rash occurs: Get medical advice/attention..  
**P301 + 312** : IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
**P304 + P340** : IF INHALED: Remove person to fresh air and keep in position comfortable for breathing  
**P391 + P501** : Collect Spillage. Dispose of contents/container in accordance with local/state/federal regulations.  
**P406** : Store in corrosive resistant Glass, PVC, PP or PE container/in container with a resistant inner liner

### 3. Composition/Information on Ingredient:

**Chemical Name** : 2-Phosphonobutane-1,2,4-tricarboxylic acid; PBTC.  
**Chemical Family** : Organophosphates  
**Chemical Formula** :  $C_7H_{11}O_9P$  in  $H_2O$   
**EC Number:** : 253-733-5

Substance:	CAS Number:	Hazard	Compo. (%)
2-Phosphonobutane-1,2,4-tricarboxylic acid	37971-36-1	See Section 2	50 % min
Water	7732-18-5	-	49.9% max

### 4. First Aid Measures:

**Eyes** : Flush skin with running water for at least fifteen minutes. Remove any contact lenses. Get medical aid/attention immediately.

**Skin** : Remove contaminated clothing. Wash skin with plenty of running water and soap. Get medical attention/aid if irritation persists. Contaminated clothing should be thoroughly washed before reuse.

**Ingestion** : If the product is swallowed, first rinse mouth. Give small amount of water to drink. Call doctor/physician/poison center immediately. Do not induce vomiting. Never give anything by mouth to an unconscious person. If a person vomits, place him/her in recovery position so the vomit does not enter lungs.

**Inhalation** : If safe to do so, remove individual from further exposure. Keep warm and at rest. If breathing has ceased, give artificial respiration. Do not give mouth to mouth resuscitation. Get medical attention/consult a physician immediately.

**Note to Physician** : Treat symptomatically.

**PPE for first responders** : Gloves and safety goggles are highly recommended.

### 5. Fire Fighting Measures:

**Fire/Explosion Hazard** : None

**General Hazard** : Evacuate personnel downwind in-order to avoid inhalation of irritating and/or harmful fumes and smoke.

**Extinguishing Media** : Water spray, foam, dry chemical powder or carbon dioxide. Appropriate for the surrounding area.

**Hazardous Combustion Products** : Fire may cause evolution of corrosive vapors of phosphorous oxides as well as carbon oxides.

**Fighting Procedures** : Hazardous decomposition and combustion products such as phosphorous and carbon oxides can be formed if product is burning. Cool exposed containers with water spray to prevent overheating.

**Fire Fighting Equipment** : Respiratory and eye protection are required for fire fighting personnel. Full protective equipment (bunker gear) and self-contained breathing apparatus (SCBA) should be used for all fires. Evacuate area and fight fire from safe distance or a protected location. Move fire-exposed containers, if allowable without sacrificing the safety of the firefighters. If possible, firefighters should control run-off water to prevent environmental contamination.

**Sensitivity to Static Discharge** : Not sensitive.

**Sensitivity to Mechanical Impact** : Not sensitive.

## 6. Accidental Release Measures:

### Protective Gear for Personnel:

**For Small Spill** : Safety glasses or chemical splash goggles, chemically resistant gloves, chemically resistant boots, and any appropriate body protection to minimize direct contact to the skin. Wear respiratory protection to avoid inhaling vapors.

**For Large Spill** : Triple gloves (rubber and nitrile over latex), chemical resistant suit, boots, hard hat, full face mask/an air purifying respirator (NIOSH approved). Self contained breathing apparatus must be worn in situations where fumigant gas generation and low oxygen levels are a consequence of contamination from the leak.

### Spill Clean-up Procedures:

**For Small Spill** : In the event of a small spill, the spill should be contained with an absorbent pad and placed in a properly labeled waste disposal container immediately. Do not let chemical/waste enter the environment. Dispose as per instructions in section 13.

**For Large Spill** : In the event of a large spill, contain the spill immediately and dispose the spill/waste according to state, federal, and local hazardous waste regulation. Do not let chemical/waste enter the environment.

### Environmental Precaution

: Water spill: use appropriate containment to avoid run off or release to sewer or other waterways.  
Land spill: use appropriate containment to avoid run off or release to ground.  
General precaution: remove containers of strong acid, alkali and incompatible materials from the release area.

### Release Notes

: If spill could potentially enter any waterway, including intermittent dry creeks, contact local authorities.

## 7. Handling and Storage:

### Handling

: Use appropriate personal protective equipment as specified in Section 8. Handle in a well-ventilated area. Handle in a manner consistent with good industrial/manufacturing techniques and practices. Wash hands thoroughly with soap and water after use. Remove contaminated clothing and protective equipment before entering eating areas.

### Storage

: Store in a cool, dry well-ventilated area. Keep containers closed when not in use. Keep containers isolated from incompatible materials/conditions such as heat and ignition sources. Protect against physical damage and check regularly for leaks.

## 8. Exposure Controls and Personal Protection:

### Engineering Controls

: Use appropriate engineering controls to minimize exposure to vapors/dust generated via routine use. Maintain adequate ventilation of workplace and storage areas.

### Personal Protective Equipment

: **Eyes and face:** Wear safety glasses with side shields or face shield when handling this material.  
**Skin:** Avoid direct contact with skin. Wear chemically resistant gloves, apron, boots or whole chemically resistant bodysuit when handling this product.  
**Respiratory:** Avoid breathing vapor or mist. If risk of overexposure, use NIOSH approved respiratory protection equipment. If used, full face-piece replaces the need for face shield and/or chemical goggles. Consult the respirator manufacturer to determine the appropriate type of equipment for a given application.

**Work Hygienic Practices** : Facilities storing or using this material should be equipped with emergency eyewash, and a safety shower. Good personal hygiene practices should always be followed.

### Exposure Limits:

Substance:	CAS No.:	OSHA STEL	OSHA PEL	ACGIH TLV	ACGIH STEL
2-Phosphonobutane-1,2,4-tricarboxylic acid	37971-36-1	N/A	N/A	N/A	N/A

## 9. Chemical and Physical Properties:

<b>Appearance</b>	: Clear/pale yellow Liquid	<b>Upper Explosive Limit</b>	: Not available
<b>Odor</b>	: Slight	<b>Vapor Pressure</b>	: ~20 mmHg @ 20°C
<b>Odor threshold</b>	: Not available	<b>Vapor Density</b>	: Not available
<b>Color</b>	: Colorless to Pale Yellow	<b>Specific Gravity</b>	: 1.270 - 1.310 @ 25°C
<b>pH</b>	: 1.5 - 2.5 (1% Solution)	<b>Solubility</b>	: Soluble in water
<b>Melting Point</b>	: -15°C, 5°F	<b>Partition Coefficient</b>	
<b>Freezing Point</b>	: < -15°C	<b>n-octanol/water</b>	: -1.36 logP(o/w) Anhydrous @25°C
<b>Boiling Range</b>	: >100°C	<b>Auto Ignition Temp.</b>	: Not available
<b>Flash Point</b>	: Not combustible	<b>Molecular Weight</b>	: 270 for the active ingredient
<b>Ignition Temp.</b>	: No data available		
<b>Evaporation Rate</b>	: Not available		
<b>Lower Explosive Limit</b>	: Not available		

## 10. Stability and Reactivity:

<b>Stability</b>	: The product is stable under recommended storage and handling conditions.
<b>Hazardous Polymerization</b>	: Polymerization will not occur.
<b>Hazardous Decomposition Products</b>	: Gives off hydrogen by reaction with metals. Oxides of carbon and oxides of phosphorous formed under decomposition/fire.
<b>Materials to Avoid</b>	: Corrodes base metals. Reacts with oxidizing substances, alkalis, nitrites, steel, and sulphites.
<b>Conditions to Avoid</b>	: Avoid exposure to extreme temperatures, incompatible materials, & combustible materials.

## 11. Toxicological Information:

### Acute Oral Toxicity:

LD<sub>50</sub> Oral - Rat: > 6500 mg/kg

### Acute Inhalation Toxicity:

LC<sub>50</sub> Inhalation - Rat: > 1.979 mg/L/4h (sodium salt)

### Acute Dermal Toxicity:

LD<sub>50</sub> Dermal - Rat: >4000 mg/kg

### Corrosion/Irritation:

**Skin** : Non-irritating - Rabbit  
**Eyes** : Moderately irritating - Rabbit

**Carcinogenicity** : IARC, NTP, OSHA, ACGIH: Not listed

**Mutagenicity** : No data available.

**Teratogenic Effects** : No data available.

**Routes of Exposure** : Eyes, Skin, Inhalation, Ingestion

### Potential Health Effects:

**Eyes** : Causes serious eye damage.  
**Skin** : Can cause significant irritation to the skin.  
**Inhalation** : Harmful if inhaled. Can cause irritation to the respiratory tract and can induce coughing.  
**Ingestion** : May be harmful if swallowed. Can cause irritation and discomfort.

**Sensitization** : No data available

**Reproductive Effects** : No data available.

## 12. Ecological Information:

All work practices must be aimed at eliminating environmental contamination.

<b>Biodegradability in Soil/Water</b>	: No data available.
<b>Bioaccumulative Potential</b>	: Not expected
<b>Terrestrial Ecotoxicity</b>	: This material can be harmful or fatal to contaminated plants or animals, especially if large volumes are released into the environments.
<b>Aquatic Ecotoxicity (Acute)</b>	
<b>Fish Toxicity</b>	: Golden Orfe (Leuciscus idus) - LC50: >500 mg/L/48h (STATIC) : Rainbow Trout (Salmo gairdneri)- LC0: > 1000 mg/L/96h : Zebra Fish (Brachydanio rerio) - LC50: > 1042 mg/L/96h (OECD 204) : Zebra Fish (Brachydanio rerio) - NOEC: >= 1042 mg/L/14d (OECD 204)
<b>Aquatic Invertebrates</b>	: Water Flea (Daphnia magna) - EC50: 1071 mg/L/48h (OECD 202) : Water Flea (Daphnia magna) - EC50: 329 - 1071 mg/L/21d (OECD 211) : Water Flea (Daphnia magna) - NOEC: 104 mg/L/21d (OECD 211)
<b>Aquatic Plants</b>	: Algae - EC50: 1081 mg/L/72h (OECE 201) : Algae - EC50: 33.3 - 65.5 mg/L/72h (OECD 201)
<b>Water Hazard Class</b>	: slightly hazardous to water
<b>Mobility in Soil</b>	: No data available.
<b>Other Adverse Effects</b>	: No data available.

## 13. Disposal Considerations:

<b>Disposal Method</b>	: Dispose of waste at an appropriate waste disposal facility according to current applicable laws and regulations.
<b>For Large Spills</b>	: Contain material and call local authorities for emergency assistance.
<b>Product Disposal</b>	: Dispose of at a supervised incineration facility or an appropriate waste disposal facility according to current applicable local, state and federal laws, regulations and product characteristics at time of disposal.
<b>Empty Container</b>	: Contaminated container should be labeled and disposed in accordance to local, state and federal laws and regulations.
<b>General Comments</b>	: Refer to section 6, accidental release measures for additional information.

## 14. Transport Information:

Regulatory Information	UN No.	Proper Shipping Name	UN Class	Packing Group	Label
US DOT	3265	Corrosive Liquid, Acidic, Organic, N.O.S. (Hydroxyethylidene diphosphonic acid)	8	III	Corrosive Sticker
IMDG	3265	Corrosive Liquid, Acidic, Organic, N.O.S. (Hydroxyethylidene diphosphonic acid)	8	III	Corrosive Sticker
IATA	3265	Corrosive Liquid, Acidic, Organic, N.O.S. (Hydroxyethylidene diphosphonic acid)	8	III	Corrosive Sticker

## 15. Regulatory Information:

### U.S. FEDERAL REGULATIONS:

**TSCA:** All components of this product are listed on the TSCA inventory.

**CERCLA:** No components of this product are listed.

**SARA TITLE III (EPCRA) Section 313:** No components of this product are listed.

**SARA TITLE III (EPCRA) Section 311/312:** Acute Health Hazard/10,000 lbs.

US EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261): When discarded in its purchased form, this product meets the criteria of corrosivity, and should be managed as a hazardous waste (EPA Hazardous Waste Number D002). (40 CFR 261.20-24)

**OSHA:** This product is not considered highly hazardous.

## 16. Other Information:

### HMIS and NFPA Rating Scale

**HMIS: Hazardous Materials Identification System**

#### HMIS Rating:\*

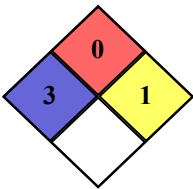
HEALTH	3
FLAMMABILITY	0
PHYSICAL HAZARD	1
PERSONAL PROTECTION	C

#### \*HMIS Key:

HEALTH 3-Serious
FLAMMABILITY 0 - Minimal
PHYSICAL HAZARD 1 - Slight
PERSONAL PROTECTION C - Gloves + Safety Goggles + Chemical Apron

**NFPA: National Fire Protection Association**

#### NFPA Rating:\*



#### \*NFPA Key:

HEALTH 3 - Serious
FLAMMABILITY 0 - Minimal
REACTIVITY 1 - Slight
SPECIFIC HAZARD -None

**Revision Date:** April 6, 2022

**Reasons for Revision:** Updated logo and contact information. Reviewed for accuracy.

The information contained in this SDS was obtained from current and reliable sources. However, the data is provided without any warranty, expressed or implied, regarding its correctness or accuracy. Since the conditions or handling, storage and disposal of this product are beyond the control of the manufacturer/supplier, they are not held responsible for loss, injury, and expense arising out of the product's use. No warranty, expressed or inferred, regarding the product described in this SDS shall be created or inferred by any statement in this MSDS.