



**Product Name:** Metal Remover PF  
**Date:** 2/15/2021

**SECTION 1 IDENTIFICATION**

**Supplier:** Phoenix Products Company  
55 Container Drive  
Terryville, CT 06786  
(860) 589-7502

**Distributor:**

**U.S. PERS Emergency Telephone:** 1-800-633-8253

**Product Name:** **Metal Remover PF**

**Synonyms:** (2-Hydroxyethyl)ethylenediaminetriacetic acid, trisodium salt;  
N-(2-(Bis(carboxymethyl)amino)ethyl)-N-(2-hydroxyethyl)glycine, trisodium salt;  
Trisodium 2-[carboxylatomethyl-[2-(carboxylatomethyl-(2 hydroxyethyl)amino)ethyl]amino]acetate; Trisodium hydroxyethylethylenediaminetriacetate

**Chemical Name:** HEDTA

**Chemical Formula:** HEDTA-Na<sub>3</sub> / C<sub>10</sub>H<sub>18</sub>N<sub>2</sub>O<sub>7</sub> . 3Na

**CAS Number:** 139-89-9

**Product Use:** Eliminates colored or cloudy pool water and stops the precipitation, scaling, and staining of the most common minerals found in pool water.

**SECTION 2 HAZARDS IDENTIFICATION**

**Emergency Overview**

**OSHA Regulatory Status:** This product is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.122). Not a dangerous substance or mixture according to the Globally Harmonized System (GHS).

**POTENTIAL HEALTH EFFECTS** (See section 11 for additional information)

**Primary Route(s) of Exposure:** Skin contact, eye contact and inhalation.

**Acute Exposure**

**Inhalation:** Inhalation of vapors, mists, fumes or aerosols may cause discomfort and/or irritation of the respiratory system.

**Skin Contact:** This product causes moderate skin irritation.

**Eye Contact:** This product causes eye irritation

**Ingestion:** This product is expected to have a low order of acute toxicity.

**Carcinogenicity:** IARC, NTP, ACGIH and OSHA do not classify this material as a carcinogen or suspect carcinogen. However, nitrilotriacetic acid (NTA) and its salts were determined to be "possibly carcinogenic to humans" (Group 2B) by IARC, a compound which "may reasonably be anticipated to be a carcinogen" by NTP and "select carcinogen" by OSHA.

**Medical conditions aggravated:** There are no data available that address medical conditions that are generally recognized as being aggravated by exposure to this product.

**POTENTIAL ENVIRONMENTAL EFFECTS** (See section 12 for additional information)

This product is not expected to be harmful to aquatic life, based on data with related products.

**SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS**

<b>Component</b>	<b>CAS Number</b>	<b>Percent</b>
Trisodium HEDTA	139-89-9 <sup>1</sup>	15%-20%
Trisodium Nitrilotriacetate	5064-31-3	<1%
Sodium Hydroxide	1310-73-2	<1%

<sup>1</sup> The CAS Number for the anhydrous material (CAS # 139-89-9) covers all hydrated forms of this product.



**SECTION 4 FIRST-AID MEASURES**

**Inhalation:** Remove victim to fresh air. If breathing becomes difficult, oxygen may be given, preferably under physician's advice. If breathing has stopped, give artificial respiration. Get medical attention.

**Skin Contact:** Remove contaminated clothing, shoes and equipment. Wash all affected areas with soap and plenty of water for at least 15 minutes. Do not attempt to neutralize with chemical agents. Wash contaminated clothing and shoes before reuse. Get medical attention if irritation occurs or persists.

**Eye Contact:** Flush eyes with large quantities of running water for a minimum of 15 minutes. If the victim is wearing contact lenses, remove them. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eye and lids with water. Do not let victim rub eye(s). Do not attempt to neutralize with chemical agents. Oils or ointments should not be used at this time. Get medical attention if eye irritation occurs.

**Ingestion:** Give several glasses of water. DO NOT induce vomiting. If vomiting occurs keep head below hips to reduce risk of aspiration. Give fluids again. Never give anything by mouth to a person who is unconscious or convulsing. Get medical attention if health effects occur.

**Note to Physician:** Attending physician should treat exposed patients symptomatically.

**SECTION 5 FIRE FIGHTING MEASURES**

<b>Conditions of Flammability:</b>	Not Flammable or Combustible
<b>Flash Point (Method):</b>	Not Applicable
<b>Upper Flammable Limit (% by volume):</b>	Not Determined
<b>Lower Flammable Limit (% by volume):</b>	Not Determined
<b>Auto-ignition Temperature:</b>	Not Determined

**Extinguishing Media:** This product is not flammable or combustible. If involved in a fire, use water fog or spray, dry chemical, foam or carbon dioxide extinguishing agents.

**Fire Fighting Procedures:** As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Evacuate all non-essential personnel from the fire area. Fire fighters should wear full-face, self-contained breathing apparatus and impervious protective clothing.

**Fire & Explosion Hazards:** This product is not considered a fire hazard. If involved in a fire, it does not contribute any unusual hazards.

**Hazardous Combustion Products:** Thermal decomposition products may release toxic and/or hazardous fumes and gases, including nitrogen oxides and carbon oxides, ammonia and sodium hydroxide.

<b>NFPA Hazard Rating – Health:</b> 1	<b>Fire:</b> 1	<b>Instability:</b> 0	<b>Other:</b> None
[ 0 – Minimal            1 – Slight	2 – Moderate	3 – High	4 – Extreme]

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

**Spill/Leak:** Safely stop source of spill. Restrict non-essential personnel from area. All personnel involved in spill cleanup should avoid skin and eye contact by wearing appropriate personal protective equipment.

**Cleanup:** Soak up liquid with a suitable absorbent such as clay, sawdust or kitty litter. Sweep up absorbed material and place into a chemical waste container for disposal. Flush remainder with water. CAUTION! The spill area may be slippery.



**SECTION 7 HANDLING AND STORAGE**

**Handling:** Avoid inhalation and prolonged and/or repeated skin and eye contact. Minimize the generation of vapors or fumes when handling this product.

**Storage:** Keep containers closed and dry. This material is suitable for any general chemical storage area. Isolate from strong oxidizers. Store in PVC, PE, stainless steel or bituminized tanks. Avoid contact with aluminum, copper, copper alloys, nickel and zinc.

**Maximum Storage Temperature:** Store in a cool and dry place at ambient temperature (below 25°C / 77°F).

**General Comments:** Containers should not be opened until ready for use. It is recommended to re-test the product after three years in storage.

**SECTION 8 EXPOSURE CONTROL/PERSONAL PROTECTION**

**Applicable Exposure Limits:** No other limits have been developed for this material or its components.

Chemical Name	OSHA – PELs (mg / m <sup>3</sup> )		ACGIH – TLVs (mg / m <sup>3</sup> )		NIOSH – RELs (mg / m <sup>3</sup> )		AIHA – WEELs (mg / m <sup>3</sup> )	
	TWA	STEL / CEIL(C)	TWA	STEL / CEIL(C)	TWA	STEL / CEIL(C)	TWA	STEL / CEIL(C)
HEDTA, Trisodium salt	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Water	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Trisodium NTA	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Sodium hydroxide	2.0	N/D	N/D	2.0 ( C )	N/D	2.0 ( C )	N/D	N/D

[Ref: ACGIH Guide to Occupational Exposure Values, 2008 Edition]

Legend:

CEIL:	Ceiling Exposure Limit	PEL:	Permissible Exposure Limit	REL:	Recommended Exposure Limit
STEL:	Short Term Exposure Limit	TLV:	Threshold Limit Value	TWA:	Time-Weighted Average
N/D:	Not Determined	WEEL:	Workplace Environmental Exposure Level		
ACGIH:	American Conference of Governmental Industrial Hygienists				
AIHA:	American Industrial Hygiene Association				
NIOSH:	National Institute for Occupational Safety and Health				
OSHA:	Occupational Safety and Health Administration				

**Engineering Controls – Ventilation:** Special ventilation is usually not required under normal use conditions. However, ensure that existing ventilation is sufficient to prevent the circulation and/or accumulation of vapor in the air.

**Personal Protective Equipment (PPE)**

**-Respiratory Protection:** Use of respiratory protection is generally not required. However, if use conditions generate vapor, mist or aerosol and adequate ventilation (e.g., outdoor or well-ventilated area) is not available, use a NIOSH-approved organic vapor respirator with dust, mist and fume filters to reduce potential for inhalation exposure. Where exposure potential necessitates a higher level of protection, use a NIOSH-approved, positive-pressure/pressure-demand, air-supplied respirator. When using respirator cartridges or canisters, they must be changed frequently (following each use or at the end of the work shift) to assure breakthrough exposure does not occur.

**-Skin Protection:** Skin contact with the product should be minimized through the use of suitable protective clothing, gloves and footwear selected according to use condition exposure potential. Nitrile gloves are recommended.

**-Eye Protection:** Since eye contact may cause irritation, chemical goggles and/or a face shield should be worn when handling this product.

**Other Protection – General Hygiene Considerations:** All food and smoking materials should be kept in a separate area away from the storage/use location. Eating, drinking and smoking should be prohibited in areas where there is a potential for significant exposure to this material. Before eating, drinking and smoking, hands and face should be thoroughly washed.



SECTION 9 **PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State / Appearance / Odor:</b>	clear light yellow liquid with a slight ammonia odor
<b>Boiling Point:</b>	222.8°F (106.0°C)
<b>Bulk Density:</b>	not applicable
<b>Cloud Point:</b>	not determined
<b>Evaporation Rate (Butyl Acetate=1):</b>	not determined
<b>Melting Point:</b>	-4°F (-20°C) / freezing point
<b>Odor Threshold:</b>	not determined
<b>pH:</b>	≈ 11.5 (1% solution) / ≥ 13.0 (as is)
<b>Partition Coefficient (n-octanol/water):</b>	not determined / expected to be < 0.001
<b>Pour Point:</b>	not determined
<b>Solubility in water:</b>	miscible
<b>Solubility in other solvents:</b>	not determined
<b>Specific Gravity (H<sub>2</sub>O = 1):</b>	1.27 – 1.30
<b>Vapor Density (Air = 1):</b>	same as water
<b>Vapor Pressure:</b>	same as water
<b>Viscosity:</b>	not determined
<b>Volatiles (% by weight):</b>	not determined
<b>Other – Decomposition temperature:</b>	> 225°F (> 107°C) / water loss
<b>Conditions of Flammability:</b>	not flammable or combustible
<b>Flash Point (Method):</b>	not applicable
<b>Upper Flammable Limit (% by volume):</b>	not applicable
<b>Lower Flammable Limit (% by volume):</b>	not applicable
<b>Auto-ignition Temperature:</b>	not applicable

< : less than                      > : greater than                      ≈ : approximately

SECTION 10 **STABILITY AND REACTIVITY**

**Stability:** This product is stable at ambient temperatures and atmospheric pressures. It is not self-reactive and is not sensitive to physical impact.

**Incompatibilities / Conditions to avoid:** This product is incompatible with strong oxidizers. Avoid contact with aluminum, copper, copper alloys, nickel and zinc. Avoid prolonged storage at elevated temperatures.

**Polymerization:** Hazardous polymerization is not expected to occur under normal temperatures and pressures.

**Decomposition Products:** Under fire conditions the product may support combustion and decomposes to give off carbon oxides fumes (CO, CO<sub>2</sub>), nitrogen oxides and water vapor.

SECTION 11 **TOXICOLOGICAL INFORMATION**

**INHALATION**

**Acute exposure:** The acute LC<sub>50</sub> for this product is not available. Inhalation of vapors or fumes may cause discomfort and/or irritation of the respiratory system. There were no mortalities when rats were exposed to a saturated vapor of a related product containing 40% Trisodium HEDTA for 8 hours at 20°C.

**Chronic exposure:** No known effects for the mixture.

**SKIN**

**Acute contact:** Dermal toxicity for this product is not available. A related product containing 41.3% Trisodium HEDTA was classified as moderately irritating to the skin of rabbits after a 24-hr exposure. The Primary Irritation Index = 2.2.

**Chronic contact:** No known effects for the mixture



SECTION 11 **TOXICOLOGICAL INFORMATION - Continued**

**EYES:** This product is expected to be irritating to eyes (based on tests with related products). A related product containing 41.2% Trisodium HEDTA was irritating when instilled into the eyes of one rabbit.

**INGESTION**

**Acute exposure:** The acute LD<sub>50</sub> for this product is not available. Oral LD<sub>50</sub> of Trisodium HEDTA component is 10080 mg/kg (rat).

**Chronic exposure:** No known effects for the mixture. Chronic ingestion of NTA has been shown to cause kidney toxicity.

**SENSITIZATION:** No known effects for this mixture

**CARCINOGENICITY:** IARC, NTP, ACGIH and OSHA do not classify this material as a carcinogen or suspect carcinogen. However, nitrilotriacetic acid (NTA) and its salts were determined to be “possibly carcinogenic to humans” (Group 2B) by IARC, a compound which “may reasonably be anticipated to be a carcinogen” by NTP and a “select carcinogen” by OSHA. A related product, Trisodium EDTA, was not carcinogenic to rats and mice in a 2-year diet study.

**MUTAGENICITY:** No data available for the mixture. NTA and its sodium salts were not genotoxic in experimental systems in vivo. Neither the acid nor its salts were genotoxic in mammalian cells in vitro and they were not mutagenic to bacteria. However, trisodium NTA has been shown to be positive in the BALB/c3T3 transformation assay when tested up to 7.8 mM. A related product, containing 40% Trisodium EDTA, was not mutagenic in the Ames Assay with and without metabolic activation.

**REPRODUCTIVE TOXICITY:** No know effects for the mixture. NTA is not teratogenic and did not cause reproductive toxicity in animal studies. EDTA and its sodium salts have been reported, in some studies, to cause developmental toxicity in laboratory animal only at exaggerated doses that were toxic to the mother. These effects are likely associated with zinc deficiency due to chelation. Exposures having no effect on the zinc level of the mother should have no effect on the fetus.

**TARGET ORGANS:** Eyes

SECTION 12 **ECOLOGICAL INFORMATION**

**Ecotoxicity:** No data available on the mixture. The following data is available for a related product containing 40% Trisodium HEDTA:

Test / Species	Exposure / Duration	Test Results
Daphina Magna	48-h	EC <sub>50</sub> > 500 mg/L
Fish	96-h	LC <sub>50</sub> < 4640 mg/L / NOEC = 2150 mg/L
Bacteria (Pseudomonas Putida)	7-h	EC <sub>10</sub> = 0.64 mg/L
Algae	72-h	EC <sub>50</sub> = 26.1 mg/L

**Biodegradation:** This product is not expected to be readily biodegradable (based on tests with structurally related products).

**Bioaccumulation:** Trisodium HEDTA has a Log P<sub>ow</sub> = - 11.4 [EPIWIN / KOWWIN models). The potential for bioconcentration is low based on the high water solubility.

**Other Ecotoxicity information:** No data available on the mixture.



**SECTION 13 DISPOSAL CONSIDERATIONS**

**Waste Disposal:** In its unused condition, this product is not considered to be a RCRA-defined hazardous waste by characteristics or listings. It is the responsibility of the waste generator to evaluate whether his wastes are hazardous by characteristic or listing. Dispose in accordance with all local, state and federal regulations.

NOTE – State and local regulations may be more stringent than federal regulations.

**Container Disposal:** Containers should be cleaned of residual product before disposal or return. Since emptied containers retain product residue, follow label warnings even after container is emptied. Empty containers should be disposed of or shipped in accordance with all applicable laws and regulations.

**SECTION 14 TRANSPORT INFORMATION**

**DOT: UN Number:** ORM-D  
**UN Proper Shipping Name:** ORM-D  
**Transport Hazard Class:** ORM-D  
**Packing Group:** ORM-D

*Consumer commodity* (ORM-D) means a material that is packaged and distributed in a form intended or suitable for sale through retail sales agencies or instrumentalities for consumption by individuals for purposes of personal care or household use. Valid until December 31, 2020.



**TDG: UN Number:** 3267  
**UN Proper Shipping Name:** Corrosive liquid, basic, organic, n.o.s. (contains HEDTA trisodium salt, Sodium hydroxide)  
**Transport Hazard Class:** 8  
**Packing Group:** III

**MEX: UN Number:** 3267  
**UN Proper Shipping Name:** Corrosive liquid, basic, organic, n.o.s. (contains HEDTA trisodium salt, Sodium hydroxide)  
**Transport Hazard Class:** 8  
**Packing Group:** III

**SECTION 15 REGULATORY INFORMATION**

**Regulatory Lists:** The components are subject to the following regulatory lists and inventories:

<i>Chemical Name</i>	<i>CAA</i>	<i>CERCLA</i>	<i>IARC</i>	<i>US STATE RIGHT-TO-KNOW LISTS</i>	<i>CA PROP 65</i>	<i>SARA</i>
Trisodium HEDTA	N/R	N/R	N/R	N/R	N/R	N/R
Trisodium NTA	N/R	N/R	X (Gr. 2B)	MA	X <sup>1</sup>	N/R
Water	N/R	N/R	N/R	N/R	N/R	N/R
Sodium hydroxide	N/R	X	N/R	CA / FL / IL / MA / MN / NJ / PA / and RI	N/R	N/R

<sup>1</sup> Related product "Trisodium NTA monohydrate" [CAS # 18662-53-8] is reportable under California Proposition 65.



SECTION 15 **REGULATORY INFORMATION - Continued**

**National Chemical Inventories Status:**

Substance Name	US TSCA	Canada		EU EINECS	Australia AICS	New Zealand NZIoC	Japan ENCS	Korea KECI	Philippines PICCS	China IECSC
		DSL	NDSL							
Trisodium HEDTA <sup>2</sup>	X	X		X	X	X	X	X	X	X
Trisodium NTA	X	X		X	X	X	X	X	X	X
Sodium hydroxide	X	X		X	X	X	X	X	X	X
Water	X	X		X	X	X	X	X	X	X

<sup>2</sup> For inventory reporting purposes, listing of the anhydrous substance under CAS # 139-89-9 covers all hydrated forms of this product.

N/R = Non Regulated

X = Listed / Regulated

**Legend**

AICS	Australian Inventory of Chemical Substances
CA List	California – Directors List of Hazardous Substances
CA Prop 65	California Proposition 65
CAA	Clean Air Act, Section 112
CERCLA	CERCLA Hazardous Substances
DSL	Domestic Substances List
EINECS	European Inventory of Existing Commercial Chemical Substances
ENCS	Japan Existing and New Chemical Substances
FL List	Florida – Substance List
IARC	International Agency for Research on Cancer – Carcinogens – Groups 1, 2A or 2B
IECSC	China – Inventory of Existing Chemical Substances
IL List	Illinois Toxic Substances Disclosure to Employees Act
KECI	Korea Existing Chemicals Inventory
LA List	Louisiana Right-to-Know Reporting List
MA List	Massachusetts – R-T-K Substance List
MN List	Minnesota – Hazardous Substance List
NDSL	Non-Domestic Substances List – Canada
NJ R-T-K	New Jersey – R-T-K Hazard List
NZIoC	New Zealand Inventory of Chemicals
PA List	Pennsylvania Hazardous Substance List
PICCS	Philippines Inventory of Chemicals and Chemical Substances
RI List	Rhode Island – Hazardous Substance List
SARA	SARA Title III, Section 302 / 313
TSCA	Toxic Substances Control Act – USA

**Other Regulatory Information:** Contact AkzoNobel for additional information regarding the use and approval of Trisodium HEDTA as an indirect food additive

SECTION 16 **OTHER INFORMATION**

**HMIS RATING – Health: 1      Flammability: 1      Physical Hazards:0      Other: none**  
[ 0 – Minimal    1 – Slight    2 – Moderate    3 – High    4 – Extreme    \* - Chronic Health Hazard (see Section 11)]

No representations or warranties, either expressed or implied, of merchant ability, fitness for a particular purpose or any other nature are made hereunder with respect to information or the product to which the information refers.

Date: 2/15/2021  
Phoenix Products Company