



SAFETY DATA SHEET

1 – PRODUCT AND COMPANY IDENTIFICATION

Product Name:	TARN-X PRO® TARNISH REMOVER
Product Use:	Aqueous Acidic Tarnish Remover for Removal of Accumulated Tarnish on Sterling Silver, Silver Plate, Copper, and Jewelry. Industrial Uses: for Cleaning Copper in Factory Setting and Mechanic Shop. Commercial Containers: One Gallon [128 fl. oz. (3785 ml), 5 Gallon Pail, 55 Gallon Drum]
Restrictions on Use:	Incompatible with strong oxidizers, chlorine, acrolein, acrylaldehyde, strong bases, hydrogen peroxide, acids, fuming nitric acid, and bleach. Do not use on stainless steel, chrome, pewter, aluminum, brass, zinc, marble, steel knives, artificially oxidized silver, lacquered surfaces, pearls, opals or porous stones. Avoid spilling on laminates, countertops, Formica® or synthetic surfaces which may be affected; clean spill immediately.
Manufacturer:	Jelmar, LLC
Address:	5550 W. Touhy Ave. Skokie, IL 60077 USA 1(847) 675-8400
Emergency Phone Number:	1(800) 323-5497 (USA) 8:30 A.M. – 4:30 P.M. CST Monday – Friday
Emergency 24-hour Contact:	Chemtrec 1(800) 424-9300

2 – HAZARDS IDENTIFICATION

COMPLIES WITH 29 CFR 1900.1200 DATED MAY 2024.

CLASSIFICATION

Eye Damage, Category 1
Carcinogenicity, Category 2
Toxic to Reproduction, Category 2
Corrosive to Metals, Category 1

LABEL ELEMENTS



Signal Word Danger

Hazard statements Causes serious eye damage.
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.
May be corrosive to metals.

Precautionary statement(s) Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves, protective clothing, and eye protection/face protection.



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Wash skin thoroughly after handling.

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/doctor.

If exposed or concerned: Get medical advice/attention.

Keep only in original packaging.

Store locked up.

Keep out of reach of children.

Absorb spillage to prevent material damage.

Store in corrosive resistant container with a resistant inner liner.

Dispose of contents/container in accordance with local/regional/ national/ regulations.

Hazard(s) not otherwise classified (HNOC)

DO NOT mix with other household cleaners or chemicals including bleach, as toxic fumes may result.

Unknown Acute Toxicity: Not applicable

SECTION 3 – COMPOSITION /INFORMATION ON INGREDIENTS

CHEMICAL CHARACTERIZATION: Mixtures

HAZARDOUS COMPONENTS:

<u>Component</u>	<u>CAS#</u>	<u>OSHA Hazard</u>	<u>% by Weight</u>
1. Thiourea	62-56-6	Yes	3.00-7.00
2. Sulfamic Acid	5329-14-6	Yes	1.00-5.00

The exact percentages (concentration) of mixture have been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

SECTION 4 – FIRST AID MEASURES

FIRST AID MEASURES

EYE CONTACT: In case of eye contact, immediately rinse thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: immediately call a POISON CENTER/physician.

SKIN CONTACT: In case of skin contact, rinse thoroughly with water for at least 15 minutes. Remove contaminated clothing and shoes, wash thoroughly before reuse. If irritation persists, get medical attention.

INHALATION: Not a significant route of exposure. Remove to fresh air. If breathing is difficult, GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION: If swallowed, DO NOT induce vomiting, drink 16 ounces of water. Call POISON CENTER or doctor immediately. NEVER give an unconscious person anything to ingest.

MOST IMPORTANT SYMPTOMS AND EFFECTS: May cause serious eye damage. Effects may vary depending on length of exposure. Symptoms may include stinging, redness, tearing, and blurred vision of the eyes. Prolonged skin contact may cause redness, discomfort and itching. Accidental ingestion may result in oral burns, vomiting and gastrointestinal disturbance.



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INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED: Provide general supportive measures and treat symptomatically. Provide SDS to physician. Symptoms may be delayed.

SECTION 5 – FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Not flammable. Use appropriate media for area.

UNSUITABLE EXTINGUISHING MEDIA: None known.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL

Hazardous Combustion: Carbon Monoxide, Nitrogen Oxides (NO_x), Sulfur Oxides and ammonia. Thermal decomposition can lead to release of irritating gases, vapors and carbon oxides.

Fire and Explosion Hazards: None known.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE-FIGHTERS: Evacuate area of personnel. Wear protective NIOSH-approved self-contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products. Use water spray to cool fire-exposed containers. Contaminated extinguishing water must be disposed of in accordance with local, state and federal regulations.

SECTION 6 – ACCIDENTAL RELEASES MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES: Do not get in eyes. Avoid prolonged contact with skin. Ensure adequate ventilation. Avoid breathing vapors or mist. Use personal protective equipment, see Section 8. Isolate area and deny entry to unnecessary and unprotected personnel.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN UP:

Small Spill: No special clean-up procedure is necessary for small (less than 1 gallon) spills. Flush spill area with water. Area may be slippery. Wear rubber gloves.

Large Spill: Dam spill, and absorb with earth, sand or similar material. Place in non-leaking containers. Flush residue with large amount of water. Area may be slippery. Do not reuse mops from clean up. Dispose of collected material according to local, state, and federal regulations. Avoid direct discharge to sewers and surface waters.

SECTION 7 – HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Do not get in eyes. Avoid prolonged contact with skin. Use appropriate personal protective equipment (see Section 8). Use with adequate ventilation. Avoid breathing vapors or mist. Observe good industrial hygiene practices when handling this material. Do not eat, drink, or smoke in work area. Wash hands thoroughly after use. Avoid exposure to excess heat. **DO NOT MIX WITH OTHER HOUSEHOLD CLEANERS OR CHEMICALS INCLUDING BLEACH, AS TOXIC FUMES MAY RESULT.** Keep out of reach of children.

CONDITIONS FOR SAFE STORAGE, INCLUDING INCOMPATIBILITIES: Store in cool, well-ventilated area, away from heat. Store in original container in a secure area away from children and pets. Store in a corrosion resistant container with a resistant inner liner. Store locked up. Keep containers tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Avoid contact with combustible materials, wood, and organic materials. Avoid contact with strong oxidizers, chlorine, acrolein, acrylaldehyde, strong bases, hydrogen peroxide, acids, fuming nitric acid, and bleach.



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SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

<u>Component</u>	<u>PEL</u>	<u>OSHA</u>	<u>TWA</u>	<u>ACGIH</u>
		<u>STEL/C</u>		<u>STEL/C</u>
1. Thiourea	N.E.	N.E.	N.E.	N.E.
2. Sulfamic Acid	N.E.	N.E.	N.E.	N.E.

APPROPRIATE ENGINEERING CONTROLS: Use with adequate ventilation. Do not use in closed or confined spaces. Avoid prolonged breathing of vapor or mists of this product. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If occupational exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities must be available when handling this product.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: In an industrial setting, respiratory protection must be worn if ventilation does not eliminate symptoms or keep levels below recommended exposure limits. If vapor or mist is present, wear NIOSH-Approved respirator for vapors and mists, NIOSH-Approved self-contained breathing apparatus, NIOSH-Approved full-face piece positive-pressure, air-supplied respirator. DO NOT exceed limits established by respirator manufacturer. Emergency responders should wear self-contained breathing apparatus (SCBA) to avoid inhalation of product.

EYE PROTECTION: Industrial users wear safety goggles; wear face protection if the potential for splashing exists. Do not wear contact lenses. Emergency responders should wear full eye and face protection.

SKIN PROTECTION: Rubber gloves with protective cuff. Emergency responders should wear impermeable gloves.

OTHER PROTECTION: Wear protective clothing. Emergency responders should wear chemical type (impermeable) protective clothing and footwear where direct contact with chemicals in this product is possible.

WORK/HYGIENIC PRACTICES: Wash hands thoroughly after use or handling. Routinely wash work clothing and protective equipment to remove contaminants. Use good industrial hygiene practices when handling this product.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear Liquid
Color:	Water white
Odor/odor threshold:	Slightly acidic
Melting point/freezing point:	N.D.
Boiling point (or initial boiling point or boiling range):	103°C / 217°F
Flammability:	Not Flammable
Lower and upper explosion limit/flammability limit:	N.A.
Flash point:	None
Auto-ignition temperature:	N.A.
Decomposition temperature:	N.A.
pH:	0.85 – 1.05
Kinematic viscosity:	N.D.



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Solubility:	100% in water
Partition coefficient n-octanol/water:	N.D.
Vapor pressure/evaporation rate (Pascal):	N.D.
Density and/or relative density:	1.029 – 1.049
Relative vapor density:	N.D.
Particle characteristics:	N.A.

SECTION 10 – STABILITY AND REACTIVITY

REACTIVITY: No hazardous reactions if stored and handled as prescribed/indicated.

CHEMICAL STABILITY: Stable under normal storage conditions.

POSSIBILITY OF HAZARDOUS REACTIONS: None known.

CONDITIONS TO AVOID: Avoid elevated temperatures. **DO NOT MIX WITH OTHER HOUSEHOLD CLEANERS OR CHEMICALS INCLUDING BLEACH, AS TOXIC FUMES MAY RESULT.**

INCOMPATIBLE MATERIALS: Strong oxidizers, chlorine, acrolein, acrylaldehyde, strong bases, hydrogen peroxide, acids, fuming nitric acid, and bleach.

HAZARDOUS DECOMPOSITION PRODUCTS: May emit ammonia and oxides of sulfur, nitrogen and carbon. Thermal decomposition can lead to release of irritating gases, vapors and carbon oxides. In the event of fire: see Section 5.

SECTION 11 – TOXICOLOGICAL INFORMATION

ROUTES OF EXPOSURE: Eyes, Skin, Inhalation, Ingestion.

Eyes: May cause serious eye damage. Do not get in eyes. Effects may vary depending on length of exposure.

Skin: Mild Irritant: avoid prolonged skin contact. Effects may vary depending on length of exposure.

Inhalation: No adverse effects expected under typical use conditions.

Ingestion: No adverse effects expected under typical use conditions. Accidental ingestion may result in oral burns, vomiting and gastrointestinal disturbance.

SYMPTOMS: May cause serious eye damage. Effects may vary depending on length of exposure.

Symptoms may include stinging, redness, tearing, and blurred vision of the eyes. Prolonged skin contact may cause redness, discomfort and itching.

INFORMATION ON TOXICOLOGICAL EFFECTS:

NUMERICAL MEASURES OF TOXICITY:

Constituent	Oral LD50	Dermal LD50	Inhalation LC50
Thiourea	1,750 mg/kg (rat)	> 2,800 mg/kg (rabbit)	>195 mg/m ³ (Max. attain. conc.) (rat, 4h, aerosol)
Sulfamic Acid	2,065 mg/kg (rat)	> 2,000 mg/kg (rat)	No data
Product Acute Toxicity Estimate	>5,000 mg/kg	>5,000 mg/kg	Not assessed



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DELAYED AND IMMEDIATE EFFECTS AND CHRONIC EFFECTS FROM SHORT-TERM AND LONG-TERM EXPOSURE:

Eye Irritation: Causes serious eye damage based on *in vitro* test results (OECD 437).

Skin Irritation: Based on *in vitro* test results (OECD 439), the product is not classified as a skin irritant. May cause mild skin irritation following prolonged exposure.

Skin Sensitization: Product is not classified based on available data.

Respiratory Sensitization: Product is not classified based on available data.

Carcinogenicity: Contains Thiourea, which is suspected of causing cancer.

Component	CAS No.	IARC	NTP	ACGIH	OSHA
Thiourea	62-56-6	Group 3	Reasonably Anticipated	Not listed	Not listed

Mutagenicity: Product is not classified based on available data.

Reproductive Toxicity: Contains Thiourea, which is suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity – Single Exposure: Product is not classified based on available data.

Specific Target Organ Toxicity – Repeated Exposure: Product is not classified based on available data.

Aspiration Hazard: Product is not classified based on available data.

SECTION 12- ECOLOGICAL INFORMATION

Ecotoxicity:

Constituent	Organism and Species	Results
Thiourea	Fish (<i>Leuciscus idus</i>)	48h LC50: >10,000 mg/L
	Crustacea (<i>Daphnia magna</i>)	48h EC50: 35 mg/L
	Crustacea (<i>Daphnia magna</i>)	21d NOEC: 0.1 – 0.25 mg/L
	Algae (<i>Raphidocelis subcapitata</i>)	72h EC50: >100 mg/L (yield and growth rate)
	Microorganisms (Activated Sludge)	18h TT: 1,265 mg/L
Sulfamic Acid	Fish (<i>Pimephales promelas</i>)	96h LC50: 70.3 mg/L
	Fish (<i>Danio rerio</i>)	34d NOEC: ≥ 60 mg/L
	Crustacea (<i>Daphnia magna</i>)	48h EC50: 71.6 mg/L
	Crustacea (<i>Daphnia magna</i>)	21d NOEC: 19 mg/L
	Algae (<i>Desmodesmus subspicatus</i>)	72h EC50: 48 mg/L (growth rate)
	Microorganisms (Activated Sludge)	3h EC50: > 200 mg/L

Persistence / Degradability:

Constituent	Results
Thiourea	Inherently and ultimately biodegradable
Sulfamic Acid	N.A. - inorganic

Bioaccumulative Potential:

Constituent	Log Pow	Bioconcentration Factor (BCF)
Thiourea	-0.92	No data
Sulfamic Acid	N.A.	No data



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Mobility in soil: No information available.
PBT and vPvB assessment: Not considered to be PBT or vPvB.
Other Adverse Effects: No information available.

SECTION 13 – DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Rinse empty containers and recycle. Dispose of unused product in a permitted hazardous waste management facility following all local, state, and federal regulations. Processing use or contamination of this product may change the waste management options. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. State and local disposal regulations may differ from federal disposal regulations.

CONTAMINATED PACKAGING: Follow label warnings, since containers may retain some residue of the product.

SECTION 14 – TRANSPORTATION INFORMATION

DOT (Department of Transportation) (Land Transport):

Hazard Class/Label: 8
Packaging Group: III
UN Number: UN1760
Proper Shipping Name: Corrosive Liquid, N.O.S. (Sulfamic Acid)
Restrictions: Limited quantity
Reportable Quantity (RQ): 10 lbs. Thiourea

IMDG (Marine Transport):

Hazard Class/Label: 8
Packaging Group: III
UN Number: UN1760
Proper Shipping Name: Corrosive Liquid, N.O.S. (Sulfamic Acid)
Marine Pollutant: No

IATA (Air Transport):

Hazard Class/Label: 8
Packaging Group: III
UN Number: UN1760
Proper Shipping Name: Corrosive Liquid, N.O.S. (Sulfamic Acid)

SECTION 15 – REGULATORY INFORMATION

FEDERAL REGULATIONS:

TSCA INVENTORY STATUS: All components of this product are listed on the TSCA Inventory or are exempt from TSCA Inventory requirements.

SARA TITTLE III SECTION 311/312 CATEGORY:

IMMEDIATE (ACUTE) HEALTH HAZARD: YES



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DELAYED (CHRONIC) HEALTH HAZARD: YES
FIRE HAZARD: NO
SUDDEN RELEASE OF PRESSURE: NO
REACTIVE HAZARD: NO

SARA SECTIONS 302/304/313/HAP: SARA 313: Thiourea

INTERNATIONAL CHEMICAL INVENTORY STATUS:

EUROPEAN UNION (EINECS) YES
JAPAN (METI) YES
AUSTRALIA (ACIS) YES
KOREA (KECL) YES
CANADA (DSL) YES
CANADA (NDSL) NO
PHILIPPINES YES

STATES RIGHT TO KNOW:

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Thiourea	X	X	X	X	X
Sulfamic acid		X			

The following statement is made in order to comply with the California State Drinking Water Act:

WARNING: This product can expose you to chemicals including Thiourea, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

SECTION 16 – OTHER INFORMATION

Date of Revision: 04-August-2026

Section 2: Update GHS classification. Updated Section 11.

Total VOC (wt. %): <0.06% (calculated) (Volatile Organic Compounds/California Air Resources Board)

TARN-X PRO® Tarnish Remover Chemical Fate Information: 28-day biodegradation. The matter is readily biodegradable. OECD 301D.

SDS ABBREVIATIONS:

ACGIH:	American Conference of Governmental Industrial Hygienists
C:	Ceiling Limit
EC50:	Effective Concentration to 50% of a test population
HAP:	Hazardous Air Pollutant
IARC:	International Agency for Research on Cancer
IATA:	International Air Transport Association
IMDG:	International Maritime Dangerous Goods
LC50:	Lethal Concentration to 50% of a test population
LD50:	Lethal Dose to 50% of a test population
N.A.:	Not Applicable
N.D.:	Not Determined
N.E.:	Not Established
NIOSH:	National Institute for Occupational Safety & Health
NOEC:	No Observed Effect Concentration
NTP:	National Toxicology Program
OECD:	Organisation for Economic Cooperation and Development
OSHA:	Occupational Safety and Health Administration



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PBT:	Persistent, Bioaccumulative and Toxic
PEL:	Permissible Exposure Limits
STEL:	Short-Term Exposure Limit
TSCA:	Toxic Substances Control Act
TT:	Toxicity Threshold
TWA:	Time-Weighted Average
UN:	United Nations
vPvB:	Very Persistent and Very Bioaccumulative
VOC:	Volatile Organic Compound

Although the information and recommendations set forth herein are presented in good faith and believed to be correct as of the date hereof, JELMAR offers no representations as to the completeness or accuracy thereof. Information is provided upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will JELMAR be responsible for damages of any nature whatsoever resulting from use of or reliance upon said information.

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