



SAFETY DATA SHEET

1 - PRODUCT AND COMPANY IDENTIFICATION

Product Name TARN-X PRO® TARNISH REMOVER

Restrictions on Use: Incompatible with strong oxidizing agents, acids, bases, 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.

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]

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 29CFR 1900.1200 DATED MAY 2012



WARNING

ACUTE ORAL TOXICITY (Category 4)
ACUTE EYE IRRITATION (Category 2B)
ACUTE DERMAL IRRITATION (Category 3)
CARCINOGENITY (Category 2)
REPRODUCTIVE TOXICITY (Category 2)

HAZARD NOT OTHERWISE CLASSIFIED ((HNOC))
Not applicable

OTHER INFORMATION
No information available

DO NOT ingest
DO NOT get in eyes, on skin or clothing.



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DO NOT mix with bleach or other household chemicals harmful; fumes may result.
DO NOT breathe vapor or mist. Use in well ventilated areas. Keep container closed when not in use.

KEEP OUT OF REACH OF CHILDREN

Hazard statement(s) Harmful if swallowed
Causes eye irritation
May cause mild skin irritation
Suspected of causing cancer
Suspected of damaging fertility or the unborn child

Precautionary statement (s)

Do not use until all safety precautions have been read and understood.
Use in well ventilated area.
Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.
Wear protective gloves.
IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice.
IF ON SKIN: Wash with plenty of soap and water.
IF exposed or concerned: Get medical advice/ attention.
Rinse mouth.
If skin irritation or rash occurs: Get medical advice/ attention.
Take off contaminated clothing and shoes; wash before reuse.
Store locked up.
Dispose of contents/ container to an approved waste disposal facility.
Wear protective gloves.

SECTION 3 - COMPOSITION /INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CAS#</u>	<u>OSHA HAZARD</u>	<u>% by Weight</u>
1. Thiourea	62-56-6	Yes	4.00-7.00
2. Sulfamic Acid	5329-14-6	Yes	2.00-5.00

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

SECTION 4 – FIRST AID MEASURES

EYE CONTACT: In case of eye contact, immediately rinse eye thoroughly with plenty of water. Remove contact lenses, and continue rinsing for at least 15 minutes. If irritation persists, get medical attention.
SKIN CONTACT: Can be irritating to skin, prolonged contact can be more severe, no adverse effects during normal usage. In case of skin contact, rinse area for at least 15 minutes. Remove contaminated clothing and shoes, wash thoroughly before reuse. If irritation persists get medical attention.



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

INGESTION: DO NOT induce vomiting. If fully conscious, drink 16 ounces of water. CALL A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. NEVER give an unconscious person anything to ingest.

SECTION 5 – FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Not flammable. Use appropriate media for area. Use water spray, dry chemical, alcohol foam or carbon dioxide.

HAZARDOUS COMBUSTION PRODUCTS: Carbon Monoxide Nitrogen Oxides (NOx) and Sulfur Oxides. Thermal decomposition can lead to irritating gases and vapors.

FIRE FIGHTING METHODS: 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. Run-off of large quantities of product from fire control can cause pollution. Contact appropriate agencies.

FIRE AND EXPLOSION HAZARDS: None known

SECTION 6 – ACCIDENTAL RELEASES MEASURES

Steps to be taken in Case Material is Released or Spilled: Avoid contact with skin and eyes

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

Large Spill: Use personal protection recommended in Section 8. Isolate area, and deny entry to unnecessary and unprotected personnel. Dam spill, and absorb with earth, sand or similar material. Place in non-leaking containers. Dispose of collected material according to local, state, and federal regulations. Flush residue with large amount of water. Do not reuse mops from clean up; dispose with collected material. Do not discharge to sewers and surface waters. Contact licensed professional waste disposal service.

SECTION 7- HANDLING AND STORAGE

HANDLING and STORAGE: Avoid contact with eyes, skin or clothing. May be harmful if swallowed. Use with adequate ventilation. Avoid breathing vapors or mist. Do not eat, drink, or smoke in work area. Wash hands thoroughly after use. Industrial size container (1, 5, 55 gallon), should be rinsed and recycled. Store in cool well-ventilated area away from heat. Store in original container in a secure area away from children and pets. Keep containers tightly closed. Avoid contact with combustible materials, wood, and organic materials. Avoid contact with strong oxidizing agents, acids, bases, and bleach.

DO NOT MIX WITH BLEACH, OR ANY OTHER PRODUCTS AS TOXIC FUMES MAY RESULT. KEEP OUT OF REACH OF CHILDREN.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

<u>COMPONENT</u>	<u>OSHA</u>		<u>ACGIH</u>	
	<u>PEL</u>	<u>STEL/C</u>	<u>TWA</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.

VENTILATION REQUIREMENT: Avoid prolonged breathing mists or dusts of this product. Use with adequate ventilation. Do not use in closed or confined spaces.

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 mist or dust is present, wear NIOSH-Approved respirator for dusts and mists, NIOSH-Approved self-contained breathing



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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. 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: 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 thoroughly with soap and water after use or handling.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Crystal clear, water white liquid	Flammability:	Not Flammable
Odor: Slightly acidic	Upper/Lower Flammability	N.A.
Odor Threshold: N.D.	Vapor Pressure:	N.D.
pH: @20°C 0.85-1.05	Vapor Density (mm Hg):	N.D.
Melting Point: N.D.	Relative Density @20°C:	1.029 – 1.049
Freezing Point: N.D.	Solubility in water:	100%
Boiling Point: 103°C / 217°F	Partition Coefficient;	N.D.
Boiling Point Range: N.A.	n-octanol/water	
Flash Point: None	Auto Ignition Temperature:	N.A.
Evaporation Rate: N.D.	Decomposition Temperature:	N.A.
	Viscosity:	N.D.

SECTION 10 – STABILITY AND REACTIVITY

REACTIVITY: N.A.

CHEMICAL STABILITY: Stable under normal storage conditions.

POSSIBILITY OF HAZARDOUS REACTIONS: N. D.

CONDITIONS TO AVOID: Avoid elevated temperatures.

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

HAZARDOUS DECOMPOSITION PRODUCTS: May emit ammonia and oxides of sulfur, nitrogen, and carbon.

SECTION 11 – TOXICOLOGICAL INFORMATION

Routes of Exposure Eyes, Skin, Inhalation, Ingestion.

Eyes Irritant
Avoid eye contact
Effects may vary depending on length of exposure, solution concentration

Skin Mild Irritant. Prolonged contact may cause dermatitis, and itching.

Inhalation No adverse effects expected under typical use conditions.



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Ingestion

Harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause burns to the digestive tract.

Reproductive toxicity: Prolonged or repeated exposure may cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects.

Specific Target Organ Toxicity: - Single Exposure N.D.

Specific Organ Toxicity: Repeated dose - Blood, liver, bone marrow, thyroid, and reproductive system. Probable carcinogen and mutagen. Wash hands thoroughly after use.

LD₅₀ ACUTE EYE IRRITATION: GHS Toxicity Category 2B

LD₅₀ ACUTE ORAL TOXICITY – RATS: GHS Category 4

LD₅₀ ACUTE DERMAL IRRITATION - RABBITS: GHS Category 3

LD₅₀ ACUTE DERMAL TOXICITY - RABBITS: >5,000 mg/kg

LD₅₀ ACUTE INHALATION TOXICITY – RATS: Not toxic by inhalation.

This product contains a component that has been reported to be probably carcinogenic based on its IARC, NTP, and OSHA classification.

SECTION 12- ECOLOGICAL INFORMATION

THIOUREA:**Ecotoxicity:**

Toxicity to fish LC50 - Danio rerio (zebra fish) - 10.000 mg/l - 96.0 h

Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia magna (Water flea) - 5.6 - 18.0 mg/l - 48 h

Toxicity to algae EC50 - Desmodesmus subspicatus (green algae) - 6.8 mg/l - 96 h

Persistence / degradability:

Biodegradability Biotic/Aerobic

Result: < 1 % - Not readily biodegradable.

Bioaccumulative potential:

No data available

Mobility in soil:

No data available

SULFAMIC ACID:**Ecotoxicity:**

No data available

Persistence / degradability:

No data available



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Bioaccumulative potential:

No data available

Mobility in soil:

No data available

Other adverse effects:

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

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.

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

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.

SECTION 14 - TRANSPORTATION INFORMATION

The following Transportation Information applies to 1, 5 and 55 gallons containers:

UN Number: UN2922

UN Proper Shipping Name: UN2922 (Thiourea, Sulfamic Acid).

Transport Hazard Class: 8

Packaging Group: III.

Environmental Hazard: Marine – YES

DOT Identification Number: N.A.

Reportable Quantity (RQ): 10# Thiourea

IMDG Classification: UN 2922, Class 8, Packaging Group III, EMS-No: F-A, S-B

IATA Classification: UN2922, Class 8, Packaging Group III

WHIMS (Canada): DIA, D1B, and D2A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by CPR.

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 TITLE III SECTION 311/312 CATEGORY:

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

SARA SECTIONS 302/304/313/HAP: NO

INTERNATIONAL CHEMICAL INVENTORY STATUS:



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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: California, New Jersey, Pennsylvania, Minnesota, Massachusetts, and Wisconsin. Complies with listed States Right to Know Acts.

The following statement is made in order to comply with the California State Drinking Water Act. California Proposition 65: This product contains Thiourea known to the State of California to cause cancer and/or to cause birth defects and other reproductive harm.

SECTION 16 – OTHER INFORMATION

HAZARDOUS WASTE NUMBER: D002

Precautions to be taken in Handling and Storing: Avoid exposure to excess heat, and prevent from freezing.

NFPA: 2, 0, 0. None

VOC (WT %): <0.06 (Calculated)

TARN-X PROTARNISH REMOVER CHEMICAL FATE INFORMATION: 28-day biodegradation. The matter is biodegradable: OECD 301D.

Other Precautions: None required.

SDS ABBREVIATIONS:	N. A.:	Not Applicable
	N. D.:	Not Determined
	N.E.:	Not Established
	C:	Ceiling Limit
	HAP:	Hazardous Air Pollutant
	VOC:	Volatile Organic Compound

Revision: GHS Format; Section 2 - Additional information; Section 11 **R. A. Gaudreault**

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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