SAFETY DATA SHEET

1. **Identification of Substance and Manufacturer:**
ELLANAR DIP PCN 173, 175, 210
Use: Silver cleaner. Use as is.
Manufacturer: L&R Manufacturing Company, 577 Elm Street, P.O. Box 607 Kearny, NJ 07032-0607 USA.
Publication Date: 05/04/2018 REV: J
Product information call 201-991-5330 www.lrultrasonics.com
For emergencies involving a spill, leak fire or accident contact CHEMTEL 800-255-3924 within the United States. Or 1-813-248-0585 for International calls.

2. **HAZARDS IDENTIFICATION**

DANGER! CORROSIVE! CAUSES SEVERE SKIN BURNS AND EYE DAMAGE. MAY BE HARMFUL IF SWALLOWED.

Good industrial hygiene practices should be used when handling this material.
Acute Eyes: Direct contact causes irritation, redness and possible tearing.
Acute Skin: Prolonged or repeated contact causes redness, and drying of the skin.
Acute Inhalation: Breathing high concentrations of vapors or mists may cause irritation to the nose and throat.
Acute Ingestion: Product is acidic and will cause irritation to the stomach, mucous membranes and sins of nervous depression
B: POTENTIAL HEALTH EFFECTS:
Chronic Effects: Chronic Effects: Contains materials (Thiourea and Sulfuric Acid (strong inorganic acid mists)) which may cause cancer.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	Percentage
Water	7732-18-5	88-92
Thiourea	062-56-6	4.5 – 7.5
Sulfuric Acid	7664-93-9	0.5 – 1.7
Anionic Surfactant	126-92-8	0.05 - 0.5

The exact concentration of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Eye Exposure: Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek medical attention.
Skin Exposure: Wash thoroughly with water. If irritation or redness develops, seek medical attention**.**
Inhalation: If respiratory irritation or distress occurs, move victim to fresh air. Seek medical attention if respiratory irritation or distress continues**.**
Ingestion: Seek immediate medical attention. DO NOT INDUCE VOMITING, Give large quantities of water if conscious.
MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE: Skin contact may aggravate existing skin disease.

5. FIRE FIGHTING MEASURES

FIRE HAZARD DATA: NOT COMBUSTIBLE
Suitable Extinguishing Media: Extinguish surrounding fire with dry chemical, CO_2 or a BC/ABC extinguisher.
Special Fire Fighting Procedures: None known
Unusual Fire and Explosion Hazards: Closed containers may burst due to build up of pressure when exposed to extreme heat.
Hazardous Decomposition Materials: (under fire conditions) None known.

6. ACCIDENTAL RELEASE MEASURES

Cleanup and Disposal of Spill: Mop up spill and dispose of by dilution to a sanitary sewer system as permitted by local, state and federal regulations.
Regulatory Reporting: Not required

7. HANDLING AND STORAGE

Minimum/Maximum Storage Temperatures: 40°F to 100^{O} F, 4°**C** to 88°**C.** Protect from freezing.
HANDLING: AVOID CONTACT WITH SKIN, EYES OR CLOTHING. WASH THROUGHLY AFTER HANDLING.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

General: These recommendations provide general guidance for handling of this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. When developing safe handling procedures, do not overlook the need to clean and dispose of the material. Waste resulting from the use of this product should be handled in accordance with

Section 13: Disposal Considerations.

Exposure Guidelines: Exposure limits are recommended worker breathing limits. The following limits apply to this material:

INGREDIENTS	LIMITS	INGREDIENTS	LIMITS
Thiourea (particulates)	10 mg/M3 ACGIH TWA	Sulfuric Acid	1 mg/M3 ACGIH TWA
Anionic Surfactant	None established		

Engineering Controls: Normal room ventilation.
Respiratory Controls: For reasonable uses of this material, respiratory protection should not be necessary.
Eye/Face Protection: Safety glasses to protect from splashing**.**
Skin Protection: Rubber or plastic gloves to avoid drying and irritation to the skin.
Work Practice Control: Normal hygiene in the work area should be taken when working with or handling this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Clear liquid with white precipitate **Color:** Water White **Odor:** Sulfur like odor
pH: 1.4 **Specific Gravity:** 1.1 **Odor Threshold:** Not available
Water Solubility: Soluble **Melting Point Range:** Not available **Evaporation Rate:** Not Applicable
Freezing Point Range: < 32°F **Boiling Point:** Approx. 212 degrees °F **Partition Coefficient; n-octanol / water:** Not available
Vapor Pressure: Not established **Vapor Density:** Not established **Decomposition Temperature:** Not available
Flash Point: None to boiling **Method:** Tag Closed Cup **Auto Ignition Temperature:** Not available
Flammability limits (vol/vol %): Lower: No Data **Upper**: No Data **Evaporation**: Very slow, similar to water
Percent volatile by volume: 90% by Volume **V.O.C. (calculated) :** < 5gm/l.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable
Conditions to be avoided: Protect from freezing and high temperatures
Materials/Chemicals to be avoided: Strong bases, oxidizing agents, monel, steel, iron, aluminum, porous surfaces and antiqued finish silver.
Decomposition Type: Thermal: Oxides of carbon, hydrogen and sulfur
Possibility of Hazardous Reactions: WILL NOT OCCUR

11. TOXICOLOGICAL INFORMATION

Acute Eye Irritation: Irritating to eyes. Thiourea: Draize test, rabbit, eye: 14%, Sulfuric Acid (90%): Draize test, rabbit, eye: 250 ug Severe
Acute Skin Irritation: May cause irritation to the skin.
Acute Dermal Toxicity: No test data found for product.
Acute Respiratory Irritation: No test data found for product.
Acute Inhalation Toxicity: May cause nose and throat irritation. Sulfuric Acid LC 50 510 mg/m3 2 hr
Acute Oral Toxicity: LD50 (rat) = 1750 mg/kg For Thiourea LD50 (rat) = 4 gm/kg For Anionic Surfactant
LD50 (rat) = 2140 mg/kg For Sulfuric Acid
Chronic Toxicity: This product does contain substances that are considered by NTP (Thiourea) suspect carcinogen, (Sulfuric Acid) listed as strong inorganic acid mists, IARC (Sulfuric Acid) overexposure to strong inorganic acid mists. ACGIH (Sulfuric Acid) overexposure to strong inorganic acid mists and California (Thiourea) and (Sulfuric Acid) listed as strong inorganic acid mist containing sulfuric acid to be a probable or suspected human carcinogen.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information: Aquatic toxicity: Sulfuric Acid (77%) slightly to moderately toxic Bluegill Sunfish: LC50 48 Hours 49mg/l. Thiourea Fish Fathead Minnow: LC50 > 600 mg/L: 96 Hr.

13. DISPOSAL CONSIDERATIONS

This product can be disposed in sanitary sewer system, with dilution, where permitted by local, federal and state regulations.

14. TRANSPORTATION INFORMATION

For approved domestic shippers classified as ORM-D for domestic ground transportation. For all other shippers and for export: Corrosive Liquid Inorganic n.o.s. (contains Sulfuric Acid), UN 3264, Class 8, PG III. This product cannot be shipped by air. Do not stack cartons more than five high

15. REGULATORY INFORMATION

Inventory Issues: All components of this product are listed on the U.S. TSCA, Canadian DSL**,** European EINECS/ELINS chemical listings

16. OTHER INFORMATION

Listed Australian Inventory of Chemical Substances (AICS.)
NATO Stock Number: 7930013780297
National Fire Protection Association

Hazard Rating, NFPA	Health	Flammability	Reactivity	Special
	3	0	0	--

SDS CHANGES

REV	DATE	DESCRIPTION OF CHANGE
J	**05/04/2018**	**Change o Emergency Contact**

Disclaimer: The information herein is given in good faith but no warranty expressed or implied is made. This SDS has been prepared by L&R Manufacturing Company.