

74I-0794-001194

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**THE ELCO CORPORATION**

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P.O. BOX 09168  
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74I-94-001194  
INIT 07/14/94

August 10, 1987



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Ms. Roberta Wedge  
Staff Scientist  
Dynamac corporation  
The Dynamac Building  
11140 Rockville Pike  
Rockville, Maryland 20852

Dear Ms. Wedge:

Enclosed please find a copy of a letter I recently sent to  
Dr. Stack at the CMA. It would appear to answer most of  
your questions.

If I can be of any further help, please feel free to contact  
me directly.

Very truly yours,

THE ELCO CORPORATION

W.T. Brannen,  
Executive Vice President

WTB:lj  
enc.

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August 4, 1987

Ms. Carol Stack  
Chemical Manufacturers Association  
2501 M Street, N.W.  
Washington, D.C. 20037

Dear Carol:

I was unable to obtain immediately a copy of Page 10409 (Federal Register Volume 52, 4/1/87) concerning details on the dialkyldithiophosphoric acid question. Rather than wait for a copy to be sent from our corporate library, I thought I would relate to you what information Elco had based on the questions you raised.

Elco is producing two products which are apparently listed. These are phosphorodithioic acid, 0,0-bis (2-ethylhexyl) ester (L-21612) and phosphorodithioic acid, 0,0-bis (n-propyl) ester (L-21613). According to the 1985 production and sales records of synthetic organic chemicals published by the U.S. International Trade Commission, Elco is the only manufacturer of these two products. Elco does not manufacture for sale any other phosphorodithioic acids.

Elco produces both these products for another chemical company to be used as starting materials in the manufacture of lubricating additives. The end product they produce is a metallic salt. The production volume for each ranges between 200,000 to 500,000 pounds. Except for a limited number of LTL drum shipments for pilot plant processing, nearly all the material is shipped bulk in tankwagons. The Elco plant in Hooven, Ohio, where these products are produced only employs 11 people. Since this material is a liquid and shipped in bulk quantities, the exposure to our plant personnel would be only two (2) people during basically the loading of the tank truck (during production these materials are in a sealed vessel). Their exposure would be less than 0.5 of an hour/man.

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Chemical Manufacturers Association  
Washington, D.C.

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August 4, 1987

It takes approximately 30 hours to produce 40,000 pounds.

There is no environmental impact concerning these two products at our plant site. During the production, in the sealed vessel, any vapors emitted go to a caustic scrubber (mainly to capture the hydrogen sulfide generated during production). The finished acid is filtered through a sealed bag filter to remove the inorganics ( $P_2S_5$ ) starting material. This is returned to the kettle for further reaction.

Elco has no formal storage capacity dedicated to these products. As a result, the product is loaded directly into tankwagons from the reaction vessel in its entirety. The customer does store the product at his plant site and normally takes at least two (2) tankwagons of the same product over a 7 to 10 day period. The same tank is used for both acids so that the customer converts the entire amount to the finished salt as quickly as possible.

Elco has not performed any type of toxicity test on these products since they are known strong acids. A copy of Material Safety Data Sheets on both are enclosed which indicate this fact.

I hope this helps answer some of the basic questions. If I can be of any further help, please let me know.

Very truly yours,

THE ELCO CORPORATION

W.T. Brannen,  
Executive Vice President

WTB:lj  
enc.  
dlp

**U.S. DEPARTMENT OF LABOR**

Form No. 100-000-1  
May 1969

**WAGE AND LABOR STANDARDS ADMINISTRATION  
Bureau of Labor Standards**

# MATERIAL SAFETY DATA SHEET

## SECTION I

MANUFACTURER'S NAME <b>The Elco Corporation</b>		EMERGENCY TELEPHONE NO. <b>313 358-3800</b>
ADDRESS (Number, Street, City, State, and ZIP Code) <b>P. O. Box 09168, Cleveland, Ohio 44109</b>		
CHEMICAL NAME AND SYNONYMS <b>Zinc Dialkyldithiophosphat</b>		TRADE NAME AND SYNONYMS <b>Elco 106</b>
CHEMICAL FAMILY <b>Dithiophosphoric Acid Salts (Zinc)</b>	FORMULA <b>(RO)<sub>2</sub>-PS<sub>2</sub>-Zn 1/2</b>	

## SECTION II HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)

## SECTION III PHYSICAL DATA

BOILING POINT (°F.)	Decomposes	SPECIFIC GRAVITY (H <sub>2</sub> O=1)	1.06
VAPOR PRESSURE (mm Hg.)	Unknown	PERCENT VOLATILE BY VOLUME (%)	0
VAPOR DENSITY (AIR=1)		EVAPORATION RATE (_____ = 1)	0.1
SOLUBILITY IN WATER	Neg.		
APPEARANCE AND ODOR	Straw Yellow in appearance with sweet odor like alcohol		

## SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) <b>C. O. C. 280° F.</b>	FLAMMABLE LIMITS	Lel	Uel
		<b>Unknown</b>	<b>Unknown</b>
EXTINGUISHING MEDIA <b>Carbon Dioxide, Dry chemical or foam</b>			
SPECIAL FIRE FIGHTING PROCEDURES <b>areas downwind from fire should be evacuated, fire fighters should use self-contained breathing apparatus.</b>			
UNUSUAL FIRE AND EXPLOSION HAZARDS			
<b>NONE</b>			

**SECTION V HEALTH HAZARD DATA**

THRESHOLD LIMIT VALUE	N. D.
EFFECTS OF OVEREXPOSURE	N. D.
EMERGENCY AND FIRST AID PROCEDURES	
Eye or skin contact - Wash with copious amounts of water - see physician - This product is a mild eye irritant. The LD <sub>50</sub> rating is 2.31 ml/kg (rats)	

**SECTION VI REACTIVITY DATA**

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	Strong oxidizing agents. Heat, sparks, open flames
INCOMPATIBILITY (Materials to avoid) Bromine, chlorine, chromic acid, hydrogen peroxide, etc.			
HAZARDOUS DECOMPOSITION PRODUCTS CO, CO <sub>2</sub> oxides of sulfur, H <sub>2</sub> S, oxides of phosphorus and sulfur			
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

**SECTION VII SPILL OR LEAK PROCEDURES**

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Remove source of ignition, soak up with absorbent or treat as oil spill.
WASTE DISPOSAL METHOD
Burn under controlled and approved methods or bury in approved disposal site.

**SECTION VIII SPECIAL PROTECTION INFORMATION**

RESPIRATORY PROTECTION (Specify type)	None		
VENTILATION	LOCAL EXHAUST	X	SPECIAL
	MECHANICAL (General)		OTHER
PROTECTIVE GLOVES	Rubber Gloves	EYE PROTECTION	Safety goggles
OTHER PROTECTIVE EQUIPMENT			

**SECTION IX SPECIAL PRECAUTIONS**

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	This material is heat sensitive. Do not store above 100°F. (long duration) Otherwise treat like oil.
OTHER PRECAUTIONS	

While the information and recommendations sent forth herein are believed to be accurate as of the date hereof, The Elco Corporation MAKES NO WARRANTY WITH RESPECT THERETO AND CLAIMS ALL LIABILITY FROM RELIANCE THEREON. 5/1/77