CASWELL [redacted]

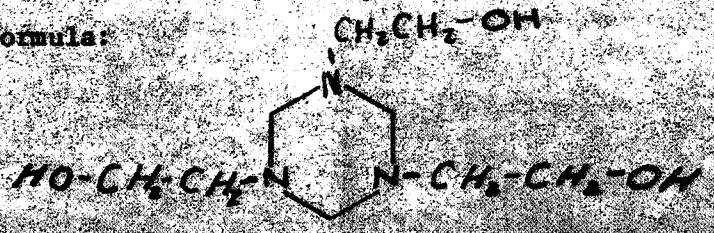
481C

LBDALE:mtw
September 18, 1967

Chemical Name: Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine

Product Name: Grotan

Structural Formula:



Use: Bactericide, Slimicide and Fungicide for the preservation of Metal cutting fluids and coolants.

Company: Lehn and Fink Industrial Products Corporation

Data Summary

Acute Rat Oral	:	LD_{50} = 0.8 (0.678-0.944) ml/kg Death usually occurred within 24 hours preceded by comatosis.
Eye Irritation (Rabbit)	:	No irritation at 0.75% in 3.3% cutting oil both rinsed and unrinsed.
Subacute Rabbit Dermal	:	No significant physiological changes at 0.15%, 0.7% and 1.5% in 3% Trim cutting oil.
Subacute Guinea Pig Inhalation	:	No treatment related lesions in test animals following exposure to 0.15% and 1.5% in cutting oil diluted 1 to 33 with distilled water 8 hours a day.
Human Dermal Irritation	:	Patch test of 0.15% concentration in cutting oil produced no irritation when applied for ten consecutive days.
Industrial Experience	:	Grotan was used experimentally in cutting oils in four industrial works for six weeks with no ill effects reported.

Grotan

Acute Rat Oral

Ten rats (5 male and 5 female) were used at each dosage level of 0.2, 0.6, 0.8, 1.0 and 1.2 ml/kg. The compound was administered via stomach tube. The animals were observed for five days for toxic effects.

Results

Toxicity was evidenced by ataxia, emesis or death. The LD_{50} = 0.8 ml/kg with a 19/20 confidence limits of 0.678 ml to 0.944 ml/kg of fasted rat.

Rabbit Eye Irritation

0.1 ml of 0.75% Grotan in 3.3% grinding fluid was instilled in one eye of a group of albino rabbits, the other eye being left as control. A second group was treated in the same manner except the treated eye was washed with 20 ml of lukewarm water two seconds after instillation of the test substance. The test eyes were examined at 1, 2, 3, 4, and seven days after instillation and scored by the method of Draize.

Results

No irritation was observed in the conjunctivae, iris or cornea of either group of rabbits at any examination period.

Subacute Rabbit Dermal

70 albino rabbits equally divided as to sex and weighing 2 to 3 kg each were employed in the experiment. Each rabbit had its back clipped free of all hair. One half of the animals received abrasions through stratum corneum, but not sufficiently deep to disturb the dermis. The test material, Grotan, was diluted in 3% Trim cutting oil to concentrations of 0.15%, 0.75% and 1.5% and applied to the clipped intact and abraded skin of each animal, five days a week, for 15 applications. The animals were restrained for six hours after each application after which the material was wiped off the skin.

A complete blood count (percent hematocrit, grams hemoglobin, red and white cell count and differential) and a complete urinalysis (specific gravity, PH, sugar, albumin and microscopic examinations) was performed in each animal initially and after 15 days of treatment. Organ weights were recorded for kidneys, liver, spleen, adrenal glands, gonads and heart. Gross examination was made of a major organ systems and the treated skin at necropsy. Histopathological evaluation was made of the treated skin, heart, trachea, esophagus, thyroid glands, stomach, liver, kidneys, spleen pancreas, small and large intestines, gonads and bone marrow of each animal.

Results

Clinical Observations

The hematological values and urinalysis did not show any significant differences between the two test and control groups.

Irritation

The skin of the treated animals gave no evidence of erythema or edema. The abraded skin healed at the normal rate.

Organ Weights

The weights of the organs examined did not differ significantly from control values.

Gross Examination

Examination of the major organ systems at necropsy revealed a normal picture.

Histopathology

No significant changes were produced by the treatment.

Subacute Guinea Pig Inhalation

Thirty animals, equally divided as to sex and weighing 150 to 200 grams were used in the study. The group of five males and five females were placed in a chamber. The animals were exposed to a continuous aerosol of 1.5% Grotan plus cutting oil, 0.15% Grotan plus cutting oil, and cutting oil diluted 1 to 33 with distilled water for eight hours a day, five days per week for four weeks.

Body weights were recorded initially in each week for four weeks. Complete blood counts were made initially and at the end of four weeks exposure. Organ weights were recorded for the kidney, liver, spleen, adrenal glands and heart of each surviving animal. Histopathological examinations were made of the heart, lungs, liver, kidneys and spleen of all surviving animals.

Results

Body Weight

All animals showed a normal weight increase.

Hematology

There was no significant change from initial values in any group.

Organ Weights

No significant difference between groups.

Gross Observation

There were no macroscopic changes in any group with the exception of the presence of hemorrhagic areas in the lungs of all groups tested.

Histopathology

Examination of sections of the heart, lung, liver, kidneys, and spleen of the test animals did not reveal any significant histopathological findings that could be attributed the treatment. Some degree of emphysema was present in almost all the lungs examined.

Human Dermal Irritation

Ten adults were used as subjects. A 0.15 concentration of the test substance in cutting oil and water was applied to one inch squares of non-woven cloth. The square was held in contact with the skin for 24 hours with occlusive, impermable tape for 24 hours and reapplied each day at the same site for ten consecutive days. The number of subjects reacting for each of the ten days to the compound, calculated cumulatively is registered and a mean frequency score numbers reacting daily and dividing by ten.

Results

No irritation was produced in any test site.

U DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PESTICIDES REGULATION DIVISION
WASHINGTON, D. C. 20250

INTERDEPARTMENTAL COORDINATION OF ACTIVITIES RELATING TO PESTICIDES

Referral of Application for Registration under the Federal Insecticide, Fungicide, and Rodenticide Act

1. APPLICANT

[redacted]
LEHN & FINK INDUSTRIAL PRODUCTS DIV.
225 [redacted] AVENUE
[redacted]VALE, NEW JERSEY

2. PRODUCT

[redacted]

3. DATE OF REFERRAL

9/13/[redacted] of 9/15/67

4. COMMENTS BY COORDINATING AGENCY

Separate the statement "Keep out of reach of children" from the text

6. DATE

7. NAME OF AGENCY

ela

PR [illegible]

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GROTAN

Trademark

pat. 2,990,266

A LONG LASTING BROAD SPECTRUM BACTERICIDE, SLIMICIDE; AND FUNGICIDE FOR THE PRESERVATION OF METAL CUTTING FLUIDS AND COOLANTS.

DIRECTIONS:

SOLUBLE EMULSION AND SYNTHETIC CUTTING FLUIDS

1. For best results, drain and clean the system before adding fresh cutting fluid.
2. Add 0.15% of GROTAN to the use dilution. (1.2 pints per 100 gallons of diluted cutting fluid)
3. 0.15% of GROTAN should be added to the use dilution of the make-up fluid.

ACTIVE INGREDIENT:

Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine 78.5%

~~1, 3, 5 tri (hydroxyethyl) cyanotriacid hexahydrotriazine~~

INERT INGREDIENTS: 21.5%

Total 100.0%

CAUTION: GROTAN CONCENTRATE is harmful if swallowed. Avoid skin contact and splashing in eyes. Wash eyes with large amounts of water if exposed. If irritation persists, get medical attention. Keep out of reach of children.

U.S.D.A. Registration #_____

NET CONTENTS_____ Gallons

GROSS_____ lbs. NET_____ lbs. TARE_____ lbs.

LEHN & FINK INDUSTRIAL PRODUCTS CORPORATION, Distributor
4934 Lewis Avenue, Toledo, Ohio 43612

Separate the statement "Keep out of reach of children" from the text.

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