



## Gear Treatment

Inside gear box no combustion only metal parts moving. But different from the other parts inside engine. Because they are many teeth steel. When it moving they are spread out the oil and making foam. When oil become foam it will no film to protect the metal to metal. Wearing start from this point. Friction will be high friction. Metal parts become powder and mixing with the oil and make more grinding. Same as we are washing car by shampoo and mixing with the sand. Because inside gear box no oil filter.

High heat it will become high temperature absorb oxygen fast contamination. Corrosion become fast. Gap of teeth gear start noise and have sound. This is happen when too much metal. Gear change not smooth.

In automatic it is similar with hydraulic system but inside they have clutch that made by material like brake pad. It will destroy and come out day by day mix with gear oil it will become gummy.

Before using gear treatment we must clean by flush because of this reason.  
Remove metal particle,  
Remove acid to protect corrosion,  
Remove gummy which happen and make gear shifting not smoothly change.

Gear treatment containing.  
Metal treatment protect metal to metal.  
Anti-Foaming.  
Anti-oxidation.  
Anti-sludge and acid.  
Anti-corrosion.



Inside gear oil they are containing high Zince which is effect to alumilum body of gear box. Zince is the chemical they are using for anti -wear purpose but it is harmful for aluminum body of gear box.

EZI gear treatment contain DI-Zince that mean control Zince effect no dangerous for any material. Same keep tiger mouth by block cover cannot bit any one.

## Benefit.

1. Reduce wearing inside gear teeth 71% from test report.
2. Less noise.
3. Smooth shifting.
4. Less heat during working time.
5. Longer oil life time.

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★ ประหยัดพลังงาน  
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## Material Safety Data Sheet

### 1. Identification of the Substance / Preparation and Company / Undertaking

Product Name : Gear Treatment  
Technical Name : Metal Treatment  
: Metal Conditioner  
: Anti - Friction Treatment  
: Friction Modifier  
Validation Date : 31 December 2013

In Case of Emergency Call :

#### Manufacturer / Supplier

Pheeramas Group Company Limited.  
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### 2. Composition and Information on Ingredients

Product Description - Metal Treatment Concentrated, it's the complex chemical containing the chemical ingredients.  
- The main composition are include Phosphorus, Zinc, Barium and Dioctyl not more than 39 %  
- The rest of 61 % of containing are Hydrocarbhone and others additive.

Hazardous Ingredient(S) : Contains no Hazardous Ingredients in accordance with EC Directive 93 / 112 / EEC

Hazard Symbol "R" Phrases

### 3. Hazards Identification

Low acute toxicity under normal conditions of handling and use.

Slightly irritant to eyes.

Repeated exposure to high levels may produce liver and kidney damage.



## Material Safety Data Sheet

### 4. First Aid Measures

- Inhalation** : Remove patient from exposure, keep warm and at rest.
- Ingestion** : DO NOT induce vomiting. Wash out mouth with water and give 200-300 ml. (half a pint) of water to drink.
- Skin Contact** : Remove contaminated clothing. Wash Skin with soap and water.
- Eye Contact** : Irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 10 minutes. Obtain medical attention.
- Further Medical Treatment** : Unlikely to be required but if necessary treat symptomatically.

### 5. Fire-Fighting Measures

Non-Flammable

May decompose if heated above 200 Deg C with liberation of phosphoric / sulfuric

**Extinguishing Media** : Normal extinguishing media

**Fire Fighting Protective Equipment** : A self contained breathing apparatus and full protective clothing should be worn in fire conditions.

### 6. Accidental Release Measures

**Caution** - spillages may be slippery.

Absorb spillages onto sand, earth or any suitable adsorbent material.

Transfer to a container for disposal.

Do not allow to enter drains, sewers or watercourses.

Spillages or uncontrolled discharges into watercourses must be alerted to the environment agency or other appropriate regulatory body.



## Material Safety Data Sheet

### 7. Handling and Storage

- Handling** : Avoid contact with eyes.  
Avoid prolonged skin contact.  
Provide adequate ventilation where operational procedures demand it.  
Do not allow to enter drains, sewers or watercourses.
- Storage** : Keep only in original container at temperatures not exceeding 40 Deg C.  
Keep container dry.  
Keep away from direct sunlight.  
Storage vessels should be made of lined mild steel in accordance with the advice given in bulk storage and handling brochure.
- Storage Life** : In excess of 2 years if stored in accordance with advice given above.

### 8. Exposure Controls and Personal Protection

- If prolonged or excessive skin contact is likely : Wear suitable protective clothing and gloves.
- If splashing or mist is likely to occur : Wear eye / face protection.
- Good working practice suggests gloves and goggles should be worn.

#### Occupational Exposure Limits

Hazardous Ingredient(s)	LTEL 8 hr TWA		STEL		Notes
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
No Occupational Exposure limit Assigned					

### 9. Physical and Chemical Properties

For specific physical properties of individual grades, please refer to technical literature and / or product specifications.

- Form** : Mobile liquid - viscous liquid.
- Odour** : low
- Boiling Point (Deg C)** : >200, Decomposes below boiling point.
- Flash Point (Deg C)** : None
- Vapor Pressure** : Practically non-volatile
- Solubility (Water)** : Insoluble
- Solubility (Other)** : Soluble in most aromatic hydrocarbons, solvents, esters and ketones.
- Pour Point (Deg C)** : -40 to +27



## Material Safety Data Sheet

### 10. Stability and Reactivity

- Hazardous Reactions** : Can react with alkali metals and alkaline earth metals which have a strong affinity  
Friction Proofing can react with iron, zinc and aluminium at high temperatures leading to decomposition.
- Conditions to avoid** : Strong oxidising agents, heat and hot surfaces.
- Hazardous Decomposition Product(s)** : Prolonged heating at temperatures in excess of 180°C or heating above 200°C for short periods of time will result in decomposition.

### 11. Toxicological Information

This health hazard assessment is based on information available on similar products.

- Inhalation** : Unlikely to be hazardous by inhalation.
- Skin Contact** : Unlikely to cause skin irritation in man.
- Eye Contact** : By analogy with a similar substance this material is likely to cause slight eye irritation.
- Ingestion** : Unlikely to be hazardous if swallowed.
- Long term Exposure** : Repeated exposure to high levels may produce liver and kidney damage chronic ingestion studies in animals have shown that repeated doses of a similar complex chemical blend (C14-17 52%) gave no effect levels in the range of 250-300 ppm. Slight effects on the liver were seen at higher doses. Adverse effects (blood disorders) have been seen in newborn rats, reared by dams fed on high doses of a similar complex chemical blend as a group of chemicals are not genotoxic. Their lack of genotoxic activity together with the results of other studies leads us to conclude that complex chemical are unlikely to present a carcinogenic hazard to man under normal conditions of handling and use.

### 12. Ecological Information

- Environmental Fate and Distribution** : High tonnage material produced in wholly contained systems.  
High tonnage material use in wholly contained systems.  
Liquid with low volatility.  
The product is essentially insoluble in water.  
The Product has potential for bioaccumulation.
- Persistence and Degradation** : There is evidence of partial hydrolysis in water.  
There is evidence of slow degradation in soil and water.
- Toxicity** : Unlikely to have any ecotoxic or environmentally toxic effect.
- Effect on Effluent Treatment** : The product is partially remove in biological treatment processes.



## Material Safety Data Sheet

### 13. Disposal Considerations

Do not discharge into drains or the environment, dispose to an authorized waste collection point. Disposal should be in accordance with local, state or national legislation.

### 14. Transport Information

Not classified as dangerous for transport.

### 15. Regulatory Information

Not classified as dangerous for supply / use

### 16. Other Information

#### PREPARATION INFORMATION

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#### ADDRESS CONTACT INFORMATION

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