

## 1. Identification

<b>Product identifier</b>	<b>Tgrease 2500, 2500 R</b>
<b>Other means of identification</b>	None.
<b>Recommended use</b>	Thermal interface material.
<b>Recommended restrictions</b>	None known.
<b>Manufacturer/Importer/Supplier/Distributor information</b>	
<b>Manufacturer</b>	Laird
<b>Address</b>	4707 Detroit Ave Cleveland, Ohio 44102 USA
<b>Telephone number</b>	+1-216-939-2300
<b>Email</b>	clv-customerservice@lairdtech.com
<b>Manufacturer</b>	Laird
<b>Address</b>	C3&C4 Building, HongTai Industry Park, NO.87 Tai Feng Road, TEDA, Tianjin, China
<b>Telephone number</b>	+86(0)22-66298160
<b>Emergency telephone number</b>	0086-022-66298160 # 825 (24 hours)
<b>Corporate Office</b>	Laird PLC
<b>Address</b>	100 Pall Mall, London, SW1Y 5NQ United Kingdom
<b>Telephone number</b>	+44 (0)20 7468 4040
<b>Emergency telephone number</b>	Within USA and Canada: 1-800-424-9300 (Chemtrec). Other Countries: +1-703-527-3887.
<b>Telephone hours</b>	24 hours per day, 7 days per week. Collect calls accepted.

## 2. Hazard(s) identification

<b>Physical hazards</b>	Not classified.
<b>Health hazards</b>	Not classified.
<b>Environmental hazards</b>	Hazardous to the aquatic environment, long-term hazard <span style="float: right;">Category 2</span>
<b>OSHA defined hazards</b>	Not classified.
<b>Label elements</b>	



<b>Signal word</b>	None.
<b>Hazard statement</b>	None.
<b>Precautionary statement</b>	
<b>Prevention</b>	Avoid release to the environment.
<b>Response</b>	Collect spillage.
<b>Storage</b>	Store away from incompatible materials.
<b>Disposal</b>	Dispose of waste and residues in accordance with local authority requirements.
<b>Hazard(s) not otherwise classified (HNOC)</b>	This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.

Supplemental information None.

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	CAS number	%
Zinc oxide	1314-13-2	10 - 25

### 4. First-aid measures

Inhalation	Not relevant, due to the form of the product.
Skin contact	Not relevant, due to the form of the product.
Eye contact	Not relevant, due to the form of the product.
Ingestion	Not relevant, due to the form of the product.
Most important symptoms/effects, acute and delayed	Under normal conditions of intended use, this product is not expected to be a health risk.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	First aid personnel must be aware of own risk during rescue.

### 5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	None.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials.
Specific methods	Cool containers exposed to flames with water until well after the fire is out.
General fire hazards	No unusual fire or explosion hazards noted.

### 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Sweep up or gather material and place in appropriate container for disposal. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

### 7. Handling and storage

Precautions for safe handling	No special precautions are necessary beyond normal good hygiene practices. See Section 8 of the SDS for additional personal protection advice when handling this product. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in closed original container in a dry place. Store away from incompatible materials (see Section 10 of the SDS).

### 8. Exposure controls/personal protection

#### Occupational exposure limits

##### US. OSHA Table Z-1 Permissible Exposure Limits (PEL) for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Filler (CAS 1344-28-1)	PEL	5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.
Zinc oxide (CAS 1314-13-2)	PEL	5 mg/m <sup>3</sup>	Respirable fraction.
		5 mg/m <sup>3</sup>	Fume.

**US. OSHA Table Z-1 Permissible Exposure Limits (PEL) for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value	Form
		15 mg/m <sup>3</sup>	Total dust.

**US. OSHA Table Z-3 Permissible Exposure Limits (PEL) for Mineral Dusts (29 CFR 1910.1000)**

Components	Type	Value	Form
Filler (CAS 1344-28-1)	TWA	5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.
Zinc oxide (CAS 1314-13-2)	TWA	50 mppcf	Total dust.
		15 mppcf	Respirable fraction.
		5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.

**US. ACGIH Threshold Limit Values (TLV)**

Components	Type	Value	Form
Filler (CAS 1344-28-1)	TWA	1 mg/m <sup>3</sup>	Respirable fraction.
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m <sup>3</sup>	Respirable fraction.
	TWA	2 mg/m <sup>3</sup>	Respirable fraction.

**NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended**

Components	Type	Value
Zinc oxide (CAS 1314-13-2)	IDLH	500 mg/m <sup>3</sup>

**US. NIOSH: Pocket Guide to Chemical Hazards**

Components	Type	Value	Form
Zinc oxide (CAS 1314-13-2)	Ceiling	15 mg/m <sup>3</sup>	Dust.
	STEL	10 mg/m <sup>3</sup>	Fume.
	TWA	5 mg/m <sup>3</sup>	Fume.
		5 mg/m <sup>3</sup>	Dust.

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Appropriate engineering controls</b>	Used as intended, this product is not expected to generate potentially hazardous quantities of dust or fumes. In an industrial work environment no special precautions or control measures are required.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Not normally needed. If contact is likely, safety glasses with side shields are recommended.
<b>Skin protection</b>	
<b>Hand protection</b>	Not normally needed. For prolonged or repeated skin contact use suitable protective gloves.
<b>Skin protection</b>	
<b>Other</b>	No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.
<b>Respiratory protection</b>	Not normally needed.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**9. Physical and chemical properties****Appearance**

<b>Physical state</b>	Solid.
<b>Form</b>	Paste.

<b>Color</b>	White or Gray.
<b>Odor</b>	Mild.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not applicable (material is insoluble in water)
<b>Melting point/freezing point</b>	Property has not been measured.
<b>Initial boiling point and boiling range</b>	Property has not been measured.
<b>Flash point</b>	Not applicable.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Non flammable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Explosive limit - lower (%)</b>	Not applicable.
<b>Explosive limit - upper (%)</b>	Not applicable.
<b>Vapor pressure</b>	Not applicable, material is a solid.
<b>Vapor density</b>	Not applicable, material is a solid.
<b>Relative density</b>	3.44 g/cm <sup>3</sup>
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Insoluble.
<b>Partition coefficient (n-octanol/water)</b>	Not applicable, product is a mixture.
<b>Auto-ignition temperature</b>	Not applicable.
<b>Decomposition temperature</b>	Property has not been measured.
<b>Viscosity</b>	2500000 cP at 20 °C
<b>Other information</b>	
<b>Bulk density</b>	3.44 g/cc at 25 °C
<b>Explosive properties</b>	Not explosive.
<b>Kinematic viscosity</b>	Property has not been measured.
<b>Oxidizing properties</b>	Not oxidizing.

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Contact with incompatible materials.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Not likely, due to the form of the product.
<b>Skin contact</b>	No adverse effects due to skin contact.
<b>Eye contact</b>	No adverse effects due to eye contact are expected.
<b>Ingestion</b>	No harmful effects expected in amounts likely to be ingested by accident.

**Symptoms related to the physical, chemical and toxicological characteristics** Under normal conditions of intended use, this product is not expected to be a health risk.

### Information on toxicological effects

<b>Acute toxicity</b>	Not expected to be acutely toxic.
<b>Skin corrosion/irritation</b>	Not classified.

<b>Serious eye damage/eye irritation</b>	Not classified.
<b>Respiratory or skin sensitization</b>	
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.
<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Carcinogenicity</b>	Not classifiable as to carcinogenicity to humans.
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>	Not listed.
<b>NTP Report on Carcinogens</b>	Not listed.
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)</b>	Not listed.
<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.
<b>Specific target organ toxicity - single exposure</b>	Not classified.
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.
<b>Aspiration hazard</b>	Not relevant, due to the form of the product.
<b>Chronic effects</b>	No known chronic or acute health risks.
<b>Further information</b>	None known.

## 12. Ecological information

<b>Ecotoxicity</b>	Toxic to aquatic life with long lasting effects.
<b>Persistence and degradability</b>	No data available.
<b>Bioaccumulative potential</b>	No data available.
<b>Mobility in soil</b>	The product is insoluble in water and will sediment in water systems.
<b>Other adverse effects</b>	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## 13. Disposal considerations

<b>Disposal instructions</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.
<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</b>	Dispose in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

### DOT

<b>UN number</b>	UN3077
<b>UN proper shipping name</b>	Environmentally hazardous substance, solid, n.o.s. (Zinc oxide)
<b>Transport hazard class(es)</b>	
<b>Class</b>	9
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	9
<b>Packing group</b>	III
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	No.
<b>Special precautions for user</b>	Not assigned.
<b>Special provisions</b>	8, 146, 335, A112, B54, B120, IB8, IP3, N20, T1, TP33
<b>Packaging exceptions</b>	155
<b>Packaging non bulk</b>	213

**Packaging bulk** 240

**IATA**

**UN number** UN3077

**UN proper shipping name** Environmentally hazardous substance, solid, n.o.s. (Zinc oxide)

**Transport hazard class(es)**

**Class** 9

**Subsidiary risk** -

**Packing group** III

**Environmental hazards** No.

**ERG Code** 9L

**Special precautions for user** Not assigned.

**IMDG**

**UN number** UN3077

**UN proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide) (Zinc oxide)

**Transport hazard class(es)**

**Class** 9

**Subsidiary risk** -

**Packing group** III

**Environmental hazards**

**Marine pollutant** No.

**EmS** F-A, S-F

**Special precautions for user** Not assigned.

Zinc oxide

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

## 15. Regulatory information

**US federal regulations** This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

### CERCLA Hazardous Substance List (40 CFR 302.4)

Zinc oxide (CAS 1314-13-2) Listed.

### SARA 304 Emergency release notification

Not regulated.

### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

**Toxic Substances Control Act (TSCA)** All components on the TSCA 8(b) inventory are designated "active".

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

#### SARA 302 Extremely hazardous substance

Not listed.

**SARA 311/312 Hazardous chemical** No (Exempt)

#### SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Filler	1344-28-1	60 - 80
Zinc oxide	1314-13-2	10 - 25

### Other federal regulations

#### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

#### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

## US state regulations

### US. Massachusetts RTK - Substance List

Filler (CAS 1344-28-1)  
Zinc oxide (CAS 1314-13-2)

### US. New Jersey Worker and Community Right-to-Know Act

Filler (CAS 1344-28-1)  
Zinc oxide (CAS 1314-13-2)

### US. Pennsylvania Worker and Community Right-to-Know Law

Filler (CAS 1344-28-1)  
Zinc oxide (CAS 1314-13-2)

### US. Rhode Island RTK

Filler (CAS 1344-28-1)  
Zinc oxide (CAS 1314-13-2)

### California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

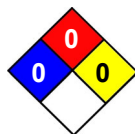
\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

Issue date	16-October-2015
Revision date	05-September-2023
Version #	04
HMIS® ratings	Health: 0 Flammability: 0 Physical hazard: 0 Personal protection: B

### NFPA ratings



### References

ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices  
EPA: AQUIRE database  
HSDB® - Hazardous Substances Data Bank  
IARC Monographs. Overall Evaluation of Carcinogenicity  
National Toxicology Program (NTP) Report on Carcinogens

**Disclaimer**

Laird cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.