



## Safety Data Sheet according to (EC) No 1907/2006 as amended

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BERGQUIST TGR 1500A known as TIC1000A

SDS No. : 636429  
V002.0

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### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

BERGQUIST TGR 1500A known as TIC1000A

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use:

Thermal Interface Material

#### 1.3. Details of the supplier of the safety data sheet

Henkel Ltd

Wood Lane End

HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 1442 278000

Fax-no.: +44 1442 278071

ua-productsafety.uk@henkel.com

#### 1.4. Emergency telephone number

24 Hours Emergency Tel: +44 (0)1442 278497

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification (CLP):

The substance or mixture is not hazardous according to Regulation (EC) No 1272/2008 (CLP).

#### 2.2. Label elements

##### Label elements (CLP):

The substance or mixture is not hazardous according to Regulation (EC) No 1272/2008 (CLP).

**Supplemental information** Safety data sheet available on request.

#### 2.3. Other hazards

None if used properly.

Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

##### Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
aluminium powder (stabilised) 7429-90-5	231-072-3 01-2119529243-45	50- 100 %	Water-react. 2 H261 Pyr. Sol. 1 H250
Triethoxyoctylsilane 2943-75-1	220-941-2 01-2119972313-39	1- < 5 %	Skin Irrit. 2; Dermal H315 Flam. Liq. 3 H226

For full text of the H - statements and other abbreviations see section 16 "Other information".  
Substances without classification may have community workplace exposure limits available.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

##### Inhalation:

Move to fresh air. If symptoms persist, seek medical advice.

##### Skin contact:

Rinse with running water and soap.

Obtain medical attention if irritation persists.

##### Eye contact:

Rinse immediately with plenty of running water (for 10 minutes), seek medical attention from a specialist.

##### Ingestion:

Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.

#### 4.2. Most important symptoms and effects, both acute and delayed

Prolonged or repeated contact may cause skin irritation.

Prolonged or repeated contact may cause eye irritation.

Prolonged or repeated contact may cause skin irritation.

#### 4.3. Indication of any immediate medical attention and special treatment needed

See section: Description of first aid measures

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

##### Suitable extinguishing media:

water, carbon dioxide, foam, powder

##### Extinguishing media which must not be used for safety reasons:

High pressure waterjet

#### 5.2. Special hazards arising from the substance or mixture

In the event of a fire, carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) can be released.  
Silicon dioxide

#### 5.3. Advice for firefighters

Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

**Additional information:**

In case of fire, keep containers cool with water spray.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

Avoid contact with skin and eyes.

Wear protective equipment.

Ensure adequate ventilation.

Remove sources of ignition.

**6.2. Environmental precautions**

Do not empty into drains / surface water / ground water.

**6.3. Methods and material for containment and cleaning up**

For small spills wipe up with paper towel and place in container for disposal.

For large spills absorb onto inert absorbent material and place in sealed container for disposal.

Dispose of contaminated material as waste according to Section 13.

**6.4. Reference to other sections**

See advice in section 8

**SECTION 7: Handling and storage****7.1. Precautions for safe handling**

Avoid skin and eye contact.

See advice in section 8

Hygiene measures:

Good industrial hygiene practices should be observed.

Wash hands before work breaks and after finishing work.

Do not eat, drink or smoke while working.

**7.2. Conditions for safe storage, including any incompatibilities**

Ensure good ventilation/extraction.

Keep container tightly sealed.

Refer to Technical Data Sheet

**7.3. Specific end use(s)**

Thermal Interface Material

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational Exposure Limits

Valid for  
Great Britain

Ingredient [Regulated substance]	ppm	mg/m <sup>3</sup>	Value type	Short term exposure limit category / Remarks	Regulatory list
Aluminium 7429-90-5 [ALUMINIUM METAL, INHALABLE DUST]		10	Time Weighted Average (TWA):		EH40 WEL
Aluminium 7429-90-5 [ALUMINIUM METAL, RESPIRABLE DUST]		4	Time Weighted Average (TWA):		EH40 WEL

#### Occupational Exposure Limits

Valid for  
Ireland

Ingredient [Regulated substance]	ppm	mg/m <sup>3</sup>	Value type	Short term exposure limit category / Remarks	Regulatory list
Aluminium 7429-90-5 [ALUMINIUM METAL, RESPIRABLE DUST]	1		Time Weighted Average (TWA):		IR_OEL

#### Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
Triethoxyoctylsilane 2943-75-1	aqua (freshwater)		0,0058 mg/l				
Triethoxyoctylsilane 2943-75-1	aqua (marine water)		0,00058 mg/l				
Triethoxyoctylsilane 2943-75-1	sediment (freshwater)				0,51 mg/kg		
Triethoxyoctylsilane 2943-75-1	sediment (marine water)				0,051 mg/kg		
Triethoxyoctylsilane 2943-75-1	Soil				0,08 mg/kg		
Triethoxyoctylsilane 2943-75-1	sewage treatment plant (STP)		>= 100 mg/l				

**Derived No-Effect Level (DNEL):**

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Triethoxyoctylsilane 2943-75-1	Workers	inhalation	Long term exposure - systemic effects		16 mg/m <sup>3</sup>	
Triethoxyoctylsilane 2943-75-1	Workers	inhalation	Acute/short term exposure - systemic effects		16 mg/m <sup>3</sup>	
Triethoxyoctylsilane 2943-75-1	Workers	dermal	Long term exposure - systemic effects		9,1 mg/kg	
Triethoxyoctylsilane 2943-75-1	Workers	dermal	Acute/short term exposure - systemic effects		9,1 mg/kg	
Triethoxyoctylsilane 2943-75-1	General population	inhalation	Long term exposure - systemic effects		5,4 mg/m <sup>3</sup>	
Triethoxyoctylsilane 2943-75-1	General population	inhalation	Acute/short term exposure - systemic effects		5,4 mg/m <sup>3</sup>	
Triethoxyoctylsilane 2943-75-1	General population	dermal	Long term exposure - systemic effects		6,2 mg/kg	
Triethoxyoctylsilane 2943-75-1	General population	dermal	Acute/short term exposure - systemic effects		6,2 mg/kg	
Triethoxyoctylsilane 2943-75-1	General population	oral	Long term exposure - systemic effects		6,2 mg/kg	
Triethoxyoctylsilane 2943-75-1	General population	oral	Acute/short term exposure - systemic effects		6,2 mg/kg	

**Biological Exposure Indices:**

None

**8.2. Exposure controls:**

Engineering controls:

Ensure good ventilation/extraction.

Respiratory protection:

Ensure adequate ventilation.

An approved mask or respirator fitted with an organic vapour cartridge should be worn if the product is used in a poorly ventilated area

Filter type: A (EN 14387)

Hand protection:

Chemical-resistant protective gloves (EN 374).

Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to &gt; 30 minutes permeation time as per EN 374):

nitrile rubber (NBR;  $\geq$  0.4 mm thickness)

Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to &gt; 480 minutes permeation time as per EN 374):

nitrile rubber (NBR;  $\geq$  0.4 mm thickness)

This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Eye protection:

Safety glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing.

Protective eye equipment should conform to EN166.

**Skin protection:**

Wear suitable protective clothing.

Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

**Advices to personal protection equipment:**

The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions. Personal protective equipment should conform to the relevant EN standard.

## SECTION 9: Physical and chemical properties

**9.1. Information on basic physical and chemical properties**

Appearance	liquid liquid grey
Odor	None
Odour threshold	No data available / Not applicable
pH	No data available / Not applicable
Melting point	No data available / Not applicable
Solidification temperature	No data available / Not applicable
Initial boiling point	No data available / Not applicable
Flash point	> 100 °C (> 212 °F)
Evaporation rate	No data available / Not applicable
Flammability	No data available / Not applicable
Explosive limits	No data available / Not applicable
Vapour pressure	No data available / Not applicable
Relative vapour density:	No data available / Not applicable
Density ( $\rho$ )	2,1 g/cm <sup>3</sup>
Bulk density	No data available / Not applicable
Solubility	No data available / Not applicable
Solubility (qualitative)	No data available / Not applicable
Partition coefficient: n-octanol/water	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Decomposition temperature	No data available / Not applicable
Viscosity	No data available / Not applicable
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Oxidising properties	No data available / Not applicable

**9.2. Other information**

No data available / Not applicable

## SECTION 10: Stability and reactivity

**10.1. Reactivity**

Reacts with oxidants, acids and lyes

**10.2. Chemical stability**

Stable under recommended storage conditions.

**10.3. Possibility of hazardous reactions**

See section reactivity

**10.4. Conditions to avoid**

Stable under normal conditions of storage and use.  
Excessive heat.

**10.5. Incompatible materials**

See section reactivity.

**10.6. Hazardous decomposition products**

No decomposition if used according to specifications.

**SECTION 11: Toxicological information****General toxicological information:**

Prolonged or repeated contact may cause skin irritation.

Prolonged or repeated contact may cause eye irritation.

**11.1. Information on toxicological effects****Acute oral toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
aluminium powder (stabilised) 7429-90-5	LD50	> 15.900 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
Triethoxyoctylsilane 2943-75-1	LD50	> 5.110 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)

**Acute dermal toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Triethoxyoctylsilane 2943-75-1	LD50	6.730 mg/kg	rabbit	equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity)

**Acute inhalative toxicity:**

No data available.

**Skin corrosion/irritation:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
Triethoxyoctylsilane 2943-75-1	irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

**Serious eye damage/irritation:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
Triethoxyoctylsilane 2943-75-1	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

**Respiratory or skin sensitization:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Test type	Species	Method
Triethoxyoctylsilane 2943-75-1	not sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)

**Germ cell mutagenicity:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Triethoxyoctylsilane 2943-75-1	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Triethoxyoctylsilane 2943-75-1	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Triethoxyoctylsilane 2943-75-1	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)

**Carcinogenicity**

No data available.

**Reproductive toxicity:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Test type	Route of application	Species	Method
Triethoxyoctylsilane 2943-75-1	NOAEL P 300 mg/kg NOAEL F1 300 mg/kg	screening	oral: gavage	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

**STOT-single exposure:**

No data available.

**STOT-repeated exposure::**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Route of application	Exposure time / Frequency of treatment	Species	Method
Triethoxyoctylsilane 2943-75-1	NOAEL 300 mg/kg	oral: gavage	daily, 7d/w	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

**Aspiration hazard:**

No data available.



## SECTION 12: Ecological information

### General ecological information:

Do not empty into drains / surface water / ground water.

### 12.1. Toxicity

#### Toxicity (Fish):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
aluminium powder (stabilised) 7429-90-5	NOEC	> 100 mg/l	96 h	Salmo trutta	OECD Guideline 203 (Fish, Acute Toxicity Test)
Triethoxyoctylsilane 2943-75-1	LC50		96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)

#### Toxicity (Daphnia):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Triethoxyoctylsilane 2943-75-1	EC50		48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

#### Chronic toxicity to aquatic invertebrates

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Triethoxyoctylsilane 2943-75-1	NOELR		21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)

#### Toxicity (Algae):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Triethoxyoctylsilane 2943-75-1	NOEC		72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Triethoxyoctylsilane 2943-75-1	EC50		72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)

#### Toxicity to microorganisms

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Triethoxyoctylsilane 2943-75-1	EC50		3 h	activated sludge of a predominantly domestic sewage	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

### 12.2. Persistence and degradability

No data available for the product.

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
Triethoxyoctylsilane 2943-75-1	not readily biodegradable.	aerobic	18,7 %	29 d	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)

**12.3. Bioaccumulative potential**

Hazardous substances CAS-No.	Bioconcentration factor (BCF)	Exposure time	Temperature	Species	Method
Triethoxyoctylsilane 2943-75-1	1.450	56 d		Cyprinus carpio	OECD Guideline 305 (Bioconcentration: Flow-through Fish Test)

**12.4. Mobility in soil**

No data available for the product.

Hazardous substances CAS-No.	LogPow	Temperature	Method
Triethoxyoctylsilane 2943-75-1	6,41	30 °C	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)

**12.5. Results of PBT and vPvB assessment**

Hazardous substances CAS-No.	PBT / vPvB
Triethoxyoctylsilane 2943-75-1	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

**12.6. Other adverse effects**

No data available.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods**

Product disposal:

Do not empty into drains / surface water / ground water.

Dispose of in accordance with local and national regulations.

Disposal of uncleaned packages:

After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.

Waste code

08 04 09 waste adhesives and sealants containing organic solvents and other dangerous substances

The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

**SECTION 14: Transport information**

- 14.1. UN number**  
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.2. UN proper shipping name**  
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.3. Transport hazard class(es)**  
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.4. Packing group**  
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.5. Environmental hazards**  
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.6. Special precautions for user**  
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**  
not applicable

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

VOC content < 5 %  
(2010/75/EC)

**15.2. Chemical safety assessment**

A chemical safety assessment has not been carried out.

**SECTION 16: Other information**

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

- H226 Flammable liquid and vapor.
- H250 Catches fire spontaneously if exposed to air.
- H261 In contact with water releases flammable gas.
- H315 Causes skin irritation.

**Further information:**

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