



SAFETY DATA SHEET

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

1.1. Product identifier

Trade name or designation of the mixture Gap Filler 1100SF Part A

Registration number -

Synonyms None.

Issue date 29-December-2011

Version number 04

Revision date 22-September-2015

Supersedes date 22-September-2015

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

Identified uses Thermally Conductive Gap Filler Material used together with Part B.

Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier The Bergquist Company

Address: 18930 West 78th Street
Chanhassen, MN. 55317

Non-Emergency calls: 1-800-347-4572

Contact person: AEHMSDS@henkel.com

1.4. Emergency telephone number

Chemical Emergency

Call CHEMTREC Day or Night

Within USA and Canada: 1-800-424-9300

Outside USA and Canada: +1 703-527-3887 (Collect Calls Accepted)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

This mixture does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

Hazard summary Not classified for health hazards. However, occupational exposure to the mixture or substance(s) may cause adverse health effects.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Hazard pictograms None.

Signal word Not applicable.

Hazard statements Not applicable.

Precautionary statements

Prevention Observe good industrial hygiene practices.

Response Wash thoroughly after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Supplemental label information This product is not hazardous according to Regulation (EC) No 1272/2008 as amended, therefore a hazard label does not apply.

2.3. Other hazards Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

The components are not hazardous or are below required disclosure limits.

SECTION 4: First aid measures

General information	Get medical attention if any discomfort develops.
4.1. Description of first aid measures	
Inhalation	Move to fresh air. Get medical attention if symptoms occur.
Skin contact	Wash skin with soap and water. Get medical attention if irritation persists after washing.
Eye contact	Flush thoroughly with water. If irritation occurs, get medical assistance.
Ingestion	Rinse mouth thoroughly. Get medical attention if any discomfort occurs.
4.2. Most important symptoms and effects, both acute and delayed	Under normal conditions of intended use, this material does not pose a risk to health.
4.3. Indication of any immediate medical attention and special treatment needed	Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards	This product is not flammable.
5.1. Extinguishing media	
Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	None known.
5.2. Special hazards arising from the substance or mixture	None.
5.3. Advice for firefighters	
Special protective equipment for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
Special fire fighting procedures	Move containers from fire area if you can do so without risk.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures	
For non-emergency personnel	Avoid contact with skin and eyes.
For emergency responders	Avoid contact with skin and eyes.
6.2. Environmental precautions	Environmental manager must be informed of all major spillages.
6.3. Methods and material for containment and cleaning up	Sweep up or gather material and place in appropriate container for disposal.
6.4. Reference to other sections	For personal protection, see Section 8 of the SDS. For waste disposal, see Section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling	Provide adequate ventilation. Avoid inhalation of dust and contact with skin and eyes. Observe good industrial hygiene practices. Wear appropriate personal protective equipment (See Section 8).
7.2. Conditions for safe storage, including any incompatibilities	Store in closed original container in a dry place. Store away from incompatible materials.
7.3. Specific end use(s)	Thermally Conductive Gap Filler Material used together with Part B.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	MAK	5 mg/m ³	Respirable fraction.
	STEL	10 mg/m ³	Inhalable fraction.
		20 mg/m ³	Inhalable fraction.
		10 mg/m ³	Respirable fraction.

Austria. MAK List

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	MAK	5 mg/m3	Respirable fume.
		5 mg/m3	Respirable fraction.
	STEL	10 mg/m3	Inhalable fraction.
		20 mg/m3	Inhalable fraction.
		10 mg/m3	Respirable fume.
		10 mg/m3	Respirable fraction.

Belgium. Exposure Limit Values.

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	1 mg/m3	Respirable fraction.

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	10 mg/m3	Dust.
		1,5 mg/m3	Respirable fraction.

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	MAC	4 mg/m3	Respirable dust.
		10 mg/m3	Total dust.

Czech Republic. OELs. Government Decree 361

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	0,1 mg/m3	Respirable dust.

Denmark. Exposure Limit Values

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TLV	5 mg/m3	Total
		2 mg/m3	Respirable.

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	4 mg/m3	Respirable dust.
		10 mg/m3	Total dust.

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Components	Type	Value
Aluminium oxide (CAS 1344-28-1)	VME	10 mg/m3

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	4 mg/m3	Inhalable dust.
Aluminium oxide (CAS 1344-28-1)	TWA	1,5 mg/m3	Respirable dust.
Aluminium oxide (CAS 1344-28-1)		4 mg/m3	Inhalable dust.
Aluminium oxide (CAS 1344-28-1)		1,5 mg/m3	Respirable dust.

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	AGW	10 mg/m ³	Inhalable fraction.
Aluminium oxide (CAS 1344-28-1)	AGW	1,25 mg/m ³ 10 mg/m ³	Respirable fraction. Inhalable fraction.
		1,25 mg/m ³	Respirable fraction.

Greece. OELs (Decree No. 90/1999, as amended)

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	5 mg/m ³	Inhalable
		10 mg/m ³	Respirable.

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	6 mg/m ³	Respirable.

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Components	Type	Value
Aluminium oxide (CAS 1344-28-1)	TWA	10 mg/m ³

Ireland. Occupational Exposure Limits

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	4 mg/m ³	Respirable dust.
		10 mg/m ³	Total inhalable dust.

Italy. OELs

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	1 mg/m ³	Respirable fraction.
Aluminium oxide (CAS 1344-28-1)	TWA	1 mg/m ³	Respirable fraction.

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	6 mg/m ³	
Aluminium oxide (CAS 1344-28-1)	TWA	6 mg/m ³	Decomposition aerosol.
		4 mg/m ³	

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements (Hygiene Norm HN 23:2007)

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	6 mg/m ³	
Aluminium oxide (CAS 1344-28-1)	TWA	5 mg/m ³	Inhalable fraction.
		2 mg/m ³	Respirable fraction.

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value
Aluminium oxide (CAS 1344-28-1)	TLV	10 mg/m ³

Poland. MACs. Regulation regarding maximum permissible concentrations and intensities of harmful factors in the work environment, Annex 1

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	2,5 mg/m ³	Inhalable fraction.
		1,2 mg/m ³	Respirable fraction.

Poland. MACs. Regulation regarding maximum permissible concentrations and intensities of harmful factors in the work environment, Annex 1

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	2,5 mg/m3	Inhalable fraction.
		1,2 mg/m3	Respirable fraction.

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Components	Type	Value
Aluminium oxide (CAS 1344-28-1)	TWA	10 mg/m3

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	STEL	5 mg/m3	Aerosol
		1,2 ppm	Aerosol
		2 mg/m3	Aerosol
		0,5 ppm	Aerosol

Slovakia. OELs. Decree of the government of the Slovak Republic concerning protection of health in work with chemical agents

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	4 mg/m3	Inhalable fraction.
		1,5 mg/m3	Respirable fraction.
Aluminium oxide (CAS 1344-28-1)	TWA	4 mg/m3	Inhalable fraction.
		1,5 mg/m3 0,1 mg/m3	Respirable fraction.

Spain. Occupational Exposure Limits

Components	Type	Value
Aluminium oxide (CAS 1344-28-1)	TWA	10 mg/m3

Sweden. Occupational Exposure Limit Values

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	5 mg/m3	Total dust.
		2 mg/m3	Respirable dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	3 mg/m3	Respirable dust.
Aluminium oxide (CAS 1344-28-1)	STEL	24 mg/m3	Fume and respirable dust.
		3 mg/m3	Respirable dust.
	TWA	3 mg/m3	Fume and respirable dust.
		3 mg/m3	Respirable dust.

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	4 mg/m3	Respirable dust.
		10 mg/m3	Inhalable dust.

Biological limit values No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no-effect level (DNEL) Not available.

Predicted no effect concentrations (PNECs) Not available.

Exposure guidelines	Follow standard monitoring procedures.
8.2. Exposure controls	
Appropriate engineering controls	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
Individual protection measures, such as personal protective equipment	
General information	Use personal protective equipment as required. Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.
Eye/face protection	Risk of contact: Wear approved safety goggles.
Skin protection	
- Hand protection	Use suitable protective gloves if risk of skin contact. Suitable gloves can be recommended by the glove supplier.
- Other	If prolonged or repeated contact is likely, chemical resistant clothing is recommended.
Respiratory protection	In case of inadequate ventilation, use respiratory protection.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
Hygiene measures	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. Discard contaminated clothing and footwear that cannot be cleaned.
Environmental exposure controls	Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance Yellow. Viscous liquid.

Physical state Liquid.

Form Viscous liquid.

Colour Yellow.

Odour Slight.

Odour threshold Not available.

pH Not available.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point Not relevant.

Evaporation rate Not available.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not relevant.

Flammability limit - upper (%) Not relevant.

Explosive limit - lower (%) Not relevant.

Explosive limit – upper (%) Not relevant.

Vapour pressure Not relevant.

Vapour density Not available.

Solubility(ies) Insoluble.

Partition coefficient (n-octanol/water) Not relevant.

Auto-ignition temperature Not relevant.

Decomposition temperature Not available.

Viscosity Not available.

Explosive properties Not available.

Oxidizing properties Not available.

9.2. Other information

Bulk density Not relevant.

Density 2,03 at 23°C

VOC (Weight %) < 1 %

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	Hazardous polymerisation does not occur.
10.4. Conditions to avoid	Contact with incompatible materials.
10.5. Incompatible materials	Strong oxidising agents.
10.6. Hazardous decomposition products	None.

SECTION 11: Toxicological information

General information Under normal conditions of intended use, this material does not pose a risk to health.

Information on likely routes of exposure

Inhalation Vapours may irritate throat and respiratory system and cause coughing.

Skin contact Prolonged skin contact may cause temporary irritation.

Eye contact May cause eye irritation on direct contact.

Ingestion Ingestion may cause irritation and malaise.

Symptoms Under normal conditions of intended use, this material does not pose a risk to health.

11.1. Information on toxicological effects

Acute toxicity Under normal conditions of intended use, this material does not pose a risk to health.

Skin corrosion/irritation Not classified.

Serious eye damage/eye irritation Not classified.

Respiratory sensitisation Not classified.

Skin sensitisation Not classified.

Germ cell mutagenicity Not classified.

Carcinogenicity Not classified.

Reproductive toxicity Not classified.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not classified.

Mixture versus substance information None known.

Other information None known.

SECTION 12: Ecological information

12.1. Toxicity The product is not classified as environmentally hazardous.

12.2. Persistence and degradability No data available.

12.3. Bioaccumulative potential No data available.

Partition coefficient n-octanol/water (log K_{ow}) Not available.

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil The product is insoluble in water.

12.5. Results of PBT and vPvB assessment Not a PBT or vPvB substance or mixture.

12.6. Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

Contaminated packaging	Since emptied containers retain product residue, follow label warnings even after container is emptied.
EU waste code	07 02 17 The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

SECTION 14: Transport information

ADR	Not regulated as dangerous goods.
RID	Not regulated as dangerous goods.
ADN	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended	Not listed.
Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended	Not listed.
Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended	Not listed.
Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended	Not listed.
Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended	Not listed.
Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended	Not listed.
Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended	Not listed.
Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA	Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended	Not listed.
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Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended	Not listed.
Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended	Not listed.
Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding, as amended	Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances	Not listed.
Directive 94/33/EC on the protection of young people at work	Not listed.

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended and respective national laws implementing EC directives.

National regulations

Follow national regulation for work with chemical agents.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information**List of abbreviations**

DNEL: Derived No-Effect Level.
PNEC: Predicted No-Effect Concentration.
PBT: Persistent, bioaccumulative and toxic.
vPvB: Very Persistent and very Bioaccumulative.

References

ESIS (European chemical Substances Information System)
Registry of Toxic Effects of Chemical Substances (RTECS)
HSDB® - Hazardous Substances Data Bank

Information on evaluation method leading to the classification of mixture

The mixture is classified based on test data for physical hazards. The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available. For details, refer to Sections 9, 11 and 12.

Full text of any H-statements not written out in full under Sections 2 to 15

None.

Training information

Follow training instructions when handling this material.

Disclaimer

The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.



SAFETY DATA SHEET

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

1.1. Product identifier

Trade name or designation of the mixture Gap Filler 1100SF Part B

Registration number -

Synonyms None.

Issue date 29-December-2011

Version number 08

Revision date 22-September-2015

Supersedes date 22-September-2015

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

Identified uses Thermally Conductive Gap Filler Material used together with Part A.

Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier The Bergquist Company

Address: 18930 West 78th Street
Chanhassen, MN. 55317

Non-Emergency calls: 1-800-347-4572

Contact person: AEHMSDS@henkel.com

1.4. Emergency telephone number

Chemical Emergency

Call CHEMTREC Day or Night

Within USA and Canada: 1-800-424-9300

Outside USA and Canada: +1 703-527-3887 (Collect Calls Accepted)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

This mixture does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

Hazard summary Not classified for health hazards. However, occupational exposure to the mixture or substance(s) may cause adverse health effects.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Hazard pictograms None.

Signal word Not applicable.

Hazard statements Not applicable.

Precautionary statements

Prevention Observe good industrial hygiene practices.

Response Wash thoroughly after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Supplemental label information This product is not hazardous according to Regulation (EC) No 1272/2008 as amended, therefore a hazard label does not apply.

2.3. Other hazards Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

The components are not hazardous or are below required disclosure limits.

SECTION 4: First aid measures

General information	Get medical attention if any discomfort develops.
4.1. Description of first aid measures	
Inhalation	Move to fresh air. Get medical attention if symptoms occur.
Skin contact	Wash skin with soap and water. Get medical attention if irritation persists after washing.
Eye contact	Flush thoroughly with water. If irritation occurs, get medical assistance.
Ingestion	Rinse mouth thoroughly. Get medical attention if any discomfort occurs.
4.2. Most important symptoms and effects, both acute and delayed	Under normal conditions of intended use, this material does not pose a risk to health.
4.3. Indication of any immediate medical attention and special treatment needed	Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards	This product is not flammable.
5.1. Extinguishing media	
Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	None known.
5.2. Special hazards arising from the substance or mixture	None.
5.3. Advice for firefighters	
Special protective equipment for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
Special fire fighting procedures	Move containers from fire area if you can do so without risk.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures	
For non-emergency personnel	Avoid contact with skin and eyes.
For emergency responders	Avoid contact with skin and eyes.
6.2. Environmental precautions	Environmental manager must be informed of all major spillages.
6.3. Methods and material for containment and cleaning up	Sweep up or gather material and place in appropriate container for disposal.
6.4. Reference to other sections	For personal protection, see Section 8 of the SDS. For waste disposal, see Section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling	Provide adequate ventilation. Avoid inhalation of dust and contact with skin and eyes. Observe good industrial hygiene practices. Wear appropriate personal protective equipment (See Section 8).
7.2. Conditions for safe storage, including any incompatibilities	Store in closed original container in a dry place. Store away from incompatible materials.
7.3. Specific end use(s)	Thermally Conductive Gap Filler Material used together with Part A.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	MAK	5 mg/m ³	Respirable fraction.
	STEL	10 mg/m ³	Inhalable fraction.
		20 mg/m ³	Inhalable fraction.
		10 mg/m ³	Respirable fraction.

Austria. MAK List

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	MAK	5 mg/m3	Respirable fume.
		5 mg/m3	Respirable fraction.
	STEL	10 mg/m3	Inhalable fraction.
		20 mg/m3	Inhalable fraction.
		10 mg/m3	Respirable fume.
		10 mg/m3	Respirable fraction.

Belgium. Exposure Limit Values.

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	1 mg/m3	Respirable fraction.

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	10 mg/m3	Dust.
		1,5 mg/m3	Respirable fraction.

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	MAC	4 mg/m3	Respirable dust.
		10 mg/m3	Total dust.

Czech Republic. OELs. Government Decree 361

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	0,1 mg/m3	Respirable dust.

Denmark. Exposure Limit Values

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TLV	5 mg/m3	Total
		2 mg/m3	Respirable.

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	4 mg/m3	Respirable dust.
		10 mg/m3	Total dust.

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Components	Type	Value
Aluminium oxide (CAS 1344-28-1)	VME	10 mg/m3

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	4 mg/m3	Inhalable dust.
Aluminium oxide (CAS 1344-28-1)	TWA	1,5 mg/m3	Respirable dust.
Aluminium oxide (CAS 1344-28-1)		4 mg/m3	Inhalable dust.
Aluminium oxide (CAS 1344-28-1)		1,5 mg/m3	Respirable dust.

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	AGW	10 mg/m3	Inhalable fraction.
Aluminium oxide (CAS 1344-28-1)	AGW	1,25 mg/m3 10 mg/m3	Respirable fraction. Inhalable fraction.
		1,25 mg/m3	Respirable fraction.

Greece. OELs (Decree No. 90/1999, as amended)

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	5 mg/m3	Inhalable
		10 mg/m3	Respirable.

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	6 mg/m3	Respirable.

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Components	Type	Value
Aluminium oxide (CAS 1344-28-1)	TWA	10 mg/m3

Ireland. Occupational Exposure Limits

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	4 mg/m3	Respirable dust.
		10 mg/m3	Total inhalable dust.

Italy. OELs

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	1 mg/m3	Respirable fraction.
Aluminium oxide (CAS 1344-28-1)	TWA	1 mg/m3	Respirable fraction.

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	6 mg/m3	
Aluminium oxide (CAS 1344-28-1)	TWA	6 mg/m3	Decomposition aerosol.
		4 mg/m3	

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements (Hygiene Norm HN 23:2007)

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	6 mg/m3	
Aluminium oxide (CAS 1344-28-1)	TWA	5 mg/m3	Inhalable fraction.
		2 mg/m3	Respirable fraction.

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value
Aluminium oxide (CAS 1344-28-1)	TLV	10 mg/m3

Poland. MACs. Regulation regarding maximum permissible concentrations and intensities of harmful factors in the work environment, Annex 1

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	2,5 mg/m3	Inhalable fraction.
		1,2 mg/m3	Respirable fraction.

Poland. MACs. Regulation regarding maximum permissible concentrations and intensities of harmful factors in the work environment, Annex 1

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	2,5 mg/m3	Inhalable fraction.
		1,2 mg/m3	Respirable fraction.

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Components	Type	Value
Aluminium oxide (CAS 1344-28-1)	TWA	10 mg/m3

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	STEL	5 mg/m3	Aerosol
		1,2 ppm	Aerosol
		2 mg/m3	Aerosol
		0,5 ppm	Aerosol

Slovakia. OELs. Decree of the government of the Slovak Republic concerning protection of health in work with chemical agents

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	4 mg/m3	Inhalable fraction.
		1,5 mg/m3	Respirable fraction.
Aluminium oxide (CAS 1344-28-1)	TWA	4 mg/m3	Inhalable fraction.
		1,5 mg/m3 0,1 mg/m3	Respirable fraction.

Spain. Occupational Exposure Limits

Components	Type	Value
Aluminium oxide (CAS 1344-28-1)	TWA	10 mg/m3

Sweden. Occupational Exposure Limit Values

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	5 mg/m3	Total dust.
		2 mg/m3	Respirable dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	3 mg/m3	Respirable dust.
Aluminium oxide (CAS 1344-28-1)	STEL	24 mg/m3	Fume and respirable dust.
		3 mg/m3	Respirable dust.
	TWA	3 mg/m3	Fume and respirable dust.
		3 mg/m3	Respirable dust.

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	4 mg/m3	Respirable dust.
		10 mg/m3	Inhalable dust.

Biological limit values No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no-effect level (DNEL) Not available.

Predicted no effect concentrations (PNECs) Not available.

Exposure guidelines	Follow standard monitoring procedures.
8.2. Exposure controls	
Appropriate engineering controls	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
Individual protection measures, such as personal protective equipment	
General information	Use personal protective equipment as required. Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.
Eye/face protection	Risk of contact: Wear approved safety goggles.
Skin protection	
- Hand protection	Use suitable protective gloves if risk of skin contact. Suitable gloves can be recommended by the glove supplier.
- Other	If prolonged or repeated contact is likely, chemical resistant clothing is recommended.
Respiratory protection	In case of inadequate ventilation, use respiratory protection.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
Hygiene measures	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. Discard contaminated clothing and footwear that cannot be cleaned.
Environmental exposure controls	Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance Red liquid.

Physical state Liquid.

Form Viscous liquid.

Colour Red.

Odour Slight.

Odour threshold Not available.

pH Not available.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point Not relevant.

Evaporation rate Not relevant.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not relevant.

Flammability limit - upper (%) Not relevant.

Explosive limit - lower (%) Not relevant.

Explosive limit – upper (%) Not relevant.

Vapour pressure Not relevant.

Vapour density Not relevant.

Solubility(ies) Insoluble.

Partition coefficient (n-octanol/water) Not relevant.

Auto-ignition temperature Not relevant.

Decomposition temperature Not available.

Viscosity Not available.

Explosive properties Not available.

Oxidizing properties Not available.

9.2. Other information

Bulk density Not relevant.

Density 2,03 at 23°C

VOC (Weight %) < 1 %

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	Hazardous polymerisation does not occur.
10.4. Conditions to avoid	Contact with incompatible materials.
10.5. Incompatible materials	Strong oxidising agents.
10.6. Hazardous decomposition products	None.

SECTION 11: Toxicological information

General information Under normal conditions of intended use, this material does not pose a risk to health.

Information on likely routes of exposure

Inhalation Vapours may irritate throat and respiratory system and cause coughing.

Skin contact Prolonged skin contact may cause temporary irritation.

Eye contact May cause eye irritation on direct contact.

Ingestion Ingestion may cause irritation and malaise.

Symptoms Under normal conditions of intended use, this material does not pose a risk to health.

11.1. Information on toxicological effects

Acute toxicity Under normal conditions of intended use, this material does not pose a risk to health.

Skin corrosion/irritation Not classified.

Serious eye damage/eye irritation Not classified.

Respiratory sensitisation Not classified.

Skin sensitisation Not classified.

Germ cell mutagenicity Not classified.

Carcinogenicity Not classified.

Reproductive toxicity Not classified.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not classified.

Mixture versus substance information None known.

Other information None known.

SECTION 12: Ecological information

12.1. Toxicity The product is not classified as environmentally hazardous.

12.2. Persistence and degradability No data available.

12.3. Bioaccumulative potential No data available.

Partition coefficient n-octanol/water (log K_{ow}) Not available.

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil The product is insoluble in water.

12.5. Results of PBT and vPvB assessment Not a PBT or vPvB substance or mixture.

12.6. Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

Contaminated packaging	Since emptied containers retain product residue, follow label warnings even after container is emptied.
EU waste code	07 02 17 The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	Dispose of contents/container in accordance with local/regional/national/international regulations.
Special precautions	Dispose of in accordance with local regulations.

SECTION 14: Transport information

ADR	Not regulated as dangerous goods.
RID	Not regulated as dangerous goods.
ADN	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended	Not listed.
Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended	Not listed.
Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended	Not listed.
Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended	Not listed.
Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended	Not listed.
Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended	Not listed.
Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended	Not listed.
Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA	Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended	Not listed.
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Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended	Not listed.
Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended	Not listed.
Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding, as amended	Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances	Not listed.
Directive 94/33/EC on the protection of young people at work	Not listed.

Other regulations The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended and respective national laws implementing EC directives.

National regulations Follow national regulation for work with chemical agents.

15.2. Chemical safety assessment No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

DNEL: Derived No-Effect Level.

PNEC: Predicted No-Effect Concentration.

PBT: Persistent, bioaccumulative and toxic.

vPvB: Very Persistent and very Bioaccumulative.

References

ESIS (European chemical Substances Information System)

Registry of Toxic Effects of Chemical Substances (RTECS)

HSDB® - Hazardous Substances Data Bank

Information on evaluation method leading to the classification of mixture The mixture is classified based on test data for physical hazards. The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available. For details, refer to Sections 9, 11 and 12.

Full text of any H-statements not written out in full under Sections 2 to 15 None.

Training information

Follow training instructions when handling this material.

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