



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

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BONDERITE L-FG 144/S GRAPHITE FORGING LUBRICANT
ACHESON

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

1.1. Product identifier

BONDERITE L-FG 144/S GRAPHITE FORGING LUBRICANT ACHESON

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

Intended use:
Metal forming product

1.3. Details of the supplier of the safety data sheet

Henkel AG & Co. KGaA
Henkelstr. 67
40589 Düsseldorf

Germany

Phone: +49 211 797 0

SDSinfo.Adhesive@henkel.com

For Safety Data Sheet updates please visit our website <https://mysds.henkel.com/index.html#/appSelection> or www.henkel-adhesives.com.

1.4. Emergency telephone number

The Henkel information service also provides an around-the-clock telephone service on phone no.+49-(0)211-797-3350 for exceptional cases.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Skin sensitizer
H317 May cause an allergic skin reaction.

Category 1

2.2. Label elements

Label elements (CLP):

Hazard pictogram:



Contains

2,2',2''-(hexahydro-1,3,5- triazine-1,3,5-triyl)triethanol

Signal word:

Warning

Hazard statement: H317 May cause an allergic skin reaction.

Precautionary statement: P261 Avoid breathing mist/spray.
Prevention P280 Wear protective gloves.

2.3. Other hazards

None if used properly.

Following substances are present in a concentration \geq the concentration limit for depiction in Section 3 and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):

This mixture does not contain any substances in a concentration \geq the concentration limit for depiction in Section 3 that are assessed to be a PBT, vPvB or ED.

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.	Concentration	Classification	Specific Conc. Limits, M-factors and ATEs	Add. Information
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol 4719-04-4 225-208-0 01-2119529226-41	0,1- < 1 %	Acute Tox. 4, Oral, H302 Acute Tox. 2, Inhalation, H330 Skin Sens. 1, H317 Eye Irrit. 2, H319 STOT RE 1, Inhalation, H372	Skin Sens. 1; H317; C \geq 0,1 %	

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, consult doctor if complaint persists.

Skin contact:
IF ON SKIN: Wash with plenty of soap and water.
In case of adverse health effects seek medical advice.

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
SKIN: Rash, Urticaria.

4.3. Indication of any immediate medical attention and special treatment needed
See section: Description of first aid measures

SECTION 5: Firefighting measures

Combustion behaviour:

Non-flammable (aqueous solution).

5.1. Extinguishing media

Suitable extinguishing media:

All common extinguishing agents are suitable.

Extinguishing media which must not be used for safety reasons:

None known

5.2. Special hazards arising from the substance or mixture

May produce fumes like carbon dioxide when heated to decomposition.

5.3. Advice for firefighters

Wear self-contained breathing apparatus.

Wear protective equipment.

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.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Remove with liquid-absorbing material (sand, peat, sawdust).

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.

Ensure that workrooms are adequately ventilated.

See advice in section 8

Hygiene measures:

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.

Store in sealed original container.

Avoid strictly temperatures below + 5 °C and above + 60 °C.

7.3. Specific end use(s)

Metal forming product

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
 Germany

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Graphite 7782-42-5			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900
Graphite 7782-42-5		1,25	Exposure limit(s):	If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
Graphite 7782-42-5		10	Exposure limit(s):	2 If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
2,2',2''-Nitrilotriethanol 102-71-6			Short Term Exposure Classification:	Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages.	TRGS 900
2,2',2''-Nitrilotriethanol 102-71-6		1	Exposure limit(s):	1 If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
2,2',2''-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol 4719-04-4	aqua (freshwater)		0,0066 mg/l				
2,2',2''-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol 4719-04-4	aqua (marine water)		0,00066 mg/l				
2,2',2''-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol 4719-04-4	aqua (intermittent releases)		0,06 mg/l				
2,2',2''-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol 4719-04-4	sediment (freshwater)				0,0304 mg/kg		
2,2',2''-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol 4719-04-4	sediment (marine water)				0,00304 mg/kg		
2,2',2''-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol 4719-04-4	Soil				0,00219 mg/kg		
2,2',2''-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol 4719-04-4	sewage treatment plant (STP)		5,5 mg/l				

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
2,2',2''-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol 4719-04-4	Workers	inhalation	Long term exposure - local effects		0,2 mg/m3	

Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:

Ensure good ventilation/suction at the workplace.

Respiratory protection:

In case of aerosol formation, we recommend wearing of appropriate respiratory protection equipment with ABEK P2 filter (EN 14387).

This recommendation should be matched to local conditions.

Hand protection:

Chemical-resistant protective gloves (EN 374). Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374): Polychloroprene (CR; ≥ 1 mm thickness) or natural rubber (NR; ≥ 1 mm thickness) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Polychloroprene (CR; ≥ 1 mm thickness) or natural rubber (NR; ≥ 1 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:

Protective goggles

Protective eye equipment should conform to EN166.

Skin protection:

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**

Physical state	liquid
Delivery form	liquid
Colour	black
Odor	ammoniacal
Melting point	Not available.
Solidification temperature	0 °C (32 °F) Water based.
Initial boiling point	100 °C (212 °F)
Flammability	The product is not flammable.
Explosive limits	Not applicable, The product is not flammable.
Flash point	Not applicable, No flash point up to 100°C. Aqueous preparation.
Auto-ignition temperature	Not applicable, The product is not flammable.
Decomposition temperature	Not applicable, Substance/mixture is not self-reactive, no organic peroxide and does not decompose under foreseen conditions of use

pH (20 °C (68 °F))	8,0 - 9,0 no method
pH (20 °C (68 °F); Conc.: 100 % product)	8,0 - 9,0 no method
Viscosity (kinematic) (40 °C (104 °F);)	> 20,5 mm ² /s thixotropic
Viscosity, dynamic (Brookfield; Instrument: RVT; 20 °C (68 °F); speed of rotation: 20 min ⁻¹)	1.000 - 3.000 mPa.s Brookfield viscosity (RVT)
Solubility (qualitative) (20 °C (68 °F); Solvent: Water)	Miscible
Partition coefficient: n-octanol/water	Not applicable
Vapour pressure (50 °C (122 °F))	Mixture 124 mbar;no method
Vapour pressure (55 °C (131 °F))	158 mbar;no method
Vapour pressure (20 °C (68 °F))	23,4 hPa;no method
Density (20 °C (68 °F))	1,28 g/cm ³ Supplier method
Relative vapour density: (20 °C)	< 1
Particle characteristics	Not applicable Product is a liquid

9.2. Other information

Other information not applicable for this product

SECTION 10: Stability and reactivity

10.1. Reactivity

None if used for intended purpose.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

No decomposition if used according to specifications.

10.5. Incompatible materials

None if used properly.

10.6. Hazardous decomposition products

None if used for intended purpose.

In case of fire toxic gases can be released.

SECTION 11: Toxicological information**1.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****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
2,2',2''-(hexahydro-1,3,5- triazine-1,3,5- triy)triethanol 4719-04-4	LD50	1.000 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
2,2',2''-(hexahydro-1,3,5- triazine-1,3,5- triy)triethanol 4719-04-4	LD50	> 4.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)

Acute inhalative 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	Test atmosphere	Exposure time	Species	Method
2,2',2''-(hexahydro-1,3,5- triazine-1,3,5- triy)triethanol 4719-04-4	LC50	0,371 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)

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
2,2',2''-(hexahydro-1,3,5- triazine-1,3,5- triy)triethanol 4719-04-4	not 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
2,2',2''-(hexahydro-1,3,5- triazine-1,3,5- triy)triethanol 4719-04-4	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
2,2',2''-(hexahydro-1,3,5- triazine-1,3,5- triy)triethanol 4719-04-4	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

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
2,2',2''-(hexahydro-1,3,5- triazine-1,3,5- triy)triethanol 4719-04-4	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
2,2',2''-(hexahydro-1,3,5- triazine-1,3,5- triy)triethanol 4719-04-4	positive	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
2,2',2''-(hexahydro-1,3,5- triazine-1,3,5- triy)triethanol 4719-04-4	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
2,2',2''-(hexahydro-1,3,5- triazine-1,3,5- triy)triethanol 4719-04-4	negative	intraperitoneal		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)

Carcinogenicity

No data available.

Reproductive toxicity:

No data available.

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
2,2',2''-(hexahydro-1,3,5- triazine-1,3,5- triy)triethanol 4719-04-4	NOAEL 100 mg/kg	oral: gavage	12 weeks daily, 5 d/week	rat	EU Method B.7 (Repeated Dose (28 Days) Toxicity (Oral))
2,2',2''-(hexahydro-1,3,5- triazine-1,3,5- triy)triethanol 4719-04-4	NOAEL 64 mg/kg	oral: gavage	3 months continuously	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
2,2',2''-(hexahydro-1,3,5- triazine-1,3,5- triy)triethanol 4719-04-4	NOAEL 250 mg/kg	dermal	90 d 6 h/d, 5 d/week	rat	EPA OPPTS 870.3250 (Subchronic Dermal Toxicity 90 Days)

Aspiration hazard:

No data available.

11.2 Information on other hazards

not applicable

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
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol 4719-04-4	LC50	16,07 mg/l	96 h	Brachydanio rerio (new name: Danio rerio)	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
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol 4719-04-4	EC50	11,9 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Chronic toxicity to aquatic invertebrates

No data available.

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
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol 4719-04-4	NOEC	1,56 mg/l	72 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol 4719-04-4	EC50	6,66 mg/l	72 h	Desmodesmus subspicatus	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
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol 4719-04-4	EC20	170 mg/l	30 min	activated sludge, domestic	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

12.2. Persistence and degradability

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol 4719-04-4	readily biodegradable	aerobic	> 90 - 100 %	8 d	OECD Guideline 301 A (new version) (Ready Biodegradability: DOC Die Away Test)

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

Hazardous substances CAS-No.	LogPow	Temperature	Method
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol 4719-04-4	-2	24 °C	EU Method A.8 (Partition Coefficient)

12.5. Results of PBT and vPvB assessment

Hazardous substances CAS-No.	PBT / vPvB
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol 4719-04-4	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6. Endocrine disrupting properties

not applicable

12.7. Other adverse effects

Do not empty into drains, soil or bodies of water.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

In consultation with the responsible local authority, must be subjected to special treatment.

Waste code

080120

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 or ID number

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.2. UN proper shipping name

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.3. Transport hazard class(es)

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.4. Packing group

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.5. Environmental hazards

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.6. Special precautions for user

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

Ozone Depleting Substance (ODS) (Regulation (EC) No 1005/2009):	Not applicable
Prior Informed Consent (PIC) (Regulation (EU) No 649/2012):	Not applicable
Persistent organic pollutants (Regulation (EU) 2019/1021):	Not applicable
VOC content (2010/75/EU)	0 %

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

National regulations/information (Germany):

WGK: WGK 1: slightly hazardous to water (Ordinance on facilities for handling substances that are hazardous to water (AwSV))
 Classification according to AwSV, Annex 1 (5.2)

Storage class according to TRGS 510: 10

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:

- H302 Harmful if swallowed.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H330 Fatal if inhaled.
- H372 Causes damage to organs through prolonged or repeated exposure.

- ED: Substance identified as having endocrine disrupting properties
- EU OEL: Substance with a Union workplace exposure limit
- EU EXPLD 1: Substance listed in Annex I, Reg (EC) No. 2019/1148
- EU EXPLD 2: Substance listed in Annex II, Reg (EC) No. 2019/1148
- SVHC: Substance of very high concern (REACH Candidate List)
- PBT: Substance fulfilling persistent, bioaccumulative and toxic criteria
- PBT/vPvB: Substance fulfilling persistent, bioaccumulative and toxic plus very persistent and very bioaccumulative criteria
- vPvB: Substance fulfilling very persistent and very bioaccumulative criteria

Further information:

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