

according to Regulation No. 1907/2006 (REACH) and Commission Regulation (EU) 2020/878

Laminating resin LG 160

Revision: 3.1
Issue date: 2015-05-25

Revision date: 2021-08-23

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

1.1 Product identifier

Chemical name/ trade name: Laminating resin LG 160

UFI: UC9W-00X3-A00C-KGNY

Producer: GRM Systems s.r.o.

Address: Olomouc, 77900, Technologická 886/28

Distributor: GRM Systems s.r.o.

Address: Olomouc, 77900, Technologická 886/28

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

Intended use: Production of composite materials.

Uses advised against: Other than intended uses.

1.3 Details of the supplier of the safety data sheet

Supplier of SDS: GRM Systems s.r.o.

Address: Olomouc, 77900, Technologická 886/28

Identification No.: 26916835

Tel: +420 585 431 734

www: http://www.grm-systems.cz/

1.4 Emergency telephone number

Responsible person for this SDS:

National Poisons Information Service (NPIS), Royal Infirmary of Edinburgh, Edinburgh

EH16 4SA, United Kingdom, Tel.: +44 121 507 4123, 844 892 0111

## SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

Classification according to the EC Regulation No. 1272/2008 (CLP):

Chronic (long term) aquatic hazard, category 1, H410 Very toxic to aquatic life with long

lasting effects.

Anna Sťahelová

Eye irritation, category 2, H319 Causes serious eye irritation. Skin irritation, category 2, H315 Causes skin irritation.

Skin sensitisation, category 1, H317 May cause an allergic skin reaction.

## 2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP]:

Hazard pictogram(s):



Signal word(s): WARNING

Contain: reaction product: bisphenol-A-(epichlorhydrin)

Hazard statement(s):

H315 Causes skin irritation.

H317 May cause an allergic skin reaction. H319 Causes serious eye irritation.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s):

P273 Avoid release to the environment.



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P280 Wear protective gloves / protective clothing / eye protection according to the nature of the work being performed.

P391 Collect spillage.

P501 Dispose of contents / container according to the instructions in the safety data sheet section 13.

Supplemental information:

2.3 Other hazards

This mixture does not contain any substances which are classified as PBT or vPvB

This product does not contain SVHC.

This product does not contain endocrine disruptors in a concentration of 0.1% by weight

or higher.

#### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

Name of the component	Content (weight %)	CAS EINECS Index N° Reg. Number	Classification ac Regulation (EC) No 1	Ŭ
			Aquatic Chronic 2	H411
			Eye Irrit. 2	H319
	80-90	25068-38-6	SCL: C ≥ 5%	
reaction product: bisphenol-A-		500-033-5	Eye Irrit. 2	H319
(epichlorhydrin)		603-074-00-8	Skin Irrit. 2	H315
		01-2119456619-26-0003	SCL: C ≥ 5%	
			Skin Irrit. 2	H315
			Skin Sens. 1	H317
		16096-31-4	Aquatic Chronic 3	H412
1.6 his/2.2 anayayaranayaybayana	10-20	618-939-5	Eye Irrit. 2	H319
1,6-bis(2,3-epoxypropoxy)hexane	10-20		Skin Irrit. 2	H315
		01-2119463471-41-0000	Skin Sens. 1	H317

For full text of H-statements see SECTION 16.

#### SECTION 4: First aid measures

4.1 Description of first aid measures

General advice: In case of accident or if you feel unwell, seek medical advice immediately (show the safety

data sheet or label if possible).

Inhalation: Pause exposure. Move the affected person to fresh air quickly and for your own safety, do

not let him walk!  $\cdot$  Depending on the situation, it is recommended to rinse the oral cavity or nose with water  $\cdot$  Change the victim if the substance is affected by clothing  $\cdot$  Secure the victim against colds  $\cdot$  Call an ambulance if necessary  $\cdot$  or provide medical treatment due to

the need for further monitoring for at least 24 hours.

Skin contact: Take off contaminated clothing. Wash the affected area with as much lukewarm water as

possible. If there is no skin injury, it is advisable to use soap, soap solution or shampoo.

Get medical attention if skin irritation persists.

Eye contact: Immediately flush eyes with running water, keep eyelids open (even by force); if the

affected person has contact lenses, remove them immediately. Rinse for at least 10

minutes. Get medical attention if possible.

Ingestion: Rinse mouth with water and give 2-5 dl of water to drink. Get medical attention for a

person with health problems.

Protection of first aiders: When providing first aid, it is essential to ensure both the rescue and the rescued safety.

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



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No data available.

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

Symptomatic treatment.

#### SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Foam, extinguishing powder, CO2, water mist.
Unsuitable extinguishing media: Direct water flow - could cause fire to spread.

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

Combustion products and hazardous gases: smoke, carbon monoxide, carbon dioxide.

5.3 Advice for firefighters

Respiratory units exposed to smoke or vapors must be equipped with respiratory and eye protection devices. When using in enclosed areas, an insulating respirator must be used. Containers exposed to fire cool with water mist. Collect extinguishing water separately, and avoid its penetration into the soil and water. Chemical protective clothing (EN 469).

#### SECTION 6: Accidental release measures

## 6.1 Personal precautions, protective equipment and emergency procedures

Wear suitable protective clothing, replace contaminated clothing. Avoid contact with skin and eyes, contamination of clothes and shoes. Ensure ventilation of the affected area. All persons who do not participate in rescue operations to a safe distance.

6.2 Environmental precautions

Prevent leakage into the environment, avoid ingress into surface water and sewers, soil and land. In case of leakage into the sewage system or water course, inform immediately its administrator, the police, the fire brigade or the environmental department.

#### 6.3 Methods and material for containment and cleaning up

In case of leakage, localize and, if possible, absorb / remove mechanically. Residues or smaller amounts sweep / get absorbed into a suitable absorbent (universal sorbent, diatomaceous earth, soil, sand) and place in suitable containers and labeled for disposal transmit in accordance with applicable regulations.

6.4 Reference to other sections

See section 7, 8 a 13.

### SECTION 7: Handling and storage

## 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Use appropriate PPE. Use only in well-ventilated areas

## 7.2 Conditions for safe storage, including any incompatibilities

Store in well sealed original containers in dry, cool and well-ventilated areas. Store in a vertical position to prevent leakage and dripping. Keep away from food, feed and medication.

## 7.3 Specific end use(s)

See section 1.2.



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#### **SECTION 8: Exposure controls/personal protection**

#### **Control parameters**

**Exposure limits:** According to national legislation of target country.

		Permissible	Maximum	
Substance	CAS	exposure	permissible	Note
	<b>3.13</b>	limits	concentration	
		(mg/m <sup>3</sup> )	(mg/m³)	
No data available.				

Substances with Community Exposure Limits:

Union occupational exposure limit values in accordance with Directive 2000/39/EC (as

amended).

	Limit values		
Substance	OEL (mg/m³)	STEL (mg/m³)	Note
No data available.			

## **DNEL:**

### 1,6-bis(2,3-epoxypropoxy)hexane (CAS: 16096-31-4)

Exposed group and route of exposure	Duration of exposure	Type of effect	Unit	Value
Workers				
	Long-term (chronic)	systemic	mg/m³	10.57
innaiation	Long-term (chronic)	local	mg/m³	0.44
Dermal	Long-term (chronic)	systemic	mg/kg <sub>bw/d</sub>	6
Dermai		local	mg/kg <sub>bw/d</sub>	22.6 μg/cm²
Consumers				
Inhalatian	Langtown (absorb)	systemic	mg/m³	5.29
Inhalation	Long-term (chronic)	local	mg/m³	0.27
Dermal	long torm (chronic)	systemic	mg/kg <sub>bw/d</sub>	3
Dermai	Long-term (chronic)	local	mg/kg <sub>bw/d</sub>	13.6 μg/cm²
Oral	Long-term (chronic)	systemic	mg/kg <sub>bw/d</sub>	1.5

## PNEC:

## 1,6-bis(2,3-epoxypropoxy)hexane (CAS: 16096-31-4)

Component of the environment	onment	PNEC	Unit	Value
	Freshwater	PNEC water, fresh.	mg/L	0.011
	Freshwater, occasional leakage	PNEC water, fresh.		0.115
Water environment	Freshwater sediment	PNEC sed., fresh.	mg/kg sediment dw	0.283
	Seawater	PNEC water, mar.	mg/L	0.001
	Marine sediment	PNEC sed., mar.	mg/kg sediment dw	0.028
Microbiological activity	Wastewater treatment plant	PNEC sew. treat.	mg/L	1
Terrestrial environment	/ <sub>Soil</sub>	PNEC soil	ma/ka	0.223
organisms	3011	FINEC soil	mg/kg soil dw	0.223

DNELs and PNECs values for the other components of the mixture haven't been determined.

## **Exposure controls**



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Technical measures: Technical measures and appropriate work procedures take precedence over personal

protective equipment. Observe the usual hygiene principles. Do not eat, drink, smoke.

Before breaks and after work wash your hands with warm water and soap.

**Individual protection measures** 

Respiratory protection: If the exposure limits are exceeded, when using dust, fog, aerosol, use a suitable filter

(type ABEK -EN 14387+A1 - anti-gas and combined filters, type P -EN 143 - particle filters,

type FFP3 / FFP2 - EN 149+A1 - Particle-based half masks; EN 142 - mouth masks).

Hand protection: Protective working gloves (EN 374). Observe the manufacturer's exact instructions,

including the time of use. Replace damaged gloves.

Eye / face protection: Safety glasses with side-plates or facial shields (EN 166).

Skin protection: Working clothes (EN ISO 13688) and footwear (EN ISO 20347). Protective clothing against

liquid chemicals (EN 14605). Protective clothing against chemicals (EN ISO 14325).

Thermal hazards: No data available.

Environmental exposure controls: Avoid unnecessary releases into the environment.

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# SECTION 9: Physical and chemical properties

## 9.1 Information on basic physical and chemical properties

Physical state: Liquid
Colour: Colourless

Odour:

Odour threshold:

PH:

No data available.

Boiling point or initial boiling point and

boiling range (°C):

Flash point (°C): 150

Evaporation rate: No data available. Flammability (gases, liquids and solids): No data available.

Lower and upper explosion limit:

Vapour pressure (20 °C):

Vapour pressure (50 °C):

No data available.

No data available.

No data available.

No data available.

Density and/or relative density (g/cm³,

20 °C):

Solubility (20 °C): No data available. Partition coefficient n-octanol/water (log No data available.

value):

Auto-ignition temperature:

Decomposition temperature:

No data available.

9.2 Other information

VOC (%): 0

Dry matter content: No data available.

Additional information:

## 9.2.1 Information with regard to physical hazard classes

The product has no physical hazards.



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9.2.2 Other safety characteristics:

mechanical sensitivity: No data available. self-accelerating polymerisation No data available.

temperature:

formation of explosible dust/air mixtures: No data available.

acid/alkaline reserve: No data available. evaporation rate No data available. miscibility: No data available. conductivity: No data available. No data available. corrosiveness: No data available. gas group: No data available. redox potential: radical formation potential: No data available. photocatalytic properties: No data available.

### SECTION 10: Stability and reactivity

**10.1** Reactivity Not expected under proper conditions of use.

**10.2 Chemical stability** Stable under normal conditions.

**10.3 Possibility of hazardous reactions** Dangerous reactions are not known.

**10.4** Conditions to avoid Comply with the handling and storage conditions set out in Section 7.

**10.5** Incompatible materials Strong oxidizing agents, strong acids, strong alkalines.

**10.6** Hazardous decomposition products Hazardous decomposition products are not known.

## **SECTION 11:** Toxicological information

## 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008 Individual components

1,6-bis(2,3-epoxypropoxy)hexane (CAS: 16096-31-4)

Acute toxicity:

Test type	Results	Exposure	Tested organisms
OECD 401, weight of evidence	3 741 mg/kg bw 3 526 mg/kg bw 3 928 mg/kg bw	oral: gavage	rat
OECD 402, key study	2 000 mg/kg bw, NOEL	dermal	rat
OECD 433, key study	0.035 mg/L air (analytical), NOEC	inhalation	rat

Serious eye damage / irritation:

Test type	Results	Exposure	Tested organisms
OECD 405, key study	moderately irritating	Eye	rabbit

Skin corrosion / irritation:

Test type	Results	Evposuro	Tested organisms
rest type	resuits	Exposure	resteu organisms



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key study irritating

Skin rabbit

Respiratory or skin sensitisation:

Test type	Results	Exposure	Tested organisms
OECD 429, key study	sensitising	Skin	mouse

### STOT - single exposure:

Test type	Results	Exposure	Tested organisms
	No data available.		

### STOT - repeated exposure:

Test type	Results	Exposure	Tested organisms
IOFCD 408, key study	300 mg/kg bw/day (actual dose received), NOAEL	oral	rat
IOECD 412 supporting study	4.04 mg/L air (analytical), NOEL ca. 16 mg/m³ air, NOAEL	inhalation	rat

### Carcinogenicity:

Test type	Results	Exposure	Tested organisms
	No data available.		

## Germ cell mutagenicity:

Test type	Results	Exposure	Tested organisms
OECD 486, key study	negative	oral: unspecified	rat

## Reproductive toxicity:

Test type	Results	Exposure	Tested organisms
	No data available.		

## Aspiration hazard:

Test type	Results	Exposure	Tested organisms
	No data available.		

#### Mixture:

Acute toxicity: The product does not meet the criteria for classification.

Serious eye damage / irritation: Causes serious eye irritation.
Skin corrosion / irritation: Causes skin irritation.

Respiratory or skin sensitisation: May cause an allergic skin reaction.

STOT - single exposure:

The product does not meet the criteria for classification.

The product does not meet the criteria for classification.

The product does not meet the criteria for classification.

The product does not meet the criteria for classification.

The product does not meet the criteria for classification.

The product does not meet the criteria for classification.

The product does not meet the criteria for classification.

The product does not meet the criteria for classification.

The product does not meet the criteria for classification.

# 11.2 Information on other hazards Endocrine disrupting properties

This product does not contain endocrine disruptors in a concentration of 0.1% by weight or higher.



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Other information: No data available.

**SECTION 12:** Ecological information

12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

1,6-bis(2,3-epoxypropoxy)hexane (CAS: 16096-31-4)

Toxicity	Tested organisms	Results	Test type	
Acute toxicity to fish	Oncorhynchus mykiss (previous	ca. 30 mg/L, LC50 / 96 h	OECD 203	
Acute toxicity to lish	name: Salmo gairdneri)	ca. 30 Hig/L, LC30 / 30 H	OECD 203	
Acute toxicity to invertebrates	Daphnia magna	ca. 39 - ca. 57 mg/L, EC50 / 48 h	OECD 202	
	Pseudokirchneriella subcapitata			
A cuto tovicity to accustic algae	(previous names: Raphidocelis	22.1 mg/L FCFO / 48 h		
Acute toxicity to aquatic algae	subcapitata, Selenastrum	23.1 mg/L, EC50 / 48 h		
	capricornutum)			

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances which are classified as PBT or vPvB

12.6 Endocrine disrupting properties

This product does not contain endocrine disruptors in a concentration of 0.1% by weight

or higher.

12.7 Other adverse effects

No data available.

**SECTION 13:** Disposal considerations

13.1 Waste treatment methods

Catalogue No. of mixture waste:

08 04 09 Waste adhesives and sealants containing organic solvents or other dangerous

substances

ıc

Waste codes / waste designations

according to LoW:

08 04 10 Waste adhesives and sealants other than those mentioned in 08 04 09

15 01 10 Packaging containing residues of or contaminated by dangerous substances

Recommended procedure for mixture

waste disposal:

No data available.

Recommended procedure for packaging

disposal:

Empty containers must be disposed of in accordance with the applicable waste legislation. After perfect cleaning, the packaging can be used as a secondary raw material for the

same purpose. Recommended way of disposing of recycling, burning in a hazardous waste

incinerator or storing hazardous waste.

Physical / chemical properties that may

affect waste treatment method:

No data available.

Sewage disposal-relevant information:

Protect against weathering. Prevent leakage of waste into the water / soil / sewage

system. In case of leakage, inform the competent authorities.

Other disposal recommendations:

Dispose of in accordance with applicable legislation.



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### **SECTION 14:** Transport information

	Type of transport	Land transport ADR/RID	Sea transport IMDG	Air Transport ICAO / IATA
14.1	UN number or ID number	3082	3082	3082
14.2	UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A- (epichlorhydrin))	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A- (epichlorhydrin))	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A- (epichlorhydrin))
14.3	Transport hazard class(es)	9	9;P	9
	Classification code	90	-	-
	EmS	-	F-A, S-F	-
	Packaging instructions	P001 / IBC03 / LP01 / R001	P001;LP01 / IBC03	(passanger/cargo) 964 / 964
	Labels	9		
14.4	Packing group	III	III	III

14.5 Environmental hazards

No data available.

IMDG:

Marine Pollutant

14.6 Special precautions for user

No data available.

14.7 Maritime transport in bulk according to IMO instruments

Not specified.

## Other information

Type of transport	Land transport ADR/RID	Sea transport IMDG	Air Transport ICAO / IATA
Limited quantities:	5 L	5 L	Y964
Excepted quantities:	E1	E1	E1
Transport category:	3	-	-
Tunnel restriction code:	(E)	-	-
Segregation group:	-	-	-

## **SECTION 15: Regulatory information**

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

Regulation (EC) No. 1272/2008 (CLP) on classification, labelling and packaging of substances and mixtures,... Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH),... Applicable national regulations.

15.2 Chemical safety assessment

A chemical safety assessment has been performed.



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#### **SECTION 16: Other information**

#### Complete text of all classifications and hazard classes referred to in SECTION 3

Hazard class: Aquatic Chronic 2 - Chronic (long term) aquatic hazard, category 2

Eye Irrit. 2 - Eye irritation, category 2 Skin Irrit. 2 - Skin irritation, category 2 Skin Sens. 1 - Skin sensitisation, category 1

**H-statements:** H315 Causes skin irritation.

H317 May cause an allergic skin reaction. H319 Causes serious eye irritation.

H411 Toxic to aquatic life with long lasting effects.

#### **Abbreviations:**

ADN Inland waterways
ADR Accord Dangereuses Route
CAS Chemical Abstracts Service
DNEL Derived no-effect level
EC50 Effect concentration for 50%
EINECS European Inventory of Existing Commercial Chemical Substances
EL50 Effect level for 50%

IATA International Air Transport Association IC50 Inhibition concentration for 50%

ICAO International Civil Aviation Organization

IL 50 Inhibition load for 50%

IMDG International Maritime Dangerous Goods

LC50 Lethal concentration for 50%

LD50 Lethal dose for 50% LL50 Lethal load for 50%

LOAEC Lowest observable adverse effect concentration

LOAEL Lowest observable adverse effect level LOEC Lowest observable effect concentration

LOEL Lowest observable effect level

NEL No effect level

NOAEC No observable adverse effect concentration

NOAEL No observable adverse effect level
NOEC No observable effect concentration

NOEL No observable effect level

NPK-P Maximum permissible concentration

OEL Occupational Exposure Limit (workplace exposure limit - 8 hours / shift)

PBT Persistent, bioacumulative and toxic

PEL Permissible exposure limits
PNEC Predicted no-effect concentration

RID Regulations for the International Carriage of Dangerous Goods by Rail

SCL Specific concentration limits

STEL Short Term Exposure Limit (short exposure - corresponds to approx. 15 min.)

TT Toxic threshold

VOC Volatile organic substances

vPvB Very persistent and very bioacumulative

WGK Hazard classes for water (Wassergefährdungsklassen)

## Changes to previous version SDS:

This revision follows the revision: 2021-01-29 and complies with Regulations (EC) No. 1907/2006 (REACH) and No. 1272/2008 (CLP).



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Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH), as amended. Regulation (EC) No 1272/2008 of the European Parliament and of the Council, as amended. Act No. 350/2011 Coll., On chemical substances and chemical mixtures, as amended. Principles for providing first aid during exposure to chemical substances (Assoc. Prof. Daniela Pelclová, MD, CSc., Alexandr Fuchs, MD, CSc., Miroslava Hornychová, MD, CSc., Zdeňka Trávníčková, MD, CSc., Jiřina Fridrichovská, prom. Chem. .). Data from the manufacturer of the substance / mixture, if available - data from the registration dossier.

Classification was performed by calculation method.

#### Instructions for training:

Workers who come into contact with dangerous substances must be aware of the effects of these substances, how they are treated, and protective measures to the extent necessary.

Furthermore, they must be familiar with the first aid principles, with the necessary sanitation procedures and with the procedures for disaster and accident elimination.

The person handling this chemical product must be familiar with the safety rules and the data given in the safety data sheet.

If a hazardous chemical / mixture is classified as corrosive or toxic, workers should be made aware of the Corrosive / Toxic Chemicals / Mixing Rules.

Persons carrying dangerous substances must be familiar with the ADR / RID accident instructions.

#### Other information:

The above information describes the conditions for safe handling of the product and corresponds to the current knowledge of the manufacturer and serves as instruction for the training of the persons handling the product.

The manufacturer carries guarantee the above-described properties of the product at the recommended use.

The user is responsible for determining the suitability of the product for specific purposes and adapting security measures if such application is contrary to the manufacturer's recommendations.