

SECTION 1: Identification

1.1. Identification

Product form : Article
Product name : ELL 101, ELL 102, ELL 103, ELL 104

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Laminate for consumer and industrial electronics.

1.3. Supplier

AGC Multi Material America Inc.
1420 W 12th Place
Tempe, AZ 85281
T 480-967-5600

1.4. Emergency telephone number

Emergency number : 480-967-5600 (8am - 5pm MST) M - F

SECTION 2: Hazard(s) identification

The subject product is a solid material that is not exempted as an article due to its downstream use. The subject product does not pose hazards in its original form. During processing, such as cutting, grinding, or heating, hazards listed in section 2.1 apply.

2.1. Classification of the substance or mixture

GHS US classification

Skin corrosion/irritation Category 2	Causes skin irritation
Serious eye damage/eye irritation Category 2	Causes serious eye irritation
Skin sensitization, Category 1	May cause an allergic skin reaction
Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation	May cause respiratory irritation
Specific target organ toxicity (repeated exposure) Category 1	Causes damage to organs through prolonged or repeated exposure (Inhalation)

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Danger

Hazard statements (GHS US) :

Causes skin irritation
May cause an allergic skin reaction
Causes serious eye irritation
May cause respiratory irritation
Causes damage to organs through prolonged or repeated exposure (Inhalation)

Precautionary statements (GHS US) :

Do not breathe dust, vapors.
Avoid breathing dust, vapors.
Wash hands, forearms and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.

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Contaminated work clothing must not be allowed out of the workplace.
Wear eye protection, protective gloves.
If on skin: Wash with plenty of soap and water.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER, a doctor if you feel unwell.
Get medical advice/attention if you feel unwell.
If skin irritation occurs: Get medical advice/attention.
If skin irritation or rash occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
Wash contaminated clothing before reuse.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards which do not result in classification

Other hazards which do not result in classification : None known.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%
Glass, oxide, chemicals	CAS-No.: 65997-17-3	20 – 50
Silica, vitreous	CAS-No.: 60676-86-0	12 – 25
Proprietary component	CAS-No.: Trade secret	< 5

The specific chemical component identities and/or the exact component percentages of this material may be withheld as trade secrets. This information is made available to health professionals, employees, and designated representatives in accordance with the applicable provisions of 29 CFR 1910.1200 (I)(1). Trace ingredients (if any) are present in < 1% concentration, (< 0.1% for potential carcinogens, mutagen, and reproductive toxicant, respiratory tract and skin sensitizers in addition to oral/ inhalation acute toxicant in category 1 and 2). None of the trace ingredients contribute significant additional hazards at the concentrations that may be present in this product. All pertinent hazard information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalents.

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. Call a poison center/doctor/physician if you feel unwell.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Not considered a potential route of exposure in its original form. In case of processing such as cutting, grinding, or heating: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor/physician if you feel unwell.

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First-aid measures after skin contact	: Not considered a potential route of exposure in its original form. In case of processing such as cutting, grinding, or heating: Remove/Take off immediately all contaminated clothing. Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Not considered a potential route of exposure in its original form. In case of exposure to dust, vapours, or smoke during processing, such as cutting, grinding, or heating: Rinse immediately with plenty of water. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Not expected to present a significant hazard under anticipated conditions of normal use. In case of processing such as cutting, grinding, or heating: Rinse mouth out with water. Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms	: Not considered a potential route of exposure in its original form.
Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	: Irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Adapt extinguishing media to the environment for surrounding fires. Water spray. Dry powder. Foam.
Unsuitable extinguishing media	: None known.

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures	: Ventilate spillage area. In case of processing such as cutting, grinding, or heating: Avoid contact with eyes, Avoid contact with skin. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.
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6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	: Mechanically recover the product.
Other information	: Dispose of materials or solid residues at an authorized site.

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6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid dust formation. Do not breathe dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes. Wear personal protective equipment.

Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed. Store locked up. Store in a well-ventilated place. Keep cool.

Storage temperature : ≤ 77 °F

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

ELLX Copper clad laminate	
No additional information available	
Glass, oxide, chemicals (65997-17-3)	
No additional information available	
Silica, vitreous (60676-86-0)	
USA - OSHA - Occupational Exposure Limits	
Local name	Silica, fused, respirable dust
OSHA PEL TWA [2]	20 mppcf
Remark (OSHA)	Table Z-3. For OSHA PEL (TWA): Use formula: (80 mg/m ³ / (%SiO ₂)) for mg/m ³ . CAS No. source: eCFR Table Z-1.
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-3 Mineral Dusts
Proprietary component (Trade secret)	
No additional information available	

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Not expected to present a significant hazard under anticipated conditions of normal use. In case of repeated or prolonged contact wear gloves. In case of processing such as cutting, grinding, or heating: nitrile rubber gloves
Eye protection:
Safety glasses

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Skin and body protection:
Wear suitable protective clothing
Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Solid. panels.
Color	: White to yellow
Odor	: Odourless
Odor threshold	: No data available
pH	: Not relevant
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: Not relevant
Flash point	: Not applicable
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: Not relevant
Relative vapor density at 20 °C	: No data available
Relative density	: 1.7 – 2.7 Relative evaporation rate (water=1)
Solubility	: Water: Negligible
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available
Explosion limits	: Not applicable
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

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10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Glass, oxide, chemicals (65997-17-3)

LD50 oral rat	> 2000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method)
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Skin corrosion/irritation : Causes skin irritation.
The subject product is a solid material that is not exempted as an article due to its downstream use
Dust or vapor generated during processing such as cutting, grinding, or heating may pose a listed hazard
pH: Not relevant

Serious eye damage/irritation : Causes serious eye irritation.
The subject product is a solid material that is not exempted as an article due to its downstream use
Dust or vapor generated during processing such as cutting, grinding, or heating may pose a listed hazard
pH: Not relevant

Respiratory or skin sensitization : May cause an allergic skin reaction.
The subject product is a solid material that is not exempted as an article due to its downstream use
Dust or vapor generated during processing such as cutting, grinding, or heating may pose a listed hazard

Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
The subject product is a solid material that is not exempted as an article due to its downstream use
Dust or vapor generated during processing such as cutting, grinding, or heating may pose a listed hazard

Silica, vitreous (60676-86-0)

IARC group	3 - Not classifiable
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Reproductive toxicity : Not classified
STOT-single exposure : May cause respiratory irritation.

Silica, vitreous (60676-86-0)

STOT-single exposure	May cause respiratory irritation.
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STOT-repeated exposure : Causes damage to organs through prolonged or repeated exposure (Inhalation). (The subject product is a solid material that is not exempted as an article due to its downstream use. Dust or vapor generated during processing such as cutting, grinding, or heating may pose a listed hazard)

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Silica, vitreous (60676-86-0)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified
Viscosity, kinematic	: Not applicable
Potential Adverse human health effects and symptoms	: Not considered a potential route of exposure in its original form.
Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	: Irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Not applicable

Proper Shipping Name (TDG) : Not applicable

Proper Shipping Name (IMDG) : Not applicable

Proper Shipping Name (IATA) : Not applicable

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : Not applicable

IMDG

Transport hazard class(es) (IMDG) : Not applicable

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IATA

Transport hazard class(es) (IATA) : Not applicable

14.4. Packing group

Packing group (DOT) : Not applicable

Packing group (IMDG) : Not applicable

Packing group (IATA) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT

No data available

IMDG

No data available

IATA

No data available

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. US Federal regulations

All components of this product are listed as Active, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory, except for:

Proprietary component	CAS-No. Trade secret	< 5%
Contains chemical(s) subject to TSCA 12b export notification if product is shipped outside the U.S		
1,1'-(Ethane-1,2-diyl)bis[pentabromobenzene] (EBP)	CAS-No. 84852-53-9	10 – 15%

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	CAS-No. 7440-50-8	< 15%
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granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm] (7440-50-8)

CERCLA RQ	5000 lb
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15.2. International regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

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Component	State or local regulations
Silica, vitreous (60676-86-0)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List
granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm](7440-50-8)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - New York City - Right to Know Hazardous Substances List; U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.