



GreenGuard®/GreenGuard® LG XPS Insulation Board

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Revision date: 6/17/2021

SECTION 1: Identification

1.1. Identification

Product form	: Article
Trade name	: GreenGuard® XPS and GreenGuard® LG XPS Insulation Board
Synonyms	: Kingspan® GreenGuard® Type IV and GreenGuard® GG25-LG XPS Insulation Board Kingspan® GreenGuard® Type VI and GreenGuard® GG40-LG XPS Insulation Board Kingspan® GreenGuard® Type VII and GreenGuard® GG60-LG XPS Insulation Board Kingspan® GreenGuard® Type 4 XPS and GreenGuard® LG Type 4 XPS Insulation Board

1.2. Recommended use and restrictions on use

Use of the substance/mixture	: Construction
Restrictions on use	: Any use not specified

1.3. Supplier

Manufacturer

Kingspan Insulation LLC
2100 Riveredge Parkway, Suite 175
Atlanta, GA
USA, 30328
Tel: 1-800-241-4402
Email: info@kingspaninsulation.us
Website: www.kingspaninsulation.us

1.4. Emergency telephone number

Emergency number : 1-800-241-4402 M-F 8am – 5pm ET

SECTION 2: Hazard(s) identification

USA : This product conforms to the U.S. Occupational Safety and Health Administration (OSHA) Hazard Communication Standard's definition of an "Article," i.e., "...a manufactured item: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent ...upon its shape or design...; and (iii) which does not release, or otherwise result in exposure to, a hazardous chemical, under normal conditions of use." [29 CFR 1910.1200 (b) (iv)]. This product is an article pursuant to 29 CFR 1910.1200 and, as such, is not subject to the OSHA Hazard Communication Standard requirement.

Canada : This is not a controlled product under WHMIS. This product meets the definition of a "Manufactured Article" and is not subject to the regulations of the Hazardous Products Act. While this product is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200) and under WHMIS, this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

2.1. Classification of the substance or mixture

GHS US classification

Not classified

2.2. GHS Label elements, including precautionary statements

GHS US labeling

No labeling applicable

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2.3. Other hazards which do not result in classification

Board Product does not present an inhalation, ingestion, or contact health hazard unless subjected to operations such as cutting, sawing or machining which result in the generation of airborne particulate.

Some board panels may have a small amount of a formic acid by-product on the surface. Formic acid is a liquid that can cause skin and eye burns, and nose and throat irritation. If liquid is visible on board product, formic acid should be suspected.

2.4. Unknown acute toxicity (GHS)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
Formic acid (potential by-product)	CAS-No.: 64-18-6	< 1.0%	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Skin Corr. 1A, H314

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention.
- First-aid measures after skin contact : No symptoms are expected when handling normal insulation board. If formic acid by-product is expected: For even minor contact, immediately remove contaminated clothing. Wash skin thoroughly with mild soap and water.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- First-aid measures after ingestion : IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. If ingestion of formic acid by-product is suspected, get medical advice.

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

- Symptoms/effects after inhalation : Inhalation of particles can cause coughing and shortness of breath. Inhalation of by-product formic acid (if present) can cause nose and throat irritation.
- Symptoms/effects after skin contact : Contact with normal insulation boards is not expected to cause symptoms. Contact with by-product formic acid (if present) can severely irritate and possibly burn unprotected skin.
- Symptoms/effects after eye contact : Contact with normal insulation board may cause an abrasion. Contact with by-product formic acid (if present) can severely irritate eyes and possibly cause burns and eye damage.

4.3. Immediate medical attention and special treatment, if necessary

All treatments should be based on observed signs and symptoms of distress in the patient.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Use water spray (fog), foam, dry powder, or carbon dioxide, as appropriate for surrounding fire and materials.

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5.2. Specific hazards arising from the chemical

Fire hazard : Not flammable. Product can burn if involved in a fire. During a fire, combustion can generate toxic fumes which may include resin fragments, smoke, carbon monoxide and carbon dioxide, acrolein, halogens, acids, ketones and aldehydes. By-product formic acid (if present) is a flammable liquid.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Fight fire from safe distance and protected location. Firefighting personnel should wear full protective gear and a MSHA/NIOSH (approved or equivalent) self-contained breathing apparatus (SCBA) in pressure-demand mode. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : If product is released or spilled, take proper precautions to minimize exposure by using appropriate personal protective equipment (see Section 8). Area should be adequately ventilated.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up mechanically (sweeping, shoveling) and collect in suitable container for disposal.
Other information : To neutralize formic acid (if present or suspected) use an acid spill kit or neutralize with a solution or paste of sodium bicarbonate (baking soda).

6.4. Reference to other sections

Section 8: personal protective equipment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Machining may result in release of dust.
Precautions for safe handling : Avoid breathing dust. Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of reach of children. Protect from humidity and water.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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No additional information available

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Formic acid (64-18-6)	
USA - OSHA - Occupational Exposure Limits	
Local name	Formic acid
OSHA PEL (TWA) [1]	9 mg/m ³
OSHA PEL (TWA) [2]	5 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
ACGIH OEL TLV-TWA	5 ppm
ACGIH OEL TLV-STEL	10 ppm
Regulatory reference	ACGIH 2021
Remark (ACGIH)	TLV® Basis: URT, eye & skin irr

8.2. Appropriate engineering controls

Appropriate engineering controls : Provide adequate ventilation to minimize dust concentrations.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Follow the requirements for personal protective equipment for the worksite. Appropriate protective footwear is recommended when handling large boards.

Hand protection:

If by-product formic acid is suspected, wear butyl gloves or equivalent while handling product boards.

Eye protection:

Safety glasses with side guards should be worn to prevent injury from airborne particles and/or other eye contact with this product. Wear goggles if excessive dust is generated or if by-product formic acid is suspected.

Skin and body protection:

Not required for normal use of this product, however it is good practice to wear gloves and clean body-covering clothing.

Respiratory protection:

When dust concentrations in air exceed the occupational exposure guidelines, wear an approved particulate respirator equipped with an N95, R95 or P95 filter. A respiratory protection program that meets the regulatory requirements, such as OSHA's 29 CFR 1910.134 and ANSI Z88.2 or Canadian Standards Association (CSA) Standard Z94.4, must be followed whenever workplace conditions warrant a respirator's use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Solid; Green extruded polystyrene Insulation Board.
Color	: Green
Odor	: Odorless
Odor threshold	: No data available
pH	: No data available
Melting point	: > 93 °C (200°F)
Freezing point	: No data available
Boiling point	: Not applicable
Critical temperature	: Not applicable
Flash point	: Not applicable
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: ≥ 260 °C (500°F) ASTM D 1929

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Vapor pressure	: Not applicable
Relative vapor density at 20 °C	: Not applicable
Relative density	: No data available
Density	: 0.07 (water=1)
Solubility	: insoluble in water
Log Pow	: Not applicable
Auto-ignition temperature	: > 482 °C (900°F)
Decomposition temperature	: Not available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

VOC content : Not available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Keep away from heat and open flame.

10.5. Incompatible materials

Strong oxidizers. Chlorinated hydrocarbons. aromatic hydrocarbons.

10.6. Hazardous decomposition products

Thermal decomposition and incomplete combustion can produce toxic fumes containing the following: acids, acrolein, aldehydes, halogens, ketones, monomers, possible hydrocarbons, carbon monoxide and carbon dioxide.

SECTION 11: Toxicological information

Routes of exposure : Inhalation, ingestion, skin and eye contact

11.1. Information on toxicological effects

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

Formic acid (64-18-6)

LD50 Oral rat	730 mg/kg
LD50 Dermal rat	> 2000 mg/kg Wistar, no mortality observed
LC50 Inhalation rat	7.4 mg/l/4h Sprague-Dawley

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified

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Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: Not applicable
Symptoms/effects after inhalation	: Inhalation of particles can cause coughing and shortness of breath. Inhalation of by-product formic acid (if present) can cause nose and throat irritation.
Symptoms/effects after skin contact	: Contact with normal insulation boards is not expected to cause symptoms. Contact with by-product formic acid (if present) can severely irritate and possibly burn unprotected skin. .
Symptoms/effects after eye contact	: Contact with normal insulation board may cause an abrasion. Contact with by-product formic acid (if present) can severely irritate eyes and possibly cause burns and eye damage.

SECTION 12: Ecological information

12.1. Toxicity

Formic acid (64-18-6)

LC50 fish 1	130 mg/l 96 h
EC50 crustacea	540 mg/l 48 h

12.2. Persistence and degradability

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Persistence and degradability This product is not readily bio-degradable. Plastic components will photodegrade with prolonged exposures to UV light (e.g. sunlight). Product is treated with a flame retardant substance which is known to be persistent, bioaccumulative and toxic in the aquatic environment. Prevent releases to the environment and ensure proper disposal.

Formic acid (64-18-6)

Biodegradation	100 % 14 d
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12.3. Bioaccumulative potential

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Log Pow	Not applicable
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Formic acid (64-18-6)

Log Pow	-0.46
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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 : Where facilities exist, the product and packaging can be recycled. Dispose in accordance with local regulations. Store material for disposal as indicated in Section 7 Handling and Storage. Proper incineration in state-of-the-art incinerators equipped with after-burners, yields carbon dioxide and water. Polymer materials may not decompose in modern sanitary landfills. Materials may be recycled where adequate collection and recycling facilities exist.

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SECTION 14: Transport information

In accordance with DOT

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Not applicable

14.3. Transport hazard class(es)

DOT

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

14.4. Packing group

Packing group (DOT) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT

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

OSHA: Article, Non-Hazardous according to OSHA Hazard Communication Standard 29 CFR 1910.120 (2012).

TSCA Inventory: All component substances are listed on the TSCA 8(b) inventory.

Section 8(d) health and safety reporting list of substances.

SARA Title III : Sec.302 / 304 : None. Sec. 313 : None.

15.2. International regulations

CANADA

WHMIS Classification: Not controlled. Product meets the definition of a "manufactured article" and is not subject to the regulations of the Hazardous Products Act.

DSL: Component substances are listed on the DSL.

RoHS Compliance

Restricted substances Cadmium, Lead, Mercury, Chromium VI, Polybrominated Biphenyls (PBBs) and Polybrominated Diphenyl Ethers (PBDEs) were below RoHS limits.

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

Formic acid(64-18-6)

State or local regulations

U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities;
U.S. - Minnesota - Hazardous Substance List;
U.S. - New Jersey - Right to Know Hazardous Substance List;
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations;
U.S. - New York - Right to Know List of Hazardous Chemicals;
U.S. - Pennsylvania - List of Hazardous Substances;
U.S. - Washington - Permissible Exposure Limits - STELs

SECTION 16: Other information

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Revision date : 06/04/2021
Data sources : Manufacturer Information.
Component Supplier SDSs.

Full text of H-phrases

H226 Flammable liquid and vapor
H302 Harmful if swallowed
H314 Causes severe skin burns and eye damage

Abbreviations and acronyms

ACGIH (American Conference of Government Industrial Hygienists)
GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).
OSHA: Occupational Safety & Health Administration
No-Observed Adverse Effect Level

Safety Data Sheet (SDS), USA

For additional product and / or MSDS information, please contact Kingspan Insulation LLC at 800) 241-4402. Information provided by sources external to our company and set forth herein is offered in good faith as accurate, but without guarantee. Safety precautions contained herein cannot anticipate all individual and unique situations. Conditions of use and suitability of the product for particular uses are beyond our control. All risks of use of the product are, therefore, assumed by the user, and we expressly disclaim all warranties of every kind and nature, including warranties of merchantability and fitness for a particular purpose in respect to the use or suitability of the product. Nothing herein is intended as recommendation for uses which infringe valid patents or as extension of license under valid patents. Appropriate warnings and safe handling procedures should be provided to users.