1. Identification

Product name/GHS identifier: JELD-WEN MiraTEC Exterior Trim and Extira Exterior Panel

Identification: Hazards herein refer to dust produced from milling, machining, sanding, grinding, and otherwise generated particulates from mechanical action on hardwood trim and panels.

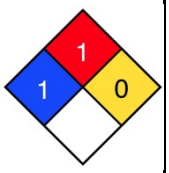
Product use/description: All exterior trim and panels are articles as shipped-nonhazardous and exempt from classification. Modifications to exterior trim and panel products, such as cutting, sanding, drilling, grinding, and other machining activities, may generate dust, classified below.

Manufacturer/supplier: JELD-WEN, inc.
3250 Lakeport Blvd.
Klamath Falls, OR 97601

Emergency Telephone: 1-(541)-885-7420 [USA] 24-Hour

2. Hazards Identification

Classification	Category	Hazard Statements
Skin irritation	3	H316: Wood dust causes mild skin irritation
Eye irritation	2B	H320: Wood dust causes eye irritation
Respiratory sensitization	1	H334: Dust from some wood species may cause allergy or asthma symptoms or breathing difficulties if inhaled
Carcinogen	1	H350: Inhalation exposure to dust may cause cancer
Combustible Dust	None	If small particles are generated during further processing, handling or by other means, wood may form combustible dust concentrations in air.

HMIS Label	NFPA Label	*Danger!*	Precautionary Statements
			P201: Obtain special instructions before use. P202: Do not handle dust until all safety precautions have been read and understood. P264: Wash exposed skin and eyes thoroughly after handling dust. P273: Avoid release to the environment. P280: Use protective gloves and eye protection as required. P308: If exposed or concerned: get medical advice/attention. P501: Dispose of product in accordance with local, state, and federal guidelines.

Other hazards: Some dust may contain wood species that can cause allergic contact dermatitis.
Waste, as defined in Directive 2006/12/EC, is not subject to classification, labelling and packaging requirements in 2008/1272/EC.

3. Composition / Information on Ingredients

Hazardous Substances	CAS No.	EC No.	Composition (Mass %)
Wood	No CAS[a]	No EC	<92
Resin	9011-05-6 009009-54-5	No EC	<7
Slack Wax (Petroleum)	64742-61-6	265-165-5	< 4
Zinc Borate	138265-88-0	265-169-7	< 1
Titanium Dioxide	13463-67-7	236-675-5	< 1

Additives or impurities
Particulates generated by machining exterior trim and panels may also include a small percentage of particulates from cured coatings and other trace materials. The presence of these particulates is < 1% of the total dust anticipated to be generated, and does not increase or otherwise change the hazards associated with this material.
[a] No CAS per National Institute of Occupational Safety and Health. Wood is primarily maple, oak, hickory, and beech.

4. First Aid Measures

If inhaled: Wood dust may cause irritation to nose, throat; nasal dryness; coughing, sneezing, wheezing. Some wood species are sensitizers and may cause asthma. If cough or difficulty breathing develops; contact emergency medical provider, who should evaluate for respiratory tract irritation, bronchitis, pneumonitis. Titanium dioxide in dust is suspected of causing cancer. If exposed or concerned, get medical advice/attention.

If in eyes: Dust may cause mild eye irritation. In case of eye contact, immediately flush eyes with plenty of water (for at least 15 minutes). Call a physician if irritation persists.

If ingested: None

If skin contact: Wood dust may cause skin dryness and irritation. Some wood species are sensitizers and may cause contact dermatitis. Remove dust from skin by brushing. Flush skin with plenty of water. Consult physician if irritation persists.

5. Fire Fighting Measures

Suitable extinguishing media: Use water, dry chemical, carbon dioxide, foam, or other general purpose agent to extinguish fire. Use water to wet dust to reduce likelihood of ignition or dispersion of dust into the air. Remove burned or wet dust to open area after fire is extinguished.

Combustion products: Irritating or toxic substances may be emitted upon thermal decomposition. Thermal decomposition products include carbon monoxide, carbon dioxide, and water.

Special protective actions for firefighters: Keep upwind of fire. Wear full firefighting turn-out gear and respiratory protection (SCBA). Large quantities of airborne combustible dust may ignite a secondary explosion.

6. Accidental Release Measures

Personal precautions: If dust becomes airborne, use personal protection recommended in *Section 8*. Wash exposed skin after handling.

Environmental precautions: Do not flush or sweep dust or waste into sewers or other drainage systems. Contain accumulated dust and dispose per *Section 13*.

Containment and cleanup: Sweep or vacuum dust and waste into solid container for recovery and disposal or storage. Avoid dust generating activities.

7. Handling and Storage

Handling: If modifications generate dust, minimize airborne dust. Avoid breathing dust. Avoid dust contact with eyes. Keep surfaces free of dust accumulations.

Storage: Keep away from ignition sources, such as heat, flames, static, and sparks. Depending on moisture content, particle diameter and airborne concentration, combustible dust may explode in the presence of an ignition source. Reference NFPA Standards- 654 and 664 for guidance.

8. Exposure Controls / Personal Protection

Occupational Exposure Limits				
Component	**OSHA PEL**	**ACGIH TLV**	**Applicable International**	
Wood fiber (as wood dust)	5 mg/m^3 (respirable) 15 mg/m^3 (total)	1 mg/m^3	UK WEL: 5 mg/m³	BC: 1 mg/m³
Resin	5 mg/m^3 (respirable) 15 mg/m^3 (total)	10 mg/m^3	None	None
Wax (as oil mist)	5 mg/m^3	5 mg/m^3	UK WEL: 5 mg/m^3	BC: 1 mg/m³
Zinc borate	5 mg/m^3 (respirable) 15 mg/m^3 (total)	10 mg/m^3	None	None
Titanium dioxide	15 mg/m^3	10 mg/m^3	UK WEL: 10 mg/m³ (total) 4 mg/m³ (respirable)	BC: 10 mg/m³ (total) 3 mg/m³ (respirable)

Engineering Controls: Controls may be necessary to reduce dust to below its exposure limits during cutting, sanding, and other machining operations. Use local exhaust ventilation near the source to minimize dust distribution and accumulation.

Personal Protective Equipment (PPE):

Eye Protection: Wear adequate eye protection; safety glasses, goggles, and/or face shields, depending on the activity performed.

Skin Protection: Avoid skin contact by wearing cloth or leather gloves and long sleeves where feasible.

Respiratory Protection: Dust exposure above exposure limits is not expected during normal use. If exposure limits might be exceeded, appropriate air purifying respirators with particulate filters should be worn. The minimum level of respiratory protection is a NIOSH- N95 disposable dust mask. When respirators are required, OSHA requires a respirator program per *29 CFR 1910.134*.

9. Physical and Chemical Properties

Appearance / odor:	Exterior trim and panels are articles. Dust generated from machining is light to dark colored granular to fibrous; finely divided particulate. Wood odor is mild, not overpowering or displeasing, may include a slight resin/solvent odor.		
Odor threshold:	Not applicable	**Lower Flammability Limit:**	>40g/m^3 (wood dust)
pH	Not applicable	**Upper Flammability Limit:**	Unknown
Melting / freezing point:	Not applicable	**Auto-ignition temp:**	400 - 550°F / 477-553 K (wood dust)
Initial boiling point / range:	Not applicable	**Vapor density:**	Not applicable
Flash point:	Not applicable	**Vapor pressure:**	Not applicable
Evaporation rate:	Not applicable	**Specific gravity:**	~0.56 (wood dust)
Molecular weight:	Varies	**Solubility:**	Insoluble
Flammability (solid / gas):	Not applicable	**Partition Coefficient:**	Not applicable
Viscosity:	Not applicable	**Decomposition temperature:**	Unknown

10. Stability and Reactivity

Reactivity: Not reactive

Chemical stability: Stable

Possibility of hazardous reaction: None

Conditions to avoid: Excessive heat, sparks, flames, other ignition sources

Incompatible materials: None known

Hazardous decomposition products: Natural decomposition of organic materials such as wood dust may produce toxic gases and an oxygen deficient atmosphere in enclosed or poorly ventilated areas.

11. Toxicological Information

Likely routes of exposure: Inhalation of dust may cause upper respiratory tract irritation. Skin or eye contact with dust from this product may cause physical irritation. Dust may cause allergenic effects upon inhalation or skin contact. Components in dust are potential carcinogens via inhalation.

Acute toxicity: Zinc borate has low acute oral toxicity.

Skin corrosion/irritation: Zinc borate has low acute dermal toxicity. Wood dust is a mild skin irritant. May cause reddening and irritation

Eye damage/irritation: Dust may cause mild eye irritation.

Respiratory or skin sensitization: Some wood species can elicit contact dermatitis or respiratory allergic response in sensitized individuals with prolonged or chronic contact. ACGIH: Review of human studies found that, “wood dusts can cause allergic contact dermatitis as a result of Type I and Type IV hypersensitivity, as well as irritant dermatitis.”

Germ cell mutagenicity: None

Carcinogenicity: Wood dust and titanium dioxide in dust are potential carcinogens. See classifications in table below.

Reproductive toxicity: Animal ingestion studies, at high doses, indicated that borates may cause reproductive effects. Human studies of occupational exposure to borate dust showed no adverse effect on reproductive health.

Specific target organ (STOT): *Single exposure:* none. *Repeated exposure:* Inhalation of large amounts of dust may cause respiratory irritation and distress. ACGIH: "Studies of workers exposed to wood dust have observed decreased lung function compared to unexposed controls". FIOH-DIHT: "Data generated by the WOOD-RISK project collectively suggest an elevated risk of pulmonary disorders due to repeated exposure to wood dust, whether from hardwood or softwood species, mediated via inflammatory mechanisms."

Aspiration hazard: None

Acute Toxicity Values

Component	Organism (Source)	Test Type	Route	Reported dose (normalized dose)	Effect / Notes
Linseed oil (as oil mist)	Mouse [a]	LD50	oral	22,000 mg/kg	The available toxicological data contain no evidence that an acute exposure to a high concentration of oil mist (mineral) would impede escape or cause any irreversible health effects within 30 minutes.
Wax (as oil mist)	Mouse [a]	LD50	oral	22,000 mg/kg	The available toxicological data contain no evidence that an acute exposure to a high concentration of oil mist (mineral) would impede escape or cause any irreversible health effects within 30 minutes.
Zinc borate	Rat [b]	LD50	oral	>10,000 gm/kg	practically non-toxic
	Rat [b]	LD50	oral	>10,000 mg/kg	practically non-toxic
Titanium dioxide	rat [c]	LC50	inhalation	>6,820 mg/m^3	practically non-toxic; 4-hr exposure; approx. lethal conc.; particle size not specified
	mouse, male [d]	LD50	oral	>10,000 mg/kg	practically non-toxic; 7-day observation period
	rabbit [c]	LD50	dermal	>10,000 mg/kg	practically non-toxic; approximate lethal concentration
	rat [d]	LD50	oral	>5,000 mg/kg	practically non-toxic

[a] Bothe et al. 1975
[b] Hubbard, S. Comparative Toxicology of Borates. 1998.
[c] MDL Information Systems, Inc. Carbonic acid, calcium salt (1:1). Last updated: 2008-11. In: Registry of Toxic Effects of Chemical Substances (RTECS®).
[d] Roy, D., et al. Acute toxicity of dyes used in drugs and cosmetics. Eastern Pharmacist. Vol. 24 (May 1981). p. 125-126

Carcinogenicity						
Component	**NTP**	**IARC**	**OSHA**	**NIOSH**	**ACGIH**	**EPA**
Wood	K	1	—	P	A1	—
Resin	—	—	—	—	—	—
Wax	—	—	—	—	—	—
Zinc borate	—	—	—	—	—	—
Titanium dioxide	—	2B	—	—	A4	—

NTP: Wood dust is known to be a human carcinogen based on sufficient evidence of carcinogenicity from studies in humans.
NIOSH: Wood dust is listed as a potential occupational carcinogen.
IARC: Wood dust is carcinogenic to humans (Group 1). Titanium dioxide is possibly carcinogenic to humans (Group 2B).
ACGIH: Titanium dioxide listed as not classifiable (A4). Beech and oak wood dust are listed as confirmed human carcinogen (A1).

12. Ecological Information

General information: No testing is available for dust generated from the product. Available ecological information for components is summarized.

Zinc borate: Borate and zinc occur naturally in seawater at average concentrations of 5 mg/L and at lower concentrations in fresh water; however it can be harmful to plants and aquatic life in high concentrations. Care should be taken to minimize the amount of zinc borate released into the environment.

Toxicity: Titanium dioxide >240 mg/L, 96-Hr. LC50 Cyprinodon variegatus (fish, estuary, marine), (Du Pont de Nemours (Deutschland) GmbH, Bayer AG Leverkusen, In: ICULID)

Zinc borate > 2.7 mg/L, 96-Hr. LC50 Oncorhynchus mykiss (rainbow trout)

> 355 mg/L, 96-Hr. LC50 Lepomis macrochirus (bluegill)

Persistence and degradability: Under certain conditions, zinc borate will slowly hydrolyze to form other inorganic chemicals such as zinc hydroxide and boric acid.

Bio-accumulation potential: Not available

Mobility: Zinc borate is sparingly soluble in water and may be leachable through normal soil.

13. Disposal Considerations

Disposal methods: Do not dispose to sewer or environment. Observe all applicable federal, state, and local regulations. Waste, as defined in Directive 2006/12/EC, is not subject to classification, labelling and packaging requirements in 2008/1272/EC.

RCRA Waste Code: Does not meet RCRA criteria for US hazardous waste. Not listed and does not contain any TCLP compounds.

14. Transport Information

UN Number: None. Also no CHRIS or DOT Hazard number.

Proper shipping name: Exterior Trim and Panels

Transport hazard classes: Not considered a hazardous classification

Packing group, if applicable: No specific hazardous material packing requirements

U.S. Department of Transportation (DOT): Not regulated

Transportation of Dangerous Goods (TDG): Not regulated

International Maritime Organization (IMDG): Not regulated

International Air Transport Association (IATA): Not regulated

15. Regulatory Information

US Federal Regulations Applicable to Ingredients	
Regulation	**Components**
Hazard Communication	Articles are not hazardous under the criteria of the US OSHA Hazard Communication Standard 29 CFR 1910.1200. However, dust generated by sawing, sanding or machining products may be hazardous and is included.
SARA Title III	No Extremely Hazardous Substances. No components listed under section 311/312. This product does not contain any chemical ingredients with known CAS numbers that exceed the de minimis reporting levels established by SARA Title III, section 313 and 40 CFR section 372.
TSCA Inventory List	All components, except wood fiber, are included in the EPA Toxic Substances Control Act Chemical Substance Inventory.
CERCLA	None listed.
FDA	Not intended for use as a food additive or indirect food contact item.

US State Regulations Applicable to Ingredients	
Component	**US State Permissible Exposure Limits (PELs)**
Wood dust	California, Michigan, Vermont: 5 mg/m^3 PEL, 10 mg/m^3 STEL
	Oregon: 10 mg/m^3 PEL (non-allergenic)
	Washington: 5 mg/m^3 PEL, 10 mg/m^3 STEL (nonallergenic), 2.5 mg/m^3 PEL, 5 mg/m^3 STEL (allergenic)
	New Jersey Right to Know List
	Massachusetts Substance List
	California Proposition 65 List – Cancer, Dec 2009
Titanium dioxide	Oregon, Michigan, Washington: 10 mg/m^3
	California: PNOR 5 mg/m^3 (resp) 10 mg/m^3 (total)
California Proposition 65: This product contains one or more chemicals known to the State of California to cause cancer when airborne unbound particles of respirable size are generated.	
All product components are listed in the New Jersey Right to Know List, Massachusetts Hazardous Substance List, Minnesota Hazardous Substance List and Pennsylvania Right to Know List	

International Regulations Applicable to Ingredients	
Component	**Regulation**
Wood dust	British Columbia: 5 mg/m^3 PEL, 10 mg/m^3 STEL
	Germany: Skin sensitizer, carcinogen
	WHMIS Controlled Product: D2A (wood dust: IARC Group 1)
Titanium dioxide	Specified on the Canadian Domestic Substance List and meet WHMIS D2A – “very toxic”.

Classification	Category	Basis of Classification
Self-classification of mixture based on available data consistent with GHS Rev. 4 and OSHA 29 CFR 1910.1200. 98% of the mixture consists of component(s) of unknown hazards to the aquatic environment. 94-96% of the mixture consists of components of unknown acute toxicity hazards.		
Skin irritation	3	Wood dust causes mild skin irritation
Eye irritation	2B	Wood dust causes eye irritation
Respiratory sensitization	1	Dust from some wood species may cause allergy or asthma symptoms or breathing difficulties if inhaled
Carcinogen	1	Inhalation exposure to wood dust may cause cancer
Combustible Dust	None	If small particles are generated during further processing, handling or by other means, wood may form combustible dust concentrations in air.

16. Other Information

Revision Indicator: SDS, Version 1.0 Draft (March 26, 2015)

Preparer: PCA Health and Safety Consultants, Inc. in Lake Oswego, OR 1-(503)-652-6040 [USA]

Abbreviations and acronyms:
HMIS – hazardous materials information system, NFPA – US National Fire Protection Agency, CAS – Chemical Abstracts Service Registry, EC – European Commission, NIOSH - National Institute of Occupational Safety and Health, SCBA – self-contained breathing apparatus, OSHA – US Occupational Safety and Health Act, PEL – Permissible Exposure Limit, ACGIH – American Conference of Governmental Industrial Hygienists, UK WEL – United Kingdom Health and Safety Executive Workplace Exposure Limit, GER MAK – Germany Maximum Workplace Concentration, TLV – Threshold Limit Value, PNOR - particulates not otherwise regulated (nuisance, or "inert" dust), PNOS - particulates not otherwise specified, ATSDR – Agency for Toxic Substances and Disease Registry, NTP – National Toxicology Program, IARC- International Agency for Research on Cancer, IUCLID - International Uniform Chemical Information Database

This Safety Data Sheet (SDS) meets the requirements of Global Harmonization System (GHS) Rev. 4, OSHA Hazard Communication Standard (29 CFR 1910.1200), and Health Canada's WHMIS. The Information presented herein has been compiled from sources considered to be reliable and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. No warranty of any kind, express or implied, is made concerning the safe use of this material in your process or in combination with other substances.

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