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HIGH DENSITY OVERLAID SIGN/INDUSTRIAL SAFETY DATA SHEET

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Section 1: Material identification

HMIS

Material Name: High Density Overlaid Sign/Industrial

Trade Names and Synonyms: Highway HDO®,
Guardian HDO®,
Boat Seat

Chemical Family: Wood

Health (see section VI for FIRST AID MEASURES)	1
Flammability (see section IV for Fire Fighting Measures)	0
Reactivity	0
Personal Protection (depends on usage see section VIII)	

HMIS Hazard Rating (0-insignificant 1-Slight 2-Moderate 3-High 4-Extreme)
Health 1, Flammability 0, Reactivity 0, PPE – See section VIII.

Section 2: Hazards

Under normal use this product does not present any type of emergency conditions. If exposed to temperatures greater than 400 degrees F a fire may be caused. Smoke may contain hazardous chemicals such as carbon monoxide, Aldehydes and other toxic materials.

Hazards arise from remanufacture (sawing/drilling ect.), which will release wood dust and cured resins during this process. Free formaldehyde levels are below OSHA reporting requirements.

Formaldehyde Gas: Large Chamber Threshold (ASTM E1333-96 [02]): < 0.01 ppm

Section 3: Composition

Product is made from veneered softwood, phenol formaldehyde adhesives, resins, paper under heat and pressure. Product contains cured phenol formaldehyde adhesives and resins, which may release formaldehyde in trace, but limited detectable amounts. Release formaldehyde of <0.01 parts per million in Large Scale Chamber Test. NTP and OSHA – Probable Human Carcinogen, IAGC Group 1 for sufficient evidence that formaldehyde causes nasopharyngeal, a rare cancer in humans, and "limited evidence" for cancer of nasal cavity and sinuses, and a "strong but not sufficient evidence" for leukemia.

Section 4: FIRST AID PROCEDURES:

Eyes Flush with water to remove dust.
Inhalation Remove to fresh air.
Skin Wash with soap & water. Remove splinters. Consult physician after rash or persistent irritation or evidence of dermatitis.
Ingestion Consult physician.

In all cases if irritation persists, obtain medical advice.

Target Organs: Eyes, skin, mucous membranes, and upper respiratory tract.

Skin and Eye Contact Wood dust can cause eye irritation. Various wood species can elicit allergic contact dermatitis in sensitized individuals.

Ingestion Is not applicable under normal use.

Skin Absorption Not known to occur

Inhalation May cause nasal dryness, irritation and obstruction. Coughing, wheezing and sneezing sinusitis and prolonged colds have also been reported. Allergic response, asthma or bronchitis may develop

Chronic overexposure Formaldehyde is classified by NTP to be a known human carcinogen; IAGC on Cancer Monographs Group 1 (nose and pharynx); and a potential carcinogen by OSHA.

Wood Dust: NTP known to be a human carcinogen (12th Report)., IAGC on Cancer Monographs Group 1: Carcinogenic to humans; sufficient evidence of carcinogenicity.

Section 5: Fire and Explosion Hazard Data

Flashpoint: None
LEL: 40 g/m³ for wood dust
Auto-ignition temperature: Variable (typically >400°F)

FIRE FIGHTING MEASURES

Extinguishing Media: Water Spray, Carbon Dioxide Foam or Dry Chemical as determined by surrounding fire

Unusual Fire and Explosion Hazards: Wood Dust. In remanufacture, accumulation of wood dust during sawing may lead to explosive conditions when in the presence of an ignition source depending on particle size and moisture content.

Building Code and Flame Spread Ratings: ASTM E-84 standard fire test flame spread places product in Class C or Class III category.

Protection for Fire Fighters: Self-contained breathing apparatus (SCBA) recommended when fighting fire.

Section 6: Spill and Disposal Procedures

Steps to be taken in case material is released or spilled:

No special precautions are required for the "as produced" product. In the remanufacturing operation sawdust should be contained. Sweep or vacuum dust for disposal, avoid creating dust conditions. Provide good ventilation when dust conditions are likely to occur.

Section 7: Handling and Storage

Precautions to be taken in Handling and Storing: Do not store product at high humidity in un-vented space and away from ignition sources.

Follow good personal hygiene practices: Don't drink/smoke/eat where dust is present.

Section 8: Personal Protection Equipment (PPE)

Respiratory Protection: Dust mask when sawing. When the dust exceeds action levels, respirators must be used per 29 CFR 1910.134

Ventilation: Local exhaust to control sawdust in air as required by OSHA, state or local regulations.

Protective Gloves: Recommended for handling and sawing.

Eye Protection: Safety glasses recommended when sawing

Exposure Guidelines

Component	Percentage	Exposure Limits			
		OSHA PEL	OSHA STEL	ACGIH TLV-TWA	ACGIH TLV-STEL
Wood (softwood)	80-95%	10.0 mg/m ³	None	1.0 mg/m ³ (I)	None
Formaldehyde*	< 0.1%	.75 ppm	2 ppm	0.3 ppm C (I)	None
Cured Coatings	< 1 %	10.0 mg/m ³	None	10.0 mg/m ³ (I)	None
Cured Resin Solids	5-20%	PNOS-10.0 mg/m ³	None	5.0 mg/m ³ (I)	None

⁽¹⁾ ACGIH – American Conference of Governmental Industrial Hygienists, TLV – threshold limit value, TWA – time-weighted average, STEL – short-term exposure limit (15- minutes), OSHA - Occupational Safety and Health Administration, PEL – permissible exposure limit, I – Inhalable, C – Ceiling Limit, not to exceed, PNOS – Particles not otherwise specified

* Structural panels manufactured in accordance to PS 1-09 are exempt from California Air Resources Board regulations (Section 93120.1 (8)). However, plywood manufactured by Swanson Group contain no added urea formaldehyde and it's formaldehyde level is < 0.05 parts per million, which is the lowest phase 2 (2012) CARB formaldehyde limit, based on certified tests conducted in 2007 at an IAS accredited laboratory.

Section 9: Physical Data

Specific gravity: Approximately 0.5, (Water = 1)

Percent Volatile: Approximately 5% at 220 F

Solubility in Water: Insoluble

Heat of Combustion: 8,000 to 10,000 BTU/Lb.

Appearance and Odor: Wooden Panels, Wood-Like

Section 10: Reactivity Data

Stability: Stable

Incompatibility: Avoid contact with strong oxidizers.

Conditions to Avoid:

Formaldehyde: First time exposure of product to high humidity and elevated temperatures may result in release of formaldehyde gas.

Wood Dust: Accumulation of wood dust in remanufacturing area may result in spontaneous heating or combustion. 212 F has been suggested as the upper temperature limit for continuous exposure of wood without risk of ignition. For wood dust this temperature would be lower. Avoid contact with oxidizers and drying oils.

Hazardous Decomposition Products:

Burning of wood products produces irritating and toxic fumes and gases including Carbon Monoxide, Aldehydes and Organic Acids. Decomposition products of phenolic resins include formaldehyde, aromatic ring compounds and other toxic compounds.

Section 11: Toxicological Information

Wood Dust Carcinogenicity Listing: Wood dust is listed by NTP known to be a Human Carcinogen (12th report), IARC Monographs: Wood dust, Group 1 – IARC Group 1: Carcinogenic to humans; sufficient evidence of carcinogenicity. This classification is primarily based on studies showing an association between occupational exposure to wood dust and adenocarcinoma of the nasal cavities and paranasal sinuses. IARC did not find sufficient evidence of an association between occupational exposure to wood dust and cancers of the hypopharynx, oropharynx, lymphatic and hematopoietic systems, lungs, stomach, colon or rectum.

Section 12: Ecological Information

Wood products are not expected to pose an ecological hazard as a result of their intended use. As with all foreign substances do not allow to enter the storm drainage systems.

Section 13: Disposal Considerations**Waste Disposal Method:**

Scrap can be landfilled or incineration in suitable incinerators only. Sawdust should be placed in a container for proper disposal in landfill or burning in a suitable incinerator as stipulated by local state and federal regulatory requirements.

Section 14: Transportation Information

U.S. Department of Transportation – non-regulated material

Section 15: Regulatory Information

Non-regulated material

Section 16: Other Information

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Definition of Common Terms:

ACGIH = American Conference of Governmental Industrial Hygienists

ASTM = American Standards Testing Methods

CARB = California Air Resources Board

CFR = Code of Federal Regulations

HMIS = Hazardous Materials Identification System

IARC = International Agency for Research on Cancer

LEL = Lower Explosive Limit

NTP = National Toxicology Program

OSHA = Occupational Safety and Health Administration

PEL = Permissible Exposure Limit

PS1 = Performance Standard for Structural Panels

STEL = Short-Term Exposure Limit (15 minutes)

TLV = Threshold Limit Value

TWA = Time-Weighted Average (8 hours)

Disclaimer: The information and data herein are believed to be accurate and have been compiled from sources believed reliable. Although reasonable care has been taken in preparation of this information, Swanson Group makes no warranty of any kind, expressed or implied, concerning the accuracy or completeness of this information or data, and assumes no responsibility for its application to purchaser's intended purposes (if purchaser alters the product in such a manner as to create wood dust, then this is purchaser's responsibility). Normally recommended industrial hygiene, engineering practices and safe handling procedures should be employed at all times.