

## MEDIUM DENSITY OVERLAID PLYWOOD MATERIAL SAFETY DATA SHEET

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**EMERGENCY NUMBER: (360) 432-5005**  
**Ken Pratt, Product Development/Technical Director**

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### **Section I: Material identification**

HMIS

Material Name: Medium Density Overlaid Plywood

Trade Names and Synonyms: Signal® MDO,  
Guardian MDO,  
2-Step® MDO

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)  |   |

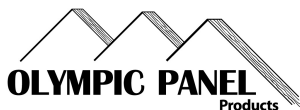
### **Section II: Ingredients and Hazards**

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.

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.

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



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### **Section III: 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 IV: Fire and Explosion Hazard Data**

Flashpoint: None  
LEL: 40 g/m<sup>3</sup> for wood dust  
Auto-ignition temperature: Variable (typically >400°F)

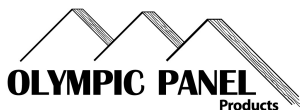
#### **FIRE FIGHTING MEASURES**

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.



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### Section V: 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.

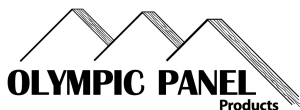
### Section VI: Health Hazards

Exposure Guidelines

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

<sup>(1)</sup> 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 Olympic Panel Products 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.



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**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.....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 (12<sup>th</sup> Report)., IAGC on Cancer Monographs Group 1: Carcinogenic to humans; sufficient evidence of carcinogenicity.

### EMERGENCY AND 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.

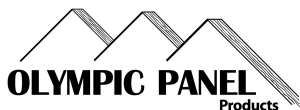
Ingestion..... Consult physician.

In all cases if irritation persists, obtain medical advice.

### Section VII 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.



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### **Waste Disposal Method:**

Scrap can be landfilled. 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 VIII: 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

### **Section IX: Special Precautions**

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

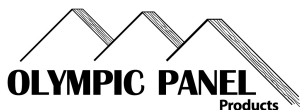
**Follow good personal hygiene practices:** Don't drink/smoke/eat where dust is present.

**Other Precautions:** None

### **Section X: Toxicological Information**

**Wood Dust Carcinogenicity Listing:** Wood dust is listed by NTP known to be a Human Carcinogen (12<sup>th</sup> 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 XI: Ecological Information**



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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 XII: Transportation Information**

U.S. Department of Transportation – non regulated material

### **Section XIII: Other Information**

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

#### **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, Olympic Panel Products LLC. Company 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.