

173P | Technical Data Sheet

High Density Overlay (HDO)

173P Highway Sign HDO

Description -

Paneltech's Highway Sign HDO is a specialty overlay composed of a bleached kraft paper saturated with high levels of phenolic thermoset resin. Its high resin content gives a smooth, glossy surface ideally suited to use as highway signs. The overlay is formulated for excellent surface adhesion.

HDO 173P bonds well to an MDO cushion sheet as well as commonly used wood substrates. 173P exceeds the requirements of the PS 1-07 Voluntary Product Standard.

Features -

- ✓ Hard, abrasion resistant surface
- ✓ Smooth surface with excellent adhesion properties
- ✓ Improves weatherability over untreated panels
- ✓ Quality controlled continuously by online weight and volatile sensors, calibrated hourly
- ✓ Each sheet visually inspected
- ✓ Caul release system formulated for painability and no buildup

Specifications -

Base Paper: 50 lb/3000 sf Bleached Saturating Kraft
Resin Content: 48% ± 1.5%
Weight: 81 gsm / 166 gsm
Caliper Thickness: 0.20mm (0.008 in.) (Before pressing)
Color: Light Yellow
Opacity: Medium

**Technical Data Sheet (continued)****High Density Overlay (HDO)***173P Highway Sign HDO***Laminating Recommendations:**

For best results, 173P should be applied over substrates with an exterior type glue line and have a process moisture content of not more than 8%. Press cycles may vary dependent upon press temperature. Release cauls are required between the press platens and panel overlay. To eliminate buildup and sticking, these cauls should be used only with other compatible release systems. These release cauls should only be used on Highway Sign HDO. Some concrete form releases have compounds that may reduce the desired adhesion properties of Highway Sign HDO. A minimum temperature of 285°F (140°C) at 185 to 200 psi (13.0 to 14.1 kg/cm²) and a minimum press cycle of 9 minutes should be met. Panels require minimal cooling after pressing.

Applications:

Highway signs

Other exterior applications where a smooth, weather resistant surface is desired

Packaging -

Sheet Dimensions in (cm)	50 in (127cm) x 99 in (252cm)	50 in (127cm) x 124 in (315cm)
Options	(Sheet Length, Sheet Width Sheets per Unit Adjustable)	(Sheet Length, Sheet Width Sheets per Unit Adjustable)
Sheets Per Unit	2000	1000
Total Area Measure sf (sm)	34,375 sf (3195 sm)	27,986 sf (2601 sm)
Gross Weight lb (kg)	2437 lb (1108 kg)	1526 lb (694 kg)

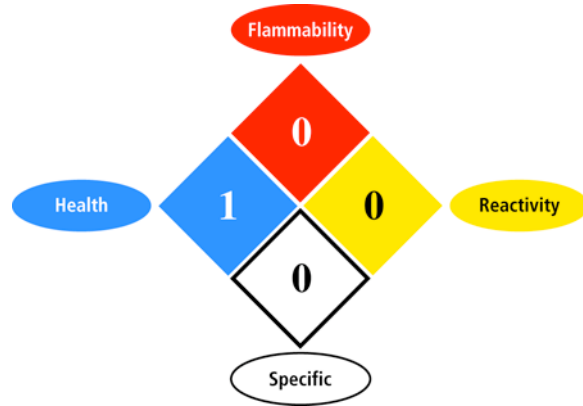
Storage Recommendations -

Recommended storage conditions are 70°F (21°C) or less in a dry location with the original packaging intact. High temperature and humidity will lead to blocking. Open rolls or pallets should be repackaged in the polyethylene material provided or equivalent. Under these conditions, the expected shelf life is 6 to 12 months.

173P | Material Safety Data Sheet

SECTION I – PRODUCT IDENTIFICATION

Product Code: **173P**
 Trade Name: **Highway Sign HDO**
 Product Class: **High Density Overlay**
 C.A.S. Number: Article
 MSDS Preparation: June 15, 2006
Revised: October 1, 2009
 H.M.I.S. Ratings:
 Health – 1
 Flammability – 0
 Reactivity – 0



SECTION II – HAZARDOUS INGREDIENTS

Ingredients	C.A.S.#	Weight % Max.	Exposure Limits
Phenol	108-95-2	<.6	5.0 PPM ACGIH
Formaldehyde	50-00-0	<.3	.75 PPM ACGIH
Methanol	67-56-1	<.04	200 PPM ACGIH

In-Use Emissions Potential:

Ingredients	C.A.S.#	Weight % Max.	Exposure Limits
Phenol	108-95-2	<0.0002%	5.0 PPM ACGIH
Formaldehyde	50-00-0	<0.001%	.75 PPM ACGIH
Methanol	67-56-1	<0.018%	200 PPM ACGIH

Note: OSHA = Occupational Safety & Health Administration
 ACGIH = American Conference of Governmental Industrial Hygienists

SECTION III – PHYSICAL DATA

Boiling Point:	N/A	Micro Chamber Analysis (% wt.): * Phenol .0002% * Formaldehyde .0008% * Methanol .018%
Specific Gravity:	N/A	
Volatile %:	N/A	
Evaporation Rate:	Non-volatile	
Vapor Density:	Non-volatile	
Appearance:	Buff-colored Paper	

SECTION IV – HEALTH HAZARD DATA

When heated the paper will give off small amounts of volatile chemicals, primarily formaldehyde, phenol and methanol.

PERMISSIBLE EXPOSURE LEVELS:

Phenol: The OSHA PEL (permissible exposure limit) and the ACGIH TLV (threshold limit value) for phenol is currently set at 5 PPM for an 8-hour TWA.

Formaldehyde: OSHA has established a 0.75-PPM PEL for formaldehyde as an 8-hour TWA and a 2 PPM 15 minute STEL (short term exposure limit). OSHA has also set a 0.5-PPM action level for formaldehyde (see OSHA regulation 21 CFR 1910.1048 for specific information regarding work place requirements). ACGIH TLV for formaldehyde is 0.75 PPM for and 8-hour TWA.

Methanol: The OSHA PEL and the ACGIH TLV for methanol is currently set at 200 PPM for and 8-hour TWA.

Effects of Over Exposure:

Contact with skin may cause irritation or rash. Eye contact may cause slight irritation or redness. Heated vapors may cause irritation of the respiratory tract.

First Aid:

Skin Contact:	Wash with soap and water at once.
Eye Contact:	Flush with water for 15 minutes and call a physician if irritation persists.
Inhalation:	If fumes or heated vapors are inhaled, remove victim to fresh air.

Primary Routes of Entry:

Inhalation of dust or fumes: Phenol may be absorbed through the skin.

Carcinogenicity:

Formaldehyde, a component of this product, is listed by the NTP (National Toxicology Program) in their third annual report as a substance that may be reasonably be anticipated to be a carcinogen. Formaldehyde is classified as a "probable carcinogen to humans" by the IARC (International Agency for Research on Cancer). TLV's have been established by the ACGIH. OSHA standard 1910.1048 also requires exposure monitoring in the work place. For the purpose of this standard, Formaldehyde concentrations greater than .1% require initial monitoring to determine if the action level has been exceeded. If the Monitoring levels are in excess of the action level, periodic monitoring will be required as stated in the OSHA standard. The free formaldehyde content in this product is listed in the physical data section of this MSDS.

SECTION V – FIRE AND EXPLOSION DATA

Flammability Class:	N/A
Flash Point:	N/A
LFL:	N/A
Extinguishing Media:	Water Spray, Carbon Dioxide, or Foam
Special Fire Fighting Procedures:	Not Known
Unusual Fire and Explosion Hazards:	Fire fighters should wear self-contained breathing apparatus to avoid inhalation of smoke and vapors.

SECTION VI – SPILL OR LEAK PROCEDURES

Material Release: Sweep up and place in a closed container. Proper PPE (Personal Protective Equipment) should be worn per Section VIII of this MSDS.

Waste Disposal Method: At this time, this material is not considered a hazardous waste as defined under the federal RCRA regulations (40 CFR 261) if discarded. However caution should be taken as these regulations can change and

state and local regulations may vary to reclassify this waste as hazardous. Material should always be disposed of in accordance with federal, state and local regulations.

For further information, contact your state or local solid waste disposal agency of the United States Environmental Protection Agency's RCRA hotline (800-424-9346 or 202-382-3000).

SECTION VII – STORAGE AND HANDLING

Storage Precautions: Store in a cool, dry location.
Handling: Avoid prolonged or repeated skin contact.
Other Precautions: Consult MSDS prior to using this product.

SECTION VIII – SPECIAL PROTECTION INFORMATION

Respiratory Protection: Should be worn to prevent breathing dust or heated fumes.
Ventilation: Local exhaust and general ventilation recommended.
Protective Gloves: Suitable protective gloves should be worn to protect against skin contact and to prevent paper cuts.
Eye Protection: Safety glasses or goggles are recommended.
Other Protective Equipment: As required to prevent prolonged or repeated skin contact.

SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point (F°): Not applicable	Solubility in Water: 0.1%
Vapor Pressure (MM Hg): Not applicable	pH: Not applicable
Evaporation Rate: Not applicable	Spec Gravity: Not applicable
Vapor Density (air=1): Not applicable	Appearance and Odor: Light tan to dark tan

SECTION X – REACTIVITY DATA

Stability: Stable
Hazardous Polymerization: Will Not Occur
Incompatibility: None known
Conditions to Avoid: Warm storage and ignition sources.
Hazardous Decomposition Products: Under severe thermal degradation, toxic fumes, carbon dioxide, carbon monoxide and formaldehyde may be formed.

SECTION XI – TOXICOLOGICAL INFORMATION

Data not available for product in purchased form. Individual component information is listed below if available.

SECTION XII – ECOLOGICAL INFORMATION

No information available at this time. As with all foreign substances, do not allow material to enter the storm drainage systems.

SECTION XIII – WASTE DISPOSAL

Follow safe solid waste disposal guidelines in accordance with federal, state and local regulations. If disposed of or discarded in its purchased form, incineration is the preferred method. Dry land disposal is acceptable in most states. It is however, the user's responsibility to determine at the time of disposal whether your product meets RCRA criteria for hazardous waste.

SECTION XIV – TRANSPORTATION INFORMATION

Not regulated as a hazardous material by the U.S. Department of Transportation.

SECTION XV – REGULATORY INFORMATION

313 SUPPLIER NOTIFICATION

This product contains the following toxic chemicals subject to the reporting requirements of “Section 313 of the Emergency Planning and Community Right to Know Act” of 1986 (40 CFR 372). This page must remain attached to this MSDS.

<i>CAS#</i>	<i>Chemical Name</i>	<i>Percent by Weight</i>
50-00-0	Formaldehyde	.0008
108-95-2	Phenol	.0002
67-56-1	Methanol	.018

We cannot anticipate all conditions under which this information and our products, the products of other manufacturers in combination with our products, may be used. We accept no responsibility for results obtained by the application of this product or the safety and suitability of our products, either alone or in conjunction with other products. Users are advised to make their own determinations, through testing as to the safety and suitability of each product or product combination for their own purposes. Unless otherwise agreed to in writing, we sell the products without warranty. Buyers and users assume all responsibility and liability for loss or damage arising from the handling and use of our products, whether used alone or in conjunction with other product.

SECTION XVI – OTHER INFORMATION

HMIS Hazard Rating (0- Insignificant, 1- Slight, 2- Moderate, 3- High, 4- Extreme)
Health – 1* (potential chronic effects) Flammability - 0 Reactivity - 0 Personal Protective
Equipment – Depends on Use.

Disclaimer:

Paneltech International, LLC believes the information contained in this MSDS to be accurate at the time of preparation and has been compiled using sources believed to be reliable. However, Paneltech International, LLC makes no warranty, either expressed or implied, concerning the accuracy or completeness of the information presented. It is the responsibility of the user to comply with local, state, and federal regulations concerning use of this product. It is the further responsibility of the buyer to research and understand safe methods of storing, handling and disposal of this product.