

MSDS for Deluxe Shelf Caddies



Material Safety Data Sheet

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IMPORTANT NOTE:

This material safety data sheet (MSDS) conforms to the U.S. Department of Labor Occupational Safety and Health Administration requirements in 29 CFR 1910.1200 and is an integral part of any "RIGHT TO KNOW" program. This information should be read by the customer and made available to anyone who has reason to use or to come in contact with this product.

Section 1 A – Product Identification – Coroplast™

Product Name: **COROPLAST™ CORRUGATED SHEETING**
Chemical Name(s) and/or synonym(s): **POLYPROPYLENE COPOLYMER**
Chemical Family: **PROPRIETARY FORMULA**

Section 2 A – Hazardous Components – Coroplast™

Chemical Name(s):	C.A.S.#	%	TLV	PEL
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IMPORTANT NOTE:

Pigments, additives and stabilizers are fully encapsulated in resin and are not expected to cause any hazardous conditions when processed in accordance with good manufacturing practices.
Any substance listed in Section 2 A are those identified as being present at a concentration of 1.0% or greater, or 0.1% or greater if the substance is on the list of potential carcinogens cited in the **OSHA HAZARD COMMUNICATION STANDARD** or by the respective manufacturer. Where a proprietary ingredient shows, the identity of this substance may be made available as provided in 29 CFR 1910.1200.

Section 3 A – Physical Data – Coroplast™

Specific Gravity (H₂O-1.0): .90 - .96
Physical Form: Opaque, Fluted Sheets
Solubility In Water: Essentially insoluble in water

Section 1 B – Product Identification – Anti-Static

Product Name: **COROPLAST™ ANTI-STATIC CORRUGATED SHEETING**
Chemical Name(s) and/or synonym(s): **ANTI-STATIC POLYPROPYLENE COPOLYMER**
Chemical Family: **PROPRIETARY FORMULA**

Section 2 B – Hazardous Components – Anti-Static

Chemical Name(s):	C.A.S.#	%	TLV	PEL
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IMPORTANT NOTE:

Pigments, additives and stabilizers are fully encapsulated in resin and are not expected to cause any hazardous conditions when processed in accordance with good manufacturing practices.
Any substance listed in Section 2 B are those identified as being present at a concentration of 1.0% or greater, or 0.1% or greater if the substance is on the list of potential carcinogens cited in the **OSHA HAZARD COMMUNICATION STANDARD** or by the respective manufacturer. Where a proprietary ingredient shows, the identity of this substance may be made available as provided in 29 CFR 1910.1200.

Section 3 B – Physical Data – Anti-Static

Specific Gravity (H₂O-1.0): .90 - .95
Physical Form: Opaque, Fluted Sheets
Solubility In Water: Essentially insoluble in water

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Section 5 – Health Hazard Data

Effects of Acute Overexposure: None Expected.

Emergency First Aid Procedures: If burned by molten material, cool as quickly as possible with water and see a physician for removal of adhering material and treatment of burn

Smoke or Dust Inhalation: Remove to fresh air and consult a physician.

Section 6 – Reactivity Data

Stability: Stable material.

Conditions to Avoid: None known.

Incompatibility (Material to avoid contact with): None known.

Hazardous Decomposition By-Products: Thermal decomposition and burning may produce Carbon Monoxide, Carbon Dioxide, and Hydrogen Bromide.

Hazardous Polymerization: Will not occur.

Section 7 – Spill or Leak Procedures

Steps To Be Taken In Case Material Is Released Or Spilled: Sweep up and return to container or discard if contaminated.

Waste Disposal Method: Solid waste disposal in accordance with Federal, State, and Local Regulations.

Section 8 – Special Protection Information

Respiratory Protection: Particulate Mask. If dusting occurs, use chemical respirator.

Ventilation: Local exhaust, good building ventilation.

Special Ventilation Requirements: None, however dust creation should be minimized.

Hand/Skin Protection: Cloth gloves to prevent cuts and scrapes from edges.

Eye Protection: Safety glasses or chemical goggles.

Other Protective Equipment: None needed.

Section 9 – Special Precautions or Comments

Precautions To Take In Handling and Storage: None. Normal bulk storage and handling of plastic. Do not expose materials to excessive heat, cold, or moisture.

Shipping Designation: Plastic sheets, flat.

D.O.T. Class/Number Required: Not regulated.

IMPORTANT NOTE:

This Material Safety Data Sheet supersedes all previous issues. Information and recommendations contained herein are based on sources considered to be dependable, and is accurate and reliable to the best of our knowledge. Since, however, safety data and standards, as well as government and state regulations are subject to change, and the conditions of handling and use, misuse are beyond our control, no guarantee or warranty of any kind, expressed or implied, is made.

If there are any questions concerning this Material Safety Data Sheet, please contact:

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800-666-2241 OR 972-392-2241 in Dallas

OR

800-361-5150 OR 450-378-3995 in Canada

 **Coroplast**TM

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Section 1 C – Product Identification – Conductive

Product Name: **COROPLAST™ COROGUARD CORRUGATED SHEETING**
Chemical Name(s) and/or synonym(s): **COMPOUNDED POLYPROPYLENE COPOLYMER**
Chemical Family: **PROPRIETARY FORMULA**

Section 2 C – Hazardous Components – Conductive

Chemical Name(s):	C.A.S.#	% TLV	PEL
CARBON BLACK	1333-86-4	3.5 MG/M(3)	3.5MG/M(3)

IMPORTANT NOTE:

Pigments, additives and stabilizers are fully encapsulated in resin and are not expected to cause any hazardous conditions when processed in accordance with good manufacturing practices.
Any substance listed in Section 2 C are those identified as being present at a concentration of 1.0% or greater, or 0.1% or greater if the substance is on the list of potential carcinogens cited in the **OSHA HAZARD COMMUNICATION STANDARD** or by the respective manufacturer. Where a proprietary ingredient shows, the identity of this substance may be made available as provided in 29 CFR 1910.1200.

Section 3 C – Physical Data – Conductive

Specific Gravity (H₂O-1.0): .90 - .95
Physical Form: Opaque, Fluted Sheets
Solubility In Water: Essentially insoluble in water

Section 1 D – Product Identification –Firewall F.R.B.

Product Name: **COROPLAST™ FIREWALL F.R.B. CORRUGATED SHEETING**
Chemical Name(s) and/or synonym(s): **FLAME RETARDANT POLYPROPYLENE COPOLYMER**
Chemical Family: **PROPRIETARY FORMULA**

Section 2 D – Hazardous Components – Firewall F.R.B.

Chemical Name(s):	C.A.S.#	% TLV
ANTIMONY COMPOUNDS	7789-61-9	0.5 MG/M3

IMPORTANT NOTE:

Pigments, additives and stabilizers are fully encapsulated in resin and are not expected to cause any hazardous conditions when processed in accordance with good manufacturing practices.
Any substance listed in Section 2 D are those identified as being present at a concentration of 1.0% or greater, or 0.1% or greater if the substance is on the list of potential carcinogens cited in the **OSHA HAZARD COMMUNICATION STANDARD** or by the respective manufacturer. Where a proprietary ingredient shows, the identity of this substance may be made available as provided in 29 CFR 1910.1200.

Section 3 D – Physical Data – Firewall F.R.B.

Specific Gravity (H₂O-1.0): 1.1 – 1.3
Physical Form: Opaque, Fluted Sheets
Solubility In Water: Essentially insoluble in water

Section 4 – Fire and Explosion Data

Fire Extinguishing Media: Carbon Dioxide, Foam, Dry Chemical, Water Spray.
Special Fire Fighting Procedures: Recommend NIOSH approved self contained breathing apparatus.
Unusual Fire and Explosion Hazards: Decomposition and combustion products may be hazardous.



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TECHNICAL BULLETIN

U.V. PRINTING ON COROPLAST™ MATERIAL USING AUTOMATIC EQUIPMENT

The purpose of this bulletin is to provide insight on some of the issues that need to be addressed when performing four, five and six color U.V. printing utilizing full automatic equipment.

Some of the key factors to successful printing on Coroplast™ material are as follows:

- A.) A regular maintenance program that includes replacing U.V. bulbs on a regular basis. Cleaning all reflectors, air intake screens, exhaust fan blades, inspecting the shutter system for proper operation, etc. to ensure the heat exhaust system is operating properly.
- B.) Having an air make-up system that is large enough to supply plenty of air so the heat exhaust system will not be starved for air. This is very important.
- C.) The U.V. bulbs normally have three wattage settings: 150, 200, and 300 watts. The normal setting for Coroplast™ material would be 150 to 200 watts combined with a belt speed of 80 to 100 feet per minute. It is never recommended to use the 300 watt setting.
- D.) How hot does the U.V. bulb get? The bulb approaches the melting temperature of glass. Care must be taken never to touch a U.V. bulb even when turned off. The oils in your fingerprint can cause a hot spot on the bulb and cause it to crack when it heats up. Also, periodically the bulb should be rotated 180 degrees to minimize sagging in the middle. This can lead to sheet failure as the bulb can get too close to the middle of the sheet especially on the larger U.V. machines.
- E.) An adhesion promoter should always be used when printing on Coroplast™ material. Check with your ink supplier for the proper adhesion promoter for the ink you are using.
- F.) A catalyst should be used for all outdoor U.V. printing applications. Without it the ink will become soft in a moist atmosphere and will be easy to scratch off. Check with your ink supplier for the proper catalyst.
- G.) Although Coroplast™ does not endorse any ink brand, many printers have achieved good results using Sericol and Nazdar brand inks.
- H.) For most U.V. ink applications, 380 to 390 mesh screen should work well. For metallic inks, a 330 to 350 mesh screen will probably be needed.
- I.) Metallic U.V. inks will be much more difficult to print successfully on Coroplast™ material due to several factors. In order for U.V. inks to get good adhesion to Coroplast™ material, the U.V. rays emitted from the U.V. bulb must penetrate through the ink to the Coroplast™ substrate and reflect back. The metal in the ink has a tendency to reflect the U.V. rays before they reach the substrate resulting in poor adhesion. Also, too much metallic material in the ink will result in the rays being blocked before reaching the substrate material due to the fact that the metal in the ink is not translucent and will not allow the rays to pass through. This also can

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cause excessive heat retention in the inks which can lead to material collapse and failure. Lastly, if you must use a metallic in the ink, use a paste form metallic instead of a dry metallic. This will aid in getting better dispersion of the metallic when mixing resulting in less clumping of the material which will lead to adhesion and coverage problems.

- J.) Always pull the squeegee the direction of the flutes whenever possible. Pulling across the flutes on a multi color automatic printing machine will dramatically increase the possibility of skin collapse between the flutes. This occurs because as the material is heated by the U.V. light it softens. If the squeegee is traveling with the flutes, it will be supported by all the flutes decreasing the likelihood of skin collapse.
- K.) Always set squeegee pressure as light as possible to avoid crushing the material.
- L.) Never stretch the screen too tight and allow plenty of clearance from the print area to the screen frame to ensure complete ink coverage. A good rule of thumb is a least 4 to 6 inches clearance on all sides. More on very large screens.
- M.) When using fully automatic multi color printing machines it is very important that the bulb cooling system is in optimum operating condition. The exhaust duct work must be properly sized, there must be no air restrictions and all components of the machine must be working properly to keep the Coroplast™ material from overheating and failing during the multi printing process. Please remember, that unlike on a single station printer, the material does not have time to cool down before it is printed and run through the heated lights again and again.
- N.) Avoid handling the Coroplast™ sheet immediately after printing. It will be in a softened state due to the heat generated during the printing process. This can lead to skin collapse and failure of the sheet.
- O.) Your ink supplier and machine manufacturer should be your best sources of information if you encounter difficulties.
- P.) Take care in choosing the correct material when U.V. printing. Select a sheet with a thick enough skin to withstand the extreme heat generated during the automated U.V. printing process. Also avoid darker colors in the sheet or the ink when possible as they will have a tendency to retain heat and could lead to sheet failure.

In this process as in most processes, the real key to success is highly trained, competent production people well versed on all the different aspects of automated U.V. printing, a comprehensive maintenance program, support from top management and ink suppliers that understand the process and supply the correct ink products for each varied application.

This is intended to be used as a reference only and in no way does it reflect all the issues that need to be addressed when printing on Coroplast™ materials.



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TECHNICAL BULLETIN

GENERAL PROPERTIES OF COROPLAST™/PLASTIC SHEETS

The name Coroplast applies to a wide range of extruded twinwall plastic sheet products based on a high impact polypropylene copolymer.

Coroplast is a high-quality polypropylene twinwall profile sheet formulated specifically for use in the screen printing, display and packaging markets.

Coroplast uses a copolymer resin in order to increase impact and low temperature performance.

At regular temperatures most oils, solvents and water have no effect, allowing it to perform under adverse weather conditions or as a product component exposed to harsh chemicals.

All Coroplast twinwall profile sheets can be modified with additives, which are melt-blended into the sheet to meet the specific needs of the customer. Needs that require additives include, ultra violet protection, anti-static, flame retardant, and color.

Coroplast products are offered in a wide range of standard colors and custom colors upon request.

GENERAL SPECIFICATIONS OF POLYPROPYLENE CO-POLYMER RESIN

Density, g/cc	90
Notched Izod Impact (FT-lbs /in.) ASTM-D256-A @ 70°	3.0
Tensile Strength at Yield (psi units) ASTM-D638	4000
Elongation at yield (%)	10
Deflection Temp. °F 66 psi ASTM-D648	194
Water Absorption-24 hrs, % ASTM-D570	0.02
Falling Weight Impact Strength @ -29°C (Ft. lbs.)	23
Coefficient of Linear Thermal Expansion -30°C to 0°C	12
0°C to 30°C	14
(MM/MM/C X 10 ⁻⁵) ASTM D696 30°C to 60°C	21
Normal temperature performance range	-17°F to 160°F
Melting point	162°C, 324°F

All information herein has been supplied by resin manufacturers. Coroplast provides this data as a service and makes no warranty of information beyond our control.



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GENERAL SPECIFICATIONS – EXPLANATION OF TERMS

1. **DENSITY, g/cc, ASTM-D782A:** This test determines the material weight in grams per cubic centimeter, which means 1 cubic centimeter of our polypropylene resin would have an average weight of .9 grams.
2. **NOTCHED IZOD IMPACT, FT-lbs./in., ASTM-D256-A:** This test determines the force used to break a sample of our polypropylene using a pendulum type hammer which is dropped from a standardized distance. A notch is milled into the sample to concentrate stress to that point which promotes a brittle fracture. The tests are reported in terms of energy absorbed per unit of yield or break.
3. **TENSILE STRENGTH AT YIELD, lbs./sq.in., ASTM-D638:** This test determines force taken to break/tear a polypropylene sample at a speed rate of 2 inches/minute and percentage of elongation at time of yield or break. It took 4000 lbs/square inch of force with 10% elongation at time of yield or break.
4. **DEFLECTION TEMPERATURE, in Degrees, ATSM-D648:** This test determines at what temperature a polypropylene sample exhibits deformation with a specified force applied to the sample bridged across a test apparatus. The test uses a 66 psi load and a 264 psi load and determines deflection temperature at which point that the sample deforms .010 inch.
5. **WATER ABSORPTION, % IN 24 HRS, ASTM-D570:** This test determines the relative rate of absorption of water by plastics when submersed for a 24 hour period. Samples are preconditioned (dried) before the test. The moisture content is very intimately related to such properties as electrical insulation resistance, dielectric losses, mechanical strength, appearance and dimensions.
6. **COEFFICIENT OF LINEAR THERMAL EXPANSION, 10^{-5} in./in./°F, ASTM-D696:** This test measures the change in length of a specimen under controlled conditions within a specified range of temperatures. The temperature ranges given were used and a calculation done to determine the coefficient linear expansion by multiplying the coefficient time 10^{-5} , times the length of the sample (in.), times the difference in temperature change in Celsius. **Example: A sample 144" long @ 54°F differential would be calculated as follows: Coefficient = 6.9, thus; $(10^{-5} \text{ in./in./degree F}) = (6.9 \times 10^{-5} \times 144" \times 54^\circ \text{F}) = .000069 \times 144" \times 54^\circ \text{F} = .5365"/144"/54^\circ \text{F}$, thus a sheet will expand approximately 1/2" with 54 degree F range, (32° to 86° F).**

IMPORTANT NOTE: This Technical Bulletin supercedes all previous issues. All information contained herein are based on sources considered to be dependable, and is accurate and reliable to the best of our knowledge.

If there are any questions concerning this Technical Bulletin, please contact:

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GENERAL PRODUCT TOLERANCES OF COROPLAST™ PLASTIC SHEETS

	SHEET	COLOR	SPEC	TOLERANCE
Gauge/millimeters	2mm	all	2mm	plus or minus .15mm
Density grams/sq mtr		all	450	plus or minus 5%
Density lbs/1000 sq ft		all	92	plus or minus 5%
Skin thickness		all	.0065	plus or minus .0015"
Flute thickness		all	.0065	plus or minus .0015"
Dyne level/cm		all	46 min	46 min
Gauge/millimeters	3mm	all	3mm	plus or minus .15mm
Density grams/sq mtr		all	600	plus or minus 5%
Density lbs/1000 sq ft		all	116	plus or minus 5%
Skin thickness		all	.008	plus or minus .0020"
Flute thickness		all	.008	plus or minus .0020"
Dyne level/cm		all	46 min	46 min
Gauge/millimeters	4mm	all	4mm	plus or minus .15mm
Density grams/sq mtr		nat. & wht.	775	plus or minus 5%
Density lbs/1000 sq ft		nat. & wht.	150	plus or minus 5%
Density grams/sq mtr		colors	700	plus or minus 5%
Density lbs/1000 sq ft		colors	143	plus or minus 5%
Skin thickness		all	.009	plus or minus .0020"
Flute thickness		all	.009	plus or minus .0020"
Dyne level/cm		all	46 min	46 min
Gauge/millimeters	5mm	all	5mm	plus or minus .15mm
Density grams/sq mtr		all	1000	plus or minus 5%
Density lbs/1000 sq ft		all	204	plus or minus 5%
Skin thickness		all	.013	plus or minus .0020"
Flute thickness		all	.013	plus or minus .0020"
Dyne level/cm		all	46 min	46 min
Gauge/millimeters	6mm	all	6mm	plus or minus .15mm
Density grams/sq mtr		all	1400	plus or minus 5%
Density lbs/1000 sq ft		all	286	plus or minus 5%
Skin thickness		all	.018	plus or minus .0025"
Flute thickness		all	.018	plus or minus .0025"
Dyne level/cm		all	46 min	46 min
Gauge/millimeters	7mm	all	7mm	plus or minus .15mm
Density grams/sq mtr		all	1700	plus or minus 5%
Density lbs/1000 sq ft		all	347	plus or minus 5%
Skin thickness		all	.024	plus or minus .007"
Flute thickness		all	.023	plus or minus .007"
Dyne level/cm		all	46 min	46 min
Gauge/millimeters	8mm	all	8mm	plus or minus .15mm
Density grams/sq mtr		all	1800	plus or minus 5%
Density lbs/1000 sq ft		all	367	plus or minus 5%
Skin thickness		all	.030	plus or minus .008"
Flute thickness		all	.029	plus or minus .008"
Dyne level/cm		all	46 min	46 min
Gauge/millimeters	10mm	all	10mm	plus or minus .15mm
Density grams/sq mtr		all	2000	plus or minus 5%
Density lbs/1000 sq ft		all	408	plus or minus 5%
Skin thickness		all	.034	plus or minus .008"
Flute thickness		all	.025	plus or minus .008"
Dyne level/cm		all	46 min	46 min

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	SHEET	COLOR	SPEC	TOLERANCE
Gauge/millimeters	10mm	all	10mm	plus or minus .15mm
Density grams/sq mtr		all	2400	plus or minus 5%
Density lbs/1000 sq ft		all	490	plus or minus 5%
Skin thickness		all	.036	plus or minus .008"
Flute thickness		all	.025	plus or minus .008"
Dync level/cm		all	46 min	46 min

PROPERTY	TOLERANCE
WIDTH	
From Extruder (Off-Line) 2mm-6mm	plus or minus 1/8"
8mm-10mm	minus 1/8" plus 1/4"
From Slitter (Cut Square) 2mm-6mm	plus or minus 1/8"
8mm-10mm	minus 1/8" plus 1/4"
From Die Cutter	plus or minus 1/8"
- Under 72"	plus or minus 1/8"
- Over 72"	plus or minus 1/8"
8mm-10mm	minus 1/8" plus 1/4"
LENGTH	
From Extruder	-0", +3/4"
- Under 36"	-0", +1-1/8"
- Under 66"	-0", +1-1/2"
- Under 96"	-0", +2"
- Over 96"	-0", +1/8"
From Slitter	- All Sizes
From Die Cutter	plus or minus 1/8"
- Under 36"	plus or minus 3/16"
- Under 66"	plus or minus 1/4"
- Under 100"	plus or minus 3/8"
- Over 100"	
SQUARENESS: The difference in length between the corner to corner diagonal measurement.	
From Extruder	- Under 60"
- Over 60"	3/8" Max.
From Slitter	- Under 60"
- Under 72"	1/8" Max.
- Over 72"	1/4" Max.
From Die Cutter	- Under 72"
- Over 72"	5/16" Max.
WARP/BOW: Maximum height above a flat surface of any portion of a sheet.	
- Under 96"	1/4" Max.
- Over 96"	1.0" Max.
- 70" x 70" or Larger	2.0" Max.
STRAIGHTNESS: Maximum distance measured between the edge of a sheet of Coroplast™ and a straight edge when the two corners of the sheet touch the straight edge.	
- Under 98"	1/8" Max.
- Over 98"	3/16" Max.

Notice: All tolerances are subject to change without notice.

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