



ForWard Solid Surface
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FORWARD SOLID SURFACE TECHNICAL SPECIFICATIONS

ACRYLIC SHEET MATERIAL COMPOSITION: SOLID SURFACES SHEETS

- Ingredient: Acrylic Polymer
- Ingredient Sequence Number: 01
- Percent: 40 – 45
- CAS Number: 9011 - 14 - 17
- Ingredient: Hydrated Alumina, Aluminum Hydroxide, Aluminum Trihydroxide
- Ingredient Sequence Number: 02
- Percent: 55 – 60
- NIOSH (RTECS) Number: BD094000
- CAS Number: 21645 - 51 - 2

COLOR MATCHES STANDARD: LESS THAN OR EQUAL TO 1.0 DELTA E.

For Particulated patterns: Particulated patterns are a function of pattern and no overall qualitative number can be used thus acceptability is subjective and dependent upon pattern:

- Ripples (another visual defect from sanding) None (0) (Ripples on darker color can be found out from low angle 22.5°, while light color only can be felt by light touching the sheet with hand).
- Dirt and Contamination None (0).
- Particle Homogeneous, no banding, clumping or voids in distribution.

ACRYLIC SHEET DIMENSIONS

THICKNESS INCH (mm)	WIDTH INCH (mm)	LENGTH INCH (mm)	WEIGHT LBS (kg)
1/2" (12 mm)	30" (760 mm)	145" (3,680 mm)	116.4 lbs (52.8 kg)
1/4" (6.35 mm)	30" (760 mm)	145" (3,680 mm)	116.4 lbs (52.8 kg)

PERFORMANCE PROPERTIES: SOLID SURFACES SHEETS

PROPERTIES	TYPICAL RESULTS	TEST PROCEDURE
Tensile Strength	6,000 psi	ASTM D 638
Tensile Modulus	600,000 psi	ASTM D 638
Flexural Strength	10,000 psi	ASTM D 790
Flexural Modulus	1,000,000 psi	ASTM D 790
Elongation	0.5%	ASTM D 638
Hardness	92 Rockwell "M" Scale 65 Barcol Impressor	ASTM D 785 ASTM D 2583
Thermal Expansion	2.0 x 10 ⁻⁵ in/in F°	ASTM D 696
Gloss (60 Gardner)	Between 5-20	NEMA LD-3
Color Stability	No Change – 200 hrs	NEMA LD-3
Stain Resistance	Pass Rating 41	ANSI Z 124
Abrasion Resistance	Pass	ANSI Z 124
Boiling Water Surface Resistance	No Effect	NEMA LD-3
High Temperature Resistance	No Effect	NEMA LD-3
IZOD Temperature Resistance (Notched)	0.28 ft. lbf/in	ASTM D 256
Ball Drop 1/2" Sheet	144" w/ 1/2 lb Ball No Failure	NEMA LD-3
Fungi and Bacterial Resistance	No Growth	ASTM G 21, G22
Solid Colors	1.72	ASTM D 792
Patterned Colors	1.69	
Water Absorption	0.04%, (1/2", 24hrs) 0.11%, (1/8", 24hrs)	ASTM D 570
Flammability	Class A / Class 1	UBC 8-1
Flame Spread	10	ASTM E 84
Smoke Density	10	ASTM E 84
Radiant Heat Resistance	No Visual Effect	NEMA LD-3
Toxicity	84.4g (Solid Color) 81.8g (Patterned Color)	Pittsburgh Test Protocol (LC50 Test)

TOXICITY TEST RESULT

TEST SAMPLE	LC ₅₀ VALUE
Solid Color	84.4 g
Patterned Color	81.8 g

Thermal decomposition of Solid Surfaces was measured at a temperature greater than 300°C (575°F), which is most likely in case of fire.

TOXICITY TEST RESULT (CONTINUED)

Toxicological Information

METHYL METHACRYLATE

TLV-TWA = 100 ppm = 410 mg/m³; ACGIH (1991-2)

LD50/oral/rat = 7872 mg/kg; RTECS, 47796

Methyl methacrylate can be present on the cutting tool face at a concentration exceeding the TLV of 100 ppm. However, it dissipates to very low levels with good ventilation.

EMISSION ANALYSIS FOR TVOC

– Chamber conditions for test period

PARAMETER	SYMBOL	UNITS	VALUE
Product Exposed Area	Ac	m ²	0.0316
Chamber Volume	Vc	m ³	0.067
Loading Ratio	Lc	m ² m ⁻³	0.47
Inlet Air Flow Rate	Q	m ³ m ⁻¹	0.067
Ventilation Rate	Ac	h ⁻¹	1.0
Temperature		°C	23.3
Relative Humidity		%	48.6

- Analytical methods: TVOC (Total Volatile Organic Compounds): quantified by GC/MS TIC method using toluene as calibration reference
- Test Result: emission test results for individual VOCs

SUBSTANCE	CAS	CHAMBER CONCENTRATION (µg m-3)	EMISSION FACTOR (µg m-2 h-1)
24 Hour Test Period			
Methyl Methacrylate	80-62-6	6.6	14.0

- Test Result: TVOC Chamber concentration and emission factors

TEST DURATION	CHAMBER CONCENTRATION (µg m-3)	EMISSION FACTOR (µg m-2 h-1)
24 Hours	LQ	Not Applicable

“LQ” indicates calculated value is below quantification based on concentration LOQ (Lower Limit of Quantification). TVOC is 20 µg m⁻³. Most standards and guidelines (Ex: EPA, OSHA, etc.) consider 200-500 µg m⁻³ TVOC an acceptable level in buildings. Levels higher than this may result in irritation to some occupants.

HANDLING AND STORAGE

- Handling: Solid surface sheets should be unloaded with a forklift or other lifting device capable of handling pallets safely
- Storage: Solid surface sheets should be evenly supported at temperatures between 59-73 F (15-23 in a dry and well-ventilated indoor area)