



# Advanced Honeycomb Technologies, Inc.

## ARAMID (NOMEX) HONEYCOMB ... AEROSPACE GRADE ... AHN 4120

### AHN4120 ARAMID FIBER/PHENOLIC COATED HONEYCOMB revised 5/28/92

AHN 4120 is an Aerospace Grade Nomex Honeycomb which exhibits high strength and toughness in a small cell, low density, non-metallic honeycomb. It is particularly noted for its corrosion resistance. This material is fire resistant and is typically used in transport aircraft construction where low O.S.U., smoke, and toxicity characteristics are a necessity. This material also exhibits good thermal insulation properties and also has good dielectric properties. This honeycomb is easily machined, formed, and shaped and well suited to adhesive bonding.

### PRODUCT DESIGNATION

A wide variety of cell sizes, web gauges, resin coating weights, and cell shapes are available. Strength characteristics are illustrated on the reverse side. The products are designated as follows:

AHN.....ADVANCED HONEYCOMB NOMEX

4120.....AEROSPACE GRADE

1/8.....CELL SIZE in inches

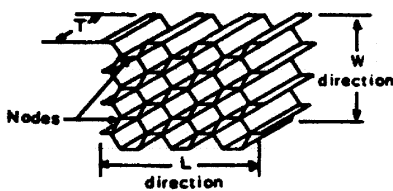
3.0.....DENSITY in pounds per cubic foot

(2).....THICKNESS OF ARAMID in mils

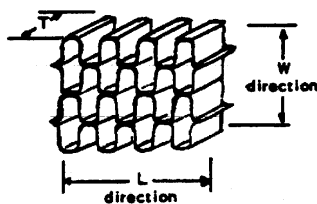
(this may not be specified)

O.X. ....INDICATES OVER-EXPANDED CELL SHAPE

(for curved surfaces, if omitted the cell shape is hexagonal)



**Hexagonal Cell**



**Over-Expanded Cell**

### SPECIFICATIONS

AHN 4120 honeycomb meets most commercial and military specifications. These include the strength requirements of BMS 8-124, DMS 1974, AMS 3711, and MIL-C-81986. Most of the specifications have similar requirements. Because of the large number of specifications and frequent revisions, we must be advised as to your requirements when we quote. If no specification is stated, we will certify to our Product Data sheet.

### AVAILABILITY

AHN 4120 is supplied in standard sheet sizes of 48”L by 96”W for hexagonal shaped cells and 38”L by 96”W for over-expanded shaped cells. The sheet thicknesses can be custom cut from .060 inches to 23 1/2 inches thick depending on the material cell size and density.

Special sheet sizes, both larger and smaller are available on a special order basis. Because of the special size, a minimum order may be required.

### SHEET SIZE TOLERANCES

Length (W) & Width (L) = -0 +4 inches

Thickness (T) = +/- .006 up to 2.00 inches

= .010 to 4.00 inches

= .060 above 4.00 inches

*Closer tolerances are possible and may carry a premium price.*



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### MECHANICAL PROPERTIES OF AHN 4120 AEROSPACE GRADE ARAMID NOMEX HONEYCOMB

| PRODUCT                | Compressive Strength |      |              |      | Plate Shear  |     |             |              |     |             |
|------------------------|----------------------|------|--------------|------|--------------|-----|-------------|--------------|-----|-------------|
| DESIGNATION            | Bare                 |      | Stabilized   |      | L Direction  |     |             | W Direction  |     |             |
| CELL DENSITY           | Strength psi         |      | Strength psi |      | Strength psi |     | Modulus ksi | Strength psi |     | Modulus ksi |
| Hexagonal Cell         | typ                  | min  | typ          | min  | typ          | min | typ         | typ          | min | typ         |
| AHN 4120-1/8-1.8       | 105                  | 70   | 115          | 80   | 90           | 66  | 3.8         | 50           | 36  | 1.8         |
| AHN 4120-1/8-3.0       | 300                  | 180  | 325          | 270  | 175          | 162 | 5.2         | 100          | 85  | 2.5         |
| AHN 4120-1/8-4.0       | 520                  | 330  | 575          | 470  | 255          | 225 | 7.0         | 140          | 112 | 3.6         |
| AHN 4120-1/8-5.0       | 700                  | 600  | 770          | 660  | 325          | 250 | 8.5         | 175          | 140 | 4.6         |
| AHN 4120-1/8-6.0       | 1050                 | 800  | 1125         | 825  | 385          | 260 | 10.0        | 200          | 135 | 4.7         |
| AHN 4120-1/8-8.0       | 1675                 | 1100 | 1830         | 1250 | 460          | 400 | 13.0        | 260          | 200 | 6.5         |
| AHN 4120-1/8-9.0       | 2000                 | 1400 | 2100         | 1600 | 515          | 425 | 15.0        | 300          | 240 | 8.0         |
| AHN 4120-3/16-1.5      | 90                   | 75   | 100          | 85   | 75           | 60  | 3.0         | 40           | 32  | 1.6         |
| AHN 4120-3/16-2.0      | 145                  | 90   | 160          | 105  | 110          | 72  | 4.3         | 60           | 40  | 2.0         |
| AHN 4120-3/16-3.0      | 300                  | 180  | 325          | 270  | 175          | 140 | 4.5         | 100          | 67  | 2.5         |
| AHN 4120-3/16-4.0      | 400                  | 320  | 540          | 470  | 245          | 225 | 7.0         | 140          | 112 | 3.8         |
| AHN 4120-3/16-6.0      | 700                  | 580  | 1020         | 650  | 420          | 360 | 13.0        | 225          | 200 | 4.5         |
| AHN 4120-1/4-1.5       | 80                   | 45   | 90           | 54   | 70           | 45  | 1.8         | 35           | 23  | 1.3         |
| AHN 4120-1/4-2.0       | 140                  | 80   | 155          | 105  | 105          | 72  | 2.2         | 50           | 38  | 1.8         |
| AHN 4120-1/4-3.0       | 200                  | 160  | 250          | 225  | 170          | 127 | 4.5         | 80           | 64  | 2.5         |
| AHN 4120-1/4-3.1       | 285                  | 180  | 310          | 240  | 185          | 135 | 5.6         | 90           | 75  | 3.0         |
| AHN 4120-1/4-4.0       | 440                  | 310  | 480          | 360  | 250          | 200 | 6.5         | 125          | 95  | 3.5         |
| AHN 4120-1/4-4.8       |                      | 320  |              | 450  |              | 225 | 7.3         |              | 140 | 4.0         |
| AHN 4120-3/8-1.5       | 85                   | 45   | 105          | 55   | 70           | 45  | 1.8         | 35           | 23  | 1.0         |
| AHN 4120-3/8-2.0       | 140                  | 80   | 155          | 105  | 90           | 72  | 2.2         | 55           | 36  | 1.3         |
| AHN 4120-3/8-3.0       | 290                  | 175  | 320          | 210  | 185          | 110 | 3.9         | 95           | 55  | 2.5         |
| Over-Expanded Cell     |                      |      |              |      |              |     |             |              |     |             |
| AHN 4120-3/16-1.8 OX   | 110                  | 70   | 120          | 75   | 65           | 45  | 1.5         | 60           | 42  | 2.2         |
| AHN 4120-3/16-3.0 OX   | 320                  | 230  | 350          | 280  | 115          | 90  | 2.2         | 135          | 90  | 4.5         |
| AHN 4120-3/16-4.0 OX   | 600                  | 500  | 650          | 550  | 130          | 115 | 4.3         | 150          | 130 | 8.0         |
| Aircraft Flooring Core |                      |      |              |      |              |     |             |              |     |             |
| AHN 4120-AFC-5.0       | 700                  | 550  | 745          | 600  | 355          | 275 | 8.5         | 205          | 150 | 4.5         |
| AHN 4120-AFC-9.0       | 1800                 | 1400 | 2050         | 1600 | 480          | 425 | 15.0        | 320          | 275 | 8.0         |

All tests are per MIL-STD-401B, core thickness of .500 (for core (T) of .270 increase shear strengths by 14%). Min indicates a specification minimum value. Typ indicates averages of typical production test results.

**FOR INDUSTRIAL USE ONLY** The above is made in lieu of all warranties, expressed, or implied: Seller's only obligation shall be to replace such quantity of this product which has proven to not substantially comply with the data presented in this bulletin. In the event of discovery of a non-conforming product, Seller shall not be liable for any commercial loss or damage, direct or consequential, arising out of the use of the inability to use the product. Before using, Buyer shall determine the suitability of the product for his intended purpose, and Buyer assumes all risk and liability whatsoever in connection therein. Statements relating to possible use of our product are not guarantees that such use is free of patent infringement or that they are approved for such use by any agency. The foregoing may not be changed except by an agreement signed by an officer of Seller.