

## Min-K® Molded Microporous Boards and Shapes

Datasheet Code US: 6-14-125

Updated: 02/2016

Molded Min-K boards and shapes offer the thermo-physical properties of Min-K insulation in easily handled boards and shapes.

Molded Min-K insulation is made in two standard types: 1302 and the High Purity TE series. These materials can also be in specified shapes, molded to close dimensional tolerances in sizes and thicknesses consistent with pressure and heat-molding techniques.

Molded Min-K insulation has been used successfully in manned spacecraft, aircraft, and other high-temperature applications where low thermal conductivity plus space and weight savings are a critical consideration. This includes steady-state and transient applications.

Min-K 1302 is a microporous material specifically designed to be molded into block and machined to specific customer designs.

Min-K TE 1400 is a fibrous component developed for improved material strength. While TE 1400 can be machined, it does not lend itself to direct molding of intricate shapes. It is particularly suited for many applications requiring high-purity, non-contaminating thermal insulation.

Min-K TE 1800 was developed for non-loadbearing applications and can be machined to shape. It is particularly suited for many applications requiring high-purity, non-contaminating thermal insulation.



### Features

- Low thermal conductivity
- Compression resistant
- Machined to customer specification
- Lightweight
- Organic free

### Applications

- Aerospace
- High temperature
- Instrumentation and analytical equipment

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### Standard Sizes

Molded Min-K insulation is manufactured in the following combinations:	
Block, in (cm)	12 x 12 (30 x 30)
Sheet, in (cm)	18 x 36 (45 x 90)
Thickness, in (cm)	<sup>3</sup> / <sub>8</sub> - 3 (0.94 - 7.5)

NOTE: Special sizes and thicknesses are available on request.

### Physical Data

 Nominal Density 20 pcf (320 kg/m<sup>3</sup>)

Physical Properties	Min-K 1302	Min-K TE 1400	Min-K TE 1800
Max. service temp. °F (°C)	1800 (982)	1400 (760)	1800 (982)
<b>Average transverse strength, psi minimum (kg/cm<sup>2</sup>)</b>			
Compressive strength, psi	55 (3.9)	60 (4.2)	50 (3.5)
5% compression	110	70	95
8% compression	190	125	155
<b>Linear shrinkage, % 4 hrs @ 1800°F (982°C)*</b>			
4 hrs @ 1800°F (982°C)*	0.5	0.5	0.5

### Thermal Conductivity

BTU•in./hr•ft <sup>2</sup> •°F	Mean Temp. °F (between hot surface and cold surface)						
	300	400	600	800	1000	1200	1600
(ASTM C-518)							
Min-K 1302	0.21	0.22	0.23	0.25	0.27	0.37	0.52
Min-K TE 1400	0.20	0.21	0.21	0.23	0.26	0.30	–
Min-K TE 1800	0.23	0.23	0.24	0.25	0.28	0.34	0.50

### Thermal Conductivity

W/m•K	Mean Temp. °C (between hot surface and cold surface)						
	149	204	316	427	538	649	871
(ASTM C-518)							
Min-K 1302	0.030	0.032	0.033	0.036	0.039	0.053	–
Min-K TE 1400	0.029	0.030	0.030	0.033	0.037	0.043	–
Min-K TE 1800	0.033	0.033	0.035	0.036	0.040	0.049	0.072

The values given herein are typical average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Therefore, the data contained herein should not be used for specification purposes. Check with your Morgan Advanced Materials office to obtain current information.