



**Model Builder**

- quartz.mph (root)
  - Global Definitions
  - Model 1 (mod1)
    - Definitions
    - Geometry 1
      - Rectangle 1 (r1)
      - Rectangle 7 (r7)
      - Rectangle 8 (r8)
      - Rectangle 9 (r9)
      - Rectangle 2 (r2)
      - Rectangle 3 (r3)
      - Rectangle 4 (r4)
      - Rectangle 5 (r5)
      - Rectangle 6 (r6)
      - Form Union (fir)
    - Materials
      - Al
      - Quartz
      - Piezoelectric Device
    - Mesh 1
    - Study 1
    - Results

**Settings** | **Model Library**

### Material

**Geometric Entity Selection**

Geometric entity level: Domain

Selection: Manual

1

**Override**

**Material Properties**

**Material Contents**

Property	Name	Value	Unit	P
Elasticity matrix (Ordering: xx, y cE			Pa	S
Density	rho	2651[kg/m	kg/m <sup>3</sup>	B
Coupling matrix	eES	{-0.19543	C/m <sup>2</sup>	S
Relative permittivity	epsilon_r	{4.4093, 4		S
Compliance matrix (Ordering: x) sE		{1.277e-0	1/Pa	S
Coupling matrix (Ordering: xx, y dET		{-2.3e-01	C/N	S
Relative permittivity	epsilon_r1	{4.52, 4.52		S
Loss factor for compliance matrix eta_sE		0	1	S
Loss factor for coupling matrix eta_dET		{0, 0, 0, 0,	1	S
Loss factor for electrical permittivity eta_epsilon_r		0	1	S

**Appearance**

**Graphics**

**COMSOL Error**

An unexpected error occurred.  
See the end of log file for details

Open Log File... OK

**Messages** | **Progress** | **Log**

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