



**RAYCHEM**

## FINITE ELEMENT ANALYSIS (FEA) INQUIRY FORM

### CONTACT INFORMATION

Name

Email

Company

Date

Phone

### PROJECT PARAMETERS

Objective of study

Ice formation rate

Project name

Maximum wind velocity

Project location

Climate (tropical /arctic/etc.)

Minimum ambient temperature

Maximum ambient temperature

Snowfall rate

Other applicable conditions if any

### DESIGN PARAMETERS

Maintain temperature

Normal/process/ flow operating temperatures

Minimum flow rate

Maximum flow rate

Maximum exposure temperature (Power off)

Flow inlet temperatures

Minimum allowable product temperature

Maximum allowable product temperature

### MODEL SPECIFICATIONS AND MATERIAL PROPERTIES

Model geometry and detailed dimensions

Provide associated drawings/sketches and description, such as piping/equipment isometric drawings, EHT isometric drawing, etc.

Provide calculation sheet if applicable, such as TCPro calculation, SlabHeat calculation, etc.

Material Thermal Properties with proper units for each material

Density Thermal conductivity Specific heat

Thermal conductivity                      Specific heat

Specific heat

## POWER SUPPLY DATA

Power output

## FLUID PROPERTIES HEAT-UP, MELT-OUT, OR COOL-DOWN DATA

Fluid name	Start temperature	Cool-down time limit
Water	20°C	10 min
Oil	40°C	15 min
Alcohol	25°C	5 min
Mercury	30°C	20 min
Glycerol	35°C	12 min
Acetic acid	22°C	8 min
Ammonia	15°C	3 min
Hydrogen	0°C	1 min
Helium	-269°C	0.5 min
Neon	-246°C	0.2 min
Argon	-186°C	0.1 min
Krypton	-153°C	0.05 min
Xenon	-109°C	0.02 min
Sulfur	115°C	25 min
Phosphorus	44°C	18 min
Carbon	3500°C	30 min
Silicon	1414°C	22 min
Germanium	1212°C	16 min
Antimony	938°C	14 min
Lead	327°C	10 min
Gold	1063°C	20 min
Silver	961°C	18 min
Copper	1085°C	22 min
Aluminum	933°C	16 min
Iron	1538°C	25 min
Nickel	1455°C	22 min
Chromium	1907°C	30 min
Manganese	1246°C	18 min
Zinc	419.5°C	10 min
Aluminum	933°C	16 min
Steel	1500°C	25 min
Concrete	1500°C	30 min
Brick	1000°C	20 min
Wood	500°C	15 min
Plastic	300°C	10 min
Glass	1000°C	20 min
Quartz	1650°C	25 min
Sapphire	2039°C	30 min
Diamond	3550°C	35 min

Start temperature	Cool-down time limit
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Cool-down time  
limit

Specific heat                      Heat-up time                      Density vapor

Heat-up time required	Density vapor
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Density vapor

Density solid                      Density liquid                      Boiling point

Density liquid	Boiling point

Boiling point

Heat of fusion	Heat of
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Heat of vaporization

Melting point	Final temperature
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Final temperature

Flowing fluid?

Yes No

If yes, define parameters for dynamic analysis (flow rate, viscosity of the fluid and units)

## ADDITIONAL INFORMATION

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