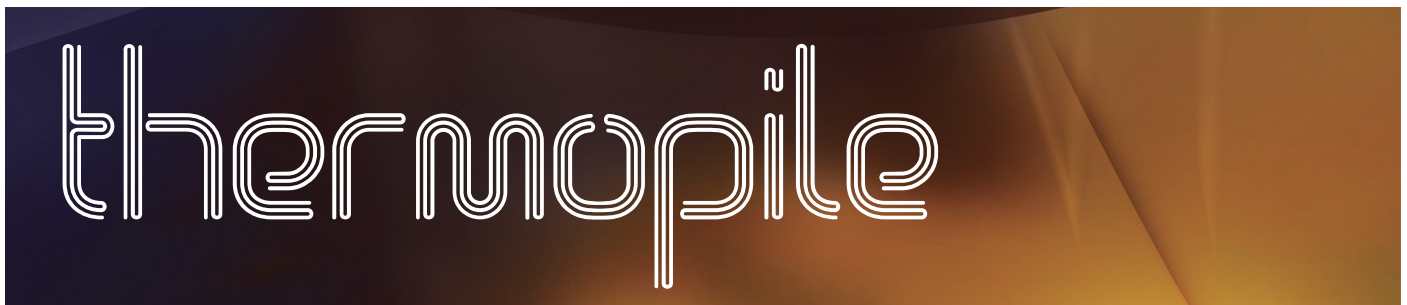


Thermocouple Alloys - Thermopile applications



Aperam Alloys Rescal has developed specific heats for thermopile applications. Particularity of these alloys is to have the capacity to develop the highest EMF never developed until now by Seebeck's effect.

Alloy		Chemical analysis %			
		Ni	Cr	Cu	Others
Positive leg	REPS	90	8	-	Si+
Negative leg	RENS	44	-	55	Si+
	RENM	44	-	55	Mn+
	RENN	44	-	55	Fe+

1. EMF developed

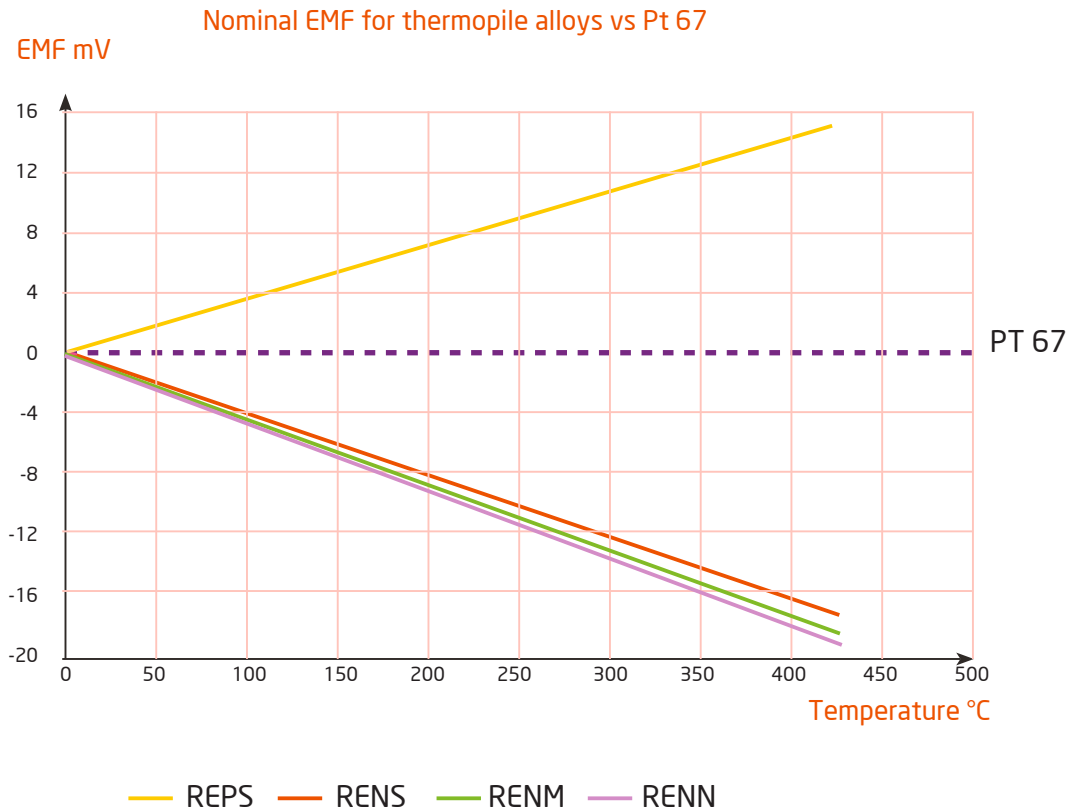
EMF developed by these alloys are not referenced by ASTM or other norm. Table below gives EMF values for a specific temperature.

For example, at 427 °C the EMF of each thermocouple is:

- Resistohm EPS - 14.779 mV
- Resistohm ENN- 19.602 mV
- Resistohm ENM- 18.914 mV
- Resistohm ENS - 17.526 mV

September 2018 - The data enclosed in this document are only given as indicative values and correspond to our standard products. Different specific requirements are subject to discussion and formal approval by Aperam Alloys Rescal. For further information or special request, please contact us.

2. Thermopile alloys vs Platinum



3. Typical application

Those alloys are used when the highest EMF are required, which will, then, make easier piloting of electronic measurement devices. These systems are particularly required in equipment leading where safety is a priority (sensor for gas flame, safety valve...).

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