

Variance Components Estimation Procedure

Type 1 Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	Expected Mean Square
Material	2	10684	5341.861111	$\text{Var}(\text{Error}) + 4 \text{Var}(\text{Material*Temperature}) + 12 \text{Var}(\text{Material})$
Temperature	2	39119	19559	$\text{Var}(\text{Error}) + 4 \text{Var}(\text{Material*Temperature}) + 12 \text{Var}(\text{Temperature})$
Material*Temperature	4	9613.777778	2403.444444	$\text{Var}(\text{Error}) + 4 \text{Var}(\text{Material*Temperature})$
Error	27	18231	675.212963	$\text{Var}(\text{Error})$
Corrected Total	35	77647		

Type 1 Estimates	
Variance Component	Estimate
Var(Material)	244.86806
Var(Temperature)	1429.7
Var(Material*Temperature)	432.05787
Var(Error)	675.21296