# #1242: Radioss - Calculating a, b and n value for Material Law2

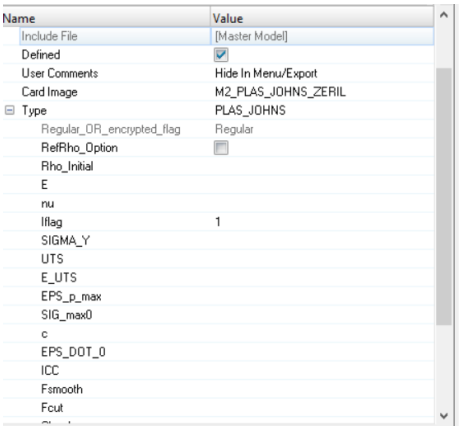
**Product:** Radioss
**Product Version**: Radioss 12.0 or above

## Topic Objective

For the material law 2, Johnson-Cook material plastic yield stress (a), Plastic hardening parameter (b) and plastic hardening exponent (n) values has to be calculated. A simplified approach is available for calculating these parameters.

## Topic Details

Keep input type flag (Iflag) option to 1 in the material card. A simplified input of Yield-Stress, Ultimate-Stress (UTS in engineering stress), and strain at UTS (which is between 0.5 – 0.9 of failure strain) will be recalculate to the Johnson-Cook values a,b,n internally. The Starter output file has the values.




```
JOHNSON COOK MODEL :
YIELD STRESS  . . . . . .=  1442.000000000
ULTIMATE STRESS (UTS) . . . . . .=  2060.000000000
STRAIN AT UTS (Ag). . . . . .= 0.1000000000000
YIELD COEFFICIENT A . . . . . .=  1442.000000000
YIELD COEFFICIENT B . . . . . .=  1525.800879931
YIELD COEFFICIENT N . . . . . .= 0.2621029944619
EPS-MAX . . . . . .= 1.00000000000000E+30
SIG-MAX . . . . . .= 1.00000000000000E+30
ISO-KINEMATIC HARDENING FACTOR. . . . .=  0.000000000000
```

© 2016 Altair, Proprietary and Confidential 