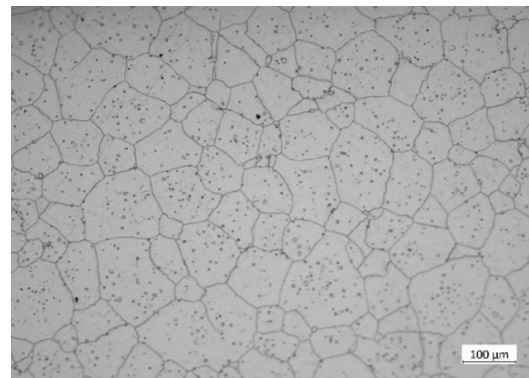
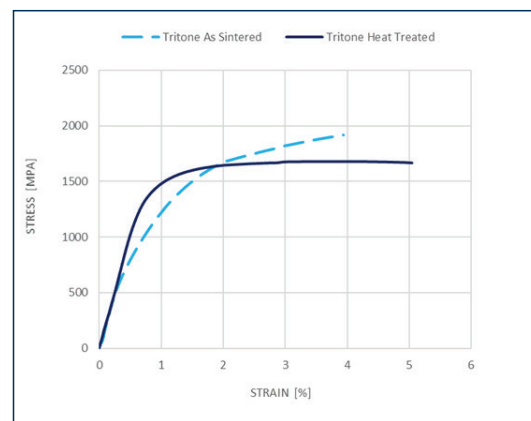


# Material datasheet

## H13 Tool Steel

### Composition – According to ASTM A681

| Composition | Amount     |
|-------------|------------|
| Chromium    | 4.75-5.5%  |
| Molybdenum  | 1.1-1.75%  |
| Vanadium    | 0.8-1.2%   |
| Silicon     | 0.8-1.25%  |
| Carbon      | 0.32-0.45% |
| Manganese   | 0.2-0.6%   |
| Phosphorous | 0.03% max  |
| Sulfur      | 0.03% max  |
| Iron        | Bal.       |



### Typical Mechanical Properties

|                           | Standard  | Tritone as sintered | Tritone heat treated* | Wrought Heat treated* |
|---------------------------|-----------|---------------------|-----------------------|-----------------------|
| Ultimate Tensile Strength | ASTM E8   | 1921 MPa            | 1686 MPa              | 1580 MPa              |
| 0.2% Yield Strength       | ASTM E8   | 923 MPa             | 1341 MPa              | 1360 MPa              |
| Elongation at Break       | ASTM E8   | 3.9%                | 4.4%                  | 14%                   |
| Hardness                  | ASTM E18  | 49.5 HRC            | 50 HRC                | 46 HRC                |
| Relative density          | ASTM B962 | 95%                 | 95%                   | 100%                  |

\* Properties of as sintered material are affected by the cooling rate of the sintering process.

\* Heat treated according to ASTM A681: Standard Specification for Tools Steel Alloy.