

L605

DESCRIPTION

L605, also known as UNS R30605, AMS 5537, STELLITE 25, and UDIMET L605, is a cobalt-chromium alloy known for its exceptional hardness and high-temperature strength. It is used in demanding applications requiring superior wear resistance and resistance to oxidation.

TYPICAL PHYSICAL PROPERTIES

| | | |
|------------------------|-----------------------------|-------------|
| Density | lb/in ³ | 0.330 |
| | g/cm ³ | 9.14 |
| Melting Range | °F | 2375-2425 |
| | °C | 1300-1330 |
| Specific Heat | Btu/lb °F | 0.097 at 70 |
| | J/kg °C | 405 at 21 |
| Thermal conductivity | Btu in/ft ² h °F | 84 |
| Electrical Resistivity | ohm circ mil/ft | 613 |
| | microhm-cm | 102.0 |

Chemical Composition (% by weight)

| Elements | Min | Max |
|----------|-------|-------|
| C | 0.10 | 0.15 |
| Cr | 20.00 | - |
| W | 15.00 | - |
| Ni | 10 | - |
| Fe | - | 3.00 |
| Mn | 1.50 | - |
| S | - | 0.030 |
| C | 0.1 | - |
| P | - | 0.040 |
| Si | - | 0.40 |

APPLICATIONS

L605 is extensively used in aerospace applications for components such as turbine blades, nozzles, and other parts exposed to high temperatures and wear.

TYPICAL MECHANICAL PROPERTIES

| | | |
|------------------|-----|---------|
| Tensile Strength | MPa | 861.800 |
| Yield Strength | MPa | 310-593 |
| Elongation | | 25% |
| Hardness | BHN | 230-302 |

AVERAGE LINEAR COEFFICIENT OF THERMAL EXPANSION $\mu\text{m}/\text{m}\cdot\text{°C}$

| Temperature °F / °C | Coefficient of Thermal Expansion (in/in x 10 ⁻⁶) |
|------------------------|---|
| 200-93 | 7.24 |
| 300-143 | 7.36 |
| 400-204 | 7.43 |
| 500-260 | 7.55 |
| 600-316 | 7.66 |
| 700-371 | 7.78 |
| 800-427 | 7.89 |
| 900-482 | 7.99 |
| 1000-538 | 8.06 |
| 1100-593 | 8.11 |
| 1200-649 | 8.28 |
| 1300-704 | 8.5 |
| 1400-760 | 8.68 |
| 1500-816 | 8.83 |
| 1600-871 | 8.94 |

Special Purpose Alloys & Metals From Stock

Controlled Expansion | Glass Sealing

Kovar ASTM F 15 Alloy

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

Alloy 32/42/48/49

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

VIM VAR CORE IRON

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

SUPRA 510 (Ni50FeCr10)

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

ALUMINIUM HARD ALLOYS

7475 AA7475/7449 AA7449

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

7075 UNS A97075

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

7050 AMS 4050

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

7175 UNS A97075

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

2014 AMS 4121

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

2024 UNS A92024

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

2618 UNS A92618

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

2017 AMS 4037

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

2011 UNS A92011

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

TITANIUM ALLOYS

TITANIUM TI-6AL-4V GRADE 5

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

TITANIUM GRADE 2

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

TITANIUM 6-2-4-6

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

TITANIUM BT20

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

NICKEL BASED ALLOYS

WASPALLOY

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

INCONEL X750

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

INCONEL 945

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

INCONEL 945X

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

NIMONIC C263

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

NIMONIC 75

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

INCONEL 909

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

INCONEL 718

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

INCONEL 660

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

PH ALLOYS

17-7PH

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

15-5PH

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

17-4PH

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

HIGH TEMP ALLOYS

HAYNES 188

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

L605

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

MP35N

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

MP159

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

RENE41

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

HAYNES 230

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

ELGILOY

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

HAYNES 242

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

JUST-IN-TIME DELIVERY: All of our standard stock items can be delivery as per commitment. All materials are certified with shipment. For special orders and non-stock materials, contact our sales team for our competitive pricing and delivery.