



DIES AND MOULDS

Materials for Dies and Moulds

Injection moulders and blow moulders benefit from high conductivity alloys by achieving faster cycle times and better part quality. There are certain properties of mould materials that enable these efficiencies to be realized. Using copper alloy moulds allows part manufacturers to improve their production rate, reduce capital investment and improve quality.

Higher conductivity moulds provide more uniform cooling than steel tools, resulting in better dimensional control, decreased warpage and part strength improvements.

Applications

- | Injection Mould Cores and Core pins |
- | Injection Mould Cavity inserts |
- | Blow Mould Cavities |
- | Injection Mould Slides |
- | Chill Plates |
- | Blow Mould neck Pinch offs |
- | Thermo-forming Cavities |
- | Lifters |
- | Wear plates |
- | Ejectors |
- | Sleeves |

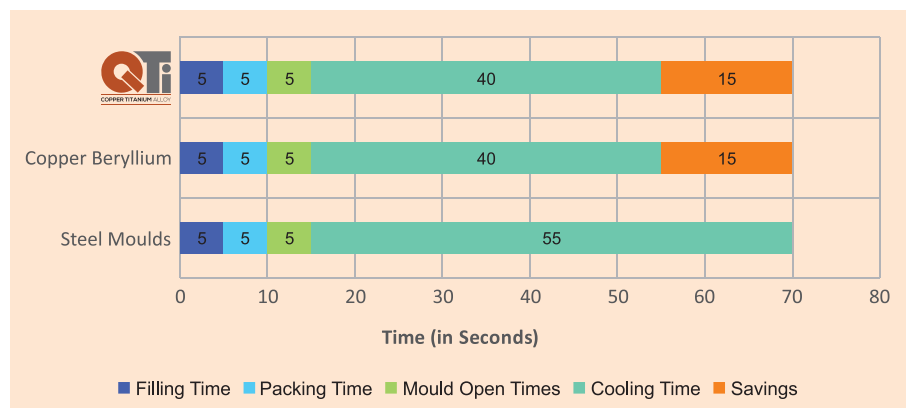
Comparison of Alloys for Dies and Moulds

Description	Thermal Conductivity (W/mK)	Hardness (BHN)	Tensile Strength MPa
420 Stainless Steel	25	514	1380
H-13 Tool Steel	25	321	1400
P-20 Tool Steel	38	225	1000
6061 T6 Aluminium	166.5	110	275
Beryllium Copper – High Hardness	103	338	1250
Beryllium Copper – High Conductivity	223	216	750
Copper Titanium – High Hardness	100	400	1200
Copper Titanium – High Conductivity	220	250	800

Advantages of Copper Titanium Alloys

- | Reduced Cycle Time = Enhanced Productivity
- | High Strength and Hardness
- | Reduced Dimensional Variation
- | Improved control on warpage
- | High Annealing Temperature
- | Good Thermal Conductivity
- | Reduced Stresses in the Mould Parts
- | Easily Machine-able
- | Superior Corrosion resistant
- | Beryllium Free

Comparative of Cooling Times with different Mould Materials



WARNING!

INHALING BERYLLIUM DUST OR FUMES MAY CAUSE SERIOUS, CHRONIC LUNG DISEASE AMONG EXPOSED WORKERS. THIS LUNG DISEASE CAN BE FATAL.

DISADVANTAGES : Copper Beryllium (CuBe)

- Needs precautions while machining and handling
- Creates an inhalation hazards known as Chronic Beryllium Disease (CBD)
- CBD may occur among people who are exposed to the dust or fumes from beryllium metal, metal oxides, alloys, ceramics or salts
- Latest research shows skin can be a route to CBD
- Expensive material
- High cost of compliance to safety standards



COPPER TITANIUM

TECHNOLOGY DEVELOPED BY DRDO



Beryllium Free



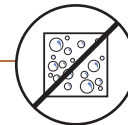
Non-Sparking



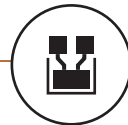
Non Magnetic



High Strength



Corrosion Resistant



Good Conductivity

ABOUT US

Pahwa MetalTech Pvt. Ltd. was incorporated in 2014 by experienced techno-managerial entrepreneurs with over 40 years of experience in engineering with a vision to become a leader in manufacturing high strength copper alloys.

Pahwa MetalTech has obtained an exclusive licence from DRDO (Defence Research & Development Organization) of a technology to manufacture high strength Copper Titanium alloys.

OTHER PRODUCTS



Non-Sparking Hand Tools



Resistance Welding Products



MIG Welding Contact Tips



Plunger Tips



Dies and Moulds



Valve Seats



Electrical Contacts



Special Applications



Manufacturing Unit:

Plot No. A-30/1/1, Phase-1, M.I D.C.,
Chakan, Tal : Khed, Dist : Pune 410501

Ph: +91-2135 690049

info@pahwametaltech.co.in

Connect with us:

