

Four Hole Cupel Rack Ashing Dish Tray For Fire Assay And Laboratory Furnaces

Item Number: KT-MJ



Introduction

Engineered for demanding fire assay and metallurgical testing, this premium four hole cupel rack ensures secure vessel alignment, exceptional oxidation resistance, and uniform thermal distribution during high temperature furnace cycles, maximizing laboratory productivity while delivering reliable, repeatable ashing results.

[Learn More](#)

Application	Description	Key Benefit
Fire Assay Precious Metal Cupellation	Holding bone ash or magnesia cupels during the selective oxidation of lead buttons containing gold and silver inside assay furnaces.	Eliminates individual cupel handling, maintains uniform chamber airflow, and protects furnace refractory hearths from lead oxide leakage.
Mining Core and Geological Ore Assay	Processing multi-sample batches of pulverized drill core and mineral concentrates during exploration and grade-control testing.	Accelerates batch throughput by 400% compared to single-sample loading while ensuring identical thermal exposure across all four specimens.
Gravimetric Coal and Coke Proximate Ashing	Transporting shallow porcelain or silica ashing dishes into muffle furnaces for residual volatile combustion and mineral matter quantification.	Open-frame cavity geometry facilitates unrestricted oxygen diffusion, ensuring complete and rapid organic carbon burnout.
Precious Metal Refining and Bullion Verification	Analyzing high-purity scrap, dore bars, and finished gold jewelry alloys via classic lead collection and cupellation methodologies.	Ensures coplanar vessel orientation to prevent liquid metal bead migration and minimize sample loss during high-temperature liquidus phases.
Petrochemical and Polymer Residue Testing	Supporting refractory crucibles through slow-ramp calcination and high-temperature ignition of hydrocarbon polymers and petroleum coke.	Robust alloy stability prevents secondary sample contamination from metal flaking or catalytic surface reactions at extreme temperatures.

High-Temperature Ceramic Sintering Research	Serving as a multi-specimen setter plate for calcining advanced functional ceramics, battery solid electrolytes, and electronic powders.	Delivers uniform thermal conductivity across all four stations, reducing localized microstructural variation during thermal dwell periods.
---	--	--

Specification Parameter	Technical Detail
Product Item Number	KT-MJ
Vessel Capacity	4 Cupels / Ashing Dishes (2x2 Matrix or Linear Array)
Standard Cavity Diameter	45 mm (Compatible with 38 mm – 44 mm diameter vessels)
Cavity Depth / Recess	12 mm precision rim recess for anti-tip retention
Base Alloy Material	Heat-Resistant Grade 310S (Cr25Ni20) Stainless Steel / Inconel Option
Optional Ceramic Material	High-Purity Cordierite-Mullite Refractory (Thermal Shock Grade)
Continuous Operating Temperature	Up to 1150°C (Metallic Alloy) / Up to 1300°C (Refractory Ceramic)
Maximum Peak Temperature	1200°C (Metallic Alloy) / 1350°C (Refractory Ceramic)
Frame Construction Style	CNC laser-cut and precision-formed one-piece unibody with welded stiffeners

Specification Parameter	Technical Detail
Structural Plate Thickness	3.5 mm to 4.0 mm heavy-gauge load-bearing sheet
Tong Grip Clearance	18 mm vertical clearance flange on opposing handling sides
Atmosphere Void Ratio	>35% open surface area for bottom and lateral draft circulation
External Dimensions (L x W x H)	145 mm x 145 mm x 28 mm (Standard square configuration)
Surface Finish	Passivated mill finish with pre-oxidized anti-scaling conditioning
Resistance to Thermal Cycling	Rated for >500 full-temperature direct quench cycles to ambient air
Chemical Compatibility	Resistant to neutral fluxes, lead oxide vapors, and oxidizing furnace atmospheres