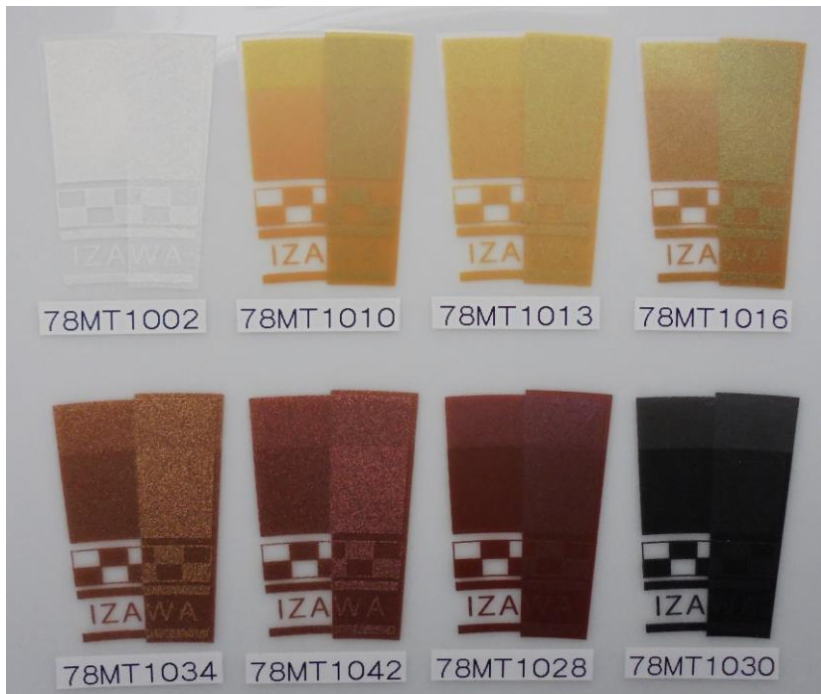# SELECTION 78M   lead-and cadmium-free inglaze metallic colors

1. General Information

Selection 78M series is lead-and cadmium-free, intermixable, intensive inglaze metallic colors for porcelain, bone china, earthen ware, vitreous china and enamel ware.

2. Firing Conditions

Type of ware	Metallic colors
Porcelain	1100 − 1200℃
Bone China	950 − 1050℃
Earthen ware	1100 − 1180℃
Vitreous China	1100 − 1180℃

Selection 78M metallic colors are suitable for fast firing of 60-120 minutes, cold-to-cold conditions. 78MT1002, 78MT1010, 78MT1013 and 78MT1016 show better results bellow 1180℃. 78MT1028, 78MT1030 are suitable for porcelain glaze and show smooth surface effect. 78MT1034 and 78MT1042 can stand over 1200℃.

78MT1002	White Silver	Can mix with Selection 78 colors
78MT1010	Orange Gold	Specially suitable for bone china glaze
78MT1013	Lemon Gold	Lemon gold tone
78MT1016	Orange Gold	Intensive orange gold
78MT1028	Red	Glossy appearance, not suitable for soft glaze
78MT1030	Black	Glossy appearance, not suitable for soft glaze
78MT1034	Copper	Can stand higher temperature
78MT1042	Red	Can stand higher temperature

3. Application

Selection 78M metallic colors are suitable for screen-transfer printing, direct printing, spraying, pad printing and hand painting.

4. Particle size and Mesh size

Selection 78M metallic colors are recommended to print 100-200 mesh (40-80T)
Two time printing, as thinker layer, show better and stable results against higher firing temperature and longer firing cycle.
78T1008 underlay flux is recommended to print by 300 mesh (120T)

5. Medium ratio

Selection 78M Color: Medium PM2	10: 14-16
78T1008 underlay flux: Medium PM2	10: 8-10

6. Mixability

Selection 78M metallic colors can be mixed with each other in any proportions. Mixing with other Selection 78 colors can be developed a wide range of metallic effect colors. Please note following recommendations.

Underlay flux: If 78T1008 underlay flux is printed before printing 78M colors, it helps to remaining metallic effect. Overprinting 78T1008 flux is not much effective than printing as underlay flux.

Mixing white silver: To obtain colored metallic, it is suitable to mix 78MT1002 silver with approximate 10-20% of Selection 78 colors.

Mixing flux: 78101 flux is recommended to mix with 78M metallic colors to lighten the colors.

7. Chemical durability

Chemical durability of Selection 78M metallic colors depend on type of ware, glaze, kiln, color deposit and firing conditions. Following results were tested by porcelain, fired at 1180 ℃, with 10 minutes of soaking time and 120 minutes of cold-to-cold firing conditions of gas kiln in production.

7.1 Residual lead and cadmium content

Selection 78M metallic colors contain less than 90 ppm residual lead and less than 40 ppm residual cadmium and are therefore in compliance with Californian Proposition 65, FDA, EU and Japanese requirements.

7.2 Lead and cadmium release

According to DI EN 1388-1-2 test, Selection 78M metallic colors show lead and cadmium releases are below AAS limits.

7.3 Acid resistance

According to DI EN 1388-1-2 test, Selection 78M metallic colors do not show visible attack after immersion in a 4% acetic acid solution for 24 hours at room temperature 22±2℃.

7.4 Alkali resistance

According to ASTM C556-88 test, Selection 78M metallic colors do not show visible attack up to 4 hours.

8. Safety Data Sheet (SDS)

Safety data sheet of all of Selection 78M metallic colors are available.

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