

# The Differences Of Absorption Spectra Of Jadeite Jewellery Of Type A, B And C

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Jadeite ranks first in all kinds of jade of high quality and is loved by people for its crystal-clearness, translucence, pureness, fine green colour and beauty. Because of the rareness of such high-grade natural Jadeite, treated products of middle to low grade of them, which are improved in colour and transparency by artificial methods, are sold in jade markets. So Jadeite jewellery is divided into three types: A, B and C in trade. Type A refers to natural Jadeite jewellery which has only been cut, ground, carved, waxed and polished. Type B refers to treated Jadeite which has been pickled and bleached by acid liquid and injected with colloid of epoxy resin or other high-molecular polymeric compound before they are processed to jewellery. Type C is also treated Jadeite which has been coloured by dye liquor before processed to Jewellery.

The differences of absorption spectra of type A, B and C are listed below.

	Type A	Type B	Type C
The absorption spectra of visibility	White position: absorption peak of 437 nm even and symmetric. Green position: absorption peaks at 437, 630, 660, 690 nm	The peak of 437 nm not symmetric as influenced by absorption value of 450nm. All of absorptional peak values appearing in type A turn weak and even disappear. Sometimes in green position appears wide symmetric slow peak of 450 nm	The variations of shape and value of 437 nm absorption peaks are the same as type B In green position appears 600 nm to 700 nm wide absorption band with two absorption peaks of 620, 680 nm
The absorption spectra of infrared light	Stronger absorption peaks at $2854\text{cm}^{-1}$ , $2926\text{cm}^{-1}$ , $2962\text{cm}^{-1}$ weaker absorption peak at $1735\text{cm}^{-1}$	Stronger absorption peaks at $2854\text{cm}^{-1}$ , $2926\text{cm}^{-1}$ , $2962\text{cm}^{-1}$ ; weaker absorption peak at $3040\text{cm}^{-1}$ , $3061\text{cm}^{-1}$	Stronger absorption peaks at $2854\text{cm}^{-1}$ , $2920\text{cm}^{-1}$
The absorption spectra of Raman	Jadeite mineral: absorption peaks at $1039\text{cm}^{-1}$ , $993\text{cm}^{-1}$ , $702\text{cm}^{-1}$ , $378\text{cm}^{-1}$ Insect wax: absorption peaks at $2840\text{cm}^{-1}$ , $2882\text{cm}^{-1}$	Epoxy resin: Stronger absorption peaks at $1116\text{cm}^{-1}$ , $1611\text{cm}^{-1}$ , $3069\text{cm}^{-1}$ , $1189\text{cm}^{-1}$	