

## DOLOMITE IN STRATIGRAPHY OF PAKISTAN AND ITS ECONOMIC SIGNIFICANCES: A REVIEW

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### Abstract

Dolomite is an industrial mineral with chemical composition  $\text{CaMg}(\text{CO}_3)_2$ . The geographical distribution of discovered deposits of dolomite in stratigraphy of Pakistan includes Salt Range, Trans-Indus ranges, Kala-Chitta Range, Lower Indus Basin, axial belt (near Quetta), Khyber Agency, Hazara, Kohat and Mardan areas. The dolomites are found in sedimentary succession ranging in age from Precambrian to Eocene. The lithostratigraphic units with large deposits of dolomite include Precambrian Salt Range Formation, Shagai Formation and Khyber Limestone; Cambrian Jutana, Khisor and Abbottabad formations; Triassic Kingriali Formation; Jurassic Datta, Samana Suk and Takatu formations; Eocene Chorgali and Laki formations.

The potential dolomite deposits are wide spread throughout the stratigraphy of Pakistan i.e. Himalayan fold-and-thrust belt, Khyber-Hazara Belt, Karakoram Block (sedimentary belts), Attock-Cherat Range, Gandghar Range, Kohat Plateau, Sulaiman-Kirthar Fold belt and Lower Indus Platform, East Balochistan fold-and-thrust belt, Tirich Mir Zone and Besham. The lithostratigraphic units to be explored and exploited as potential economic dolomite deposits include Precambrian Miranjani Limestone; Late Proterozoic Darwaza, Sheikhai and Sobrah formations; Middle to Late Paleozoic Kandoana Formation; Cambrian Mahmdagali, Mirpur, Sirban and Ambar formations; Ordovician-Silurian Vidiakot and Yarkhun formations; Devonian Chilmarabad, Shogram, Sewakht formations and Kuragh dolomite sequence; Carboniferous-Permian Spinkai Formation, Tas Kupruk unit, Gircha, Lashkargas, Lupghar, Gharil, Ailak and Guhjal formations, Basal Shales and Ganchen Formation and Atark unit; Permian Wargal Limestone; Devonian Daradar dolomite, Nowshera and Ghundai Sar formations; Triassic Zait Limestone, Ailak Formation, Aghil Limestone, Mianwali, Nikanai Ghar and Gwal formations; Jurassic Kharrari Formation; Cretaceous Zarghun Khel and Kawagarh formations; Eocene Shekhan Formation, Jatta Gypsum, Sui Main Limestone and Sui Upper Limestone.

The dolomite mineral has variety of uses such as the dolostone is a very good hydrocarbon reservoir rock and host rock for strata-bound Mississippi Valley-Type (MVT) ore deposits of base metals (lead, zinc and copper). Dolomite is used as “dimension stone”, decoration stone and gem variety of dolomite is also present. It is used in the construction industry i.e. as a road base material, an aggregate in concrete and asphalt, railroad ballast and rip-rap. It is used in production of glass, bricks, ceramics, studio pottery and calcined in the production of cement. It is used for acid neutralization in the chemical industry, in preparation of magnesium salts, in stream restoration projects and as a soil conditioner. It is a source of magnesium metal and Magnesia (for agricultural and pharmaceutical applications), a feed additive for livestock, a sintering agent in iron ore palletization and as a flux agent in steel making and metal processing. It is also used in cosmetics, toothpaste, plastics, rubbers, adhesives, artifacts, jewellery, monuments, sculpture and small figurines.