

Abstract

The present invention relates to methods for selective binding, selective membrane transport and storage of carbon dioxide (CO₂) in aqueous media. The method of the present invention comprises providing an aqueous acceptor solution containing at least one acceptor compound having a free guanidino and/or amidino group, which is contacted with a gas containing carbon dioxide to bind the carbon dioxide in the acceptor solution. The acceptor solutions containing bound carbon dioxide obtained thereby are useful for storing carbon dioxide in aqueous media, for again releasing the carbon dioxide, and for use in electrochemical processes, such as electrodialysis, to selectively transport bound carbon dioxide through separation membranes into aqueous media. The present invention further relates to the preparation of carbonates starting from acceptor solutions containing bound carbon dioxide.

Fig. 1 accompanies abstract