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Sommario/riassunto	This brief summarizes the most commonly used sulfur dioxide surrogates and also shows the diverse reactivities to highlight the advances made in the development of synthetic methods through the insertion of sulfur dioxide. Depending on the nature of the transformation, these reactions are classified into four types: (i) pericyclic reactions; (ii) nucleophilic addition with organometallic reagents; (iii) transition metal catalysis; and (iv) free radical reactions. Highlighting recent advances in the insertion of sulfur dioxide, providing detailed descriptions of the experimental procedures for these valuable reactions, and discussing the remaining challenges in this field, the brief offers an appealing and highly useful guide for a wide readership in organic chemistry and medicinal chemistry from both academia and industry.