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Catalog # 05-0110 CALLERY™ Dimethylsulfide borane, min. 93%, DMSB

DMSB borane complexes is a versatile compound generally used as regio-, chemo- and stereoselective reducing agents for a variety of functional groups such as aldehydes, ketones, carboxylic acids, amides and olefins. The high yields and simple isolation of the reduced products combined with the high selectivities achieved with borane reagents have made these compounds the preferred reducing agents for a number of applications [1].

Technical Notes:

- 1. Reductant used Pd-catalyzed 1,4-addition of diarylphosphines to α,β-unsaturated aldehydes
- 2. Used in the phosphine-borane organocatalytic reduction of CO₂ to methanol
- Reducing agent used in I₂-catalyzed regioselective hydroxy-acyloxylation alkenes with the leading to monoprotected diol derivatives in excellent yields
- 4. Used in the synthesis of series of P-chirogenic Xantphos ligands and related diaryl ether diphosphines via modified Jugé method
- 5. Hydroboration agent used for Co-catalysed reduction of CO2
- 6. Used for the preparation of the Borane (Fmes)BH₂, useful reagent for the frustrated Lewis Pairs reduction process of CO and CO₂
- 7. Used in the hydroboration of alkynes, alkenes, and ketones with HBpin mediated by DMSB
- 8. Used in the total synthesis of (–)-Curvulamine
- 9. Used in the asymmetric Ni-catalyzed synthesis of P-stereogenic secondary phosphine-boranes



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- 7. Angew. Chem. Int. Ed. 2019, 58, 6737.
- 8. Org. Lett. 2020, 22, 4107.
- 9. J. Am. Chem. Soc. 2020, 142, 1206.
- 10. J. Am. Chem. Soc. 2021, 143, 5685.