

TECHNICAL DATA SHEET

Date of Issue: 2017/01/09

Zinc Bromide / Lithium Bromide, typ. 25 % solution in Dibutyl Ether

Molecular Formula $\text{ZnBr}_2 \times \text{LiBr}$

Product Number 408605

APPLICATION

The use of a 'ready-made' dibutyl ether solution avoids the handling of the very hygroscopic and dusty ZnBr_2 and LiBr powder.

The $\text{ZnBr}_2/\text{LiBr}$ dibutyl ether solution was developed mainly for the application in organic synthesis, e.g.:

- transmetallation of organomagnesium and organolithium compounds to the corresponding zinc reagents for C-C coupling reactions (Negishi protocol)
- formation of zinc enolates by deprotonation of carbonyl compounds using standard bases followed by transmetallation with ZnBr_2
- catalysis of cycloaddition reactions e.g. Diels-Alder reactions of electron rich dienes with carbonyl compounds
- preparation of selective reducing agents, e.g. $\text{Zn}(\text{BH}_4)_2$ by reaction of NaBH_4 with ZnBr_2

Reference:

McGarvey, G.J. in Encyclopedia of Reagents for Organic Synthesis, Paquette, L.A., Ed. John Wiley and Sons, New York (1995), Vol. 8, 5544

FURTHER INGREDIENTS

Dibutyl ether

CAS-No. 142-96-1
EC-No. 205-575-3

Zinc bromide

CAS-No. 7699-45-8
EC-No. 231-718-4

Lithium bromide

CAS-No. 7550-35-8
EC-No. 231-439-8

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Technical data sheets may change frequently. You can download the latest version from our website www.albemarle-lithium.com. Please contact us at www.albemarle-lithium.com/contact with questions.

SPECIFICATION

Zinc Bromide	23 - 27 %
Lithium Bromide	8 - 12 %
Water content	< 0.13 %

METHOD OF ANALYSIS

Determination of assay

- 1) ZnBr₂ via complexometric titration of Zn
 - 2) LiBr via FES of Li
 - 3) water via Karl-Fischer titration
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PHYSICAL PROPERTIES

Appearance	clear or light turbid liquid
Color	tan to pink
Crystallization temperature	< -10 °C
Flash point	25 °C (Di-n-butyl ether)
Boiling point/boiling range	142 - 143 °C at 1,013 hPa (Di-n-butyl ether)
Density	1.1 g/cm ³ at 20 °C
Molecular weight	312.04 g/mol
Thermal Stability	Crystallization below -10 °C
Additional Physical Properties	<u>Molecular weight:</u> ZnBr ₂ 225.19 g/mol LiBr 86.85 g/mol

HANDLING & STORAGE

Handling Under exclusion of air and humidity stable over practically unlimited periods. Dibutyl ether can form explosive peroxides in contact with air. Storage and handling under inert gas is recommended. Pay attention to official safety regulations (see also 'Transport regulations' and 'GHS Hazard Pictograms').

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Storage As $ZnBr_2/LiBr$ tends to crystallize from the solution material should be stored above 0 °C. Pay attention to official safety regulations (see also: "Transport regulations" and "Marking").

TRANSPORT & PACKAGING

UN number 2924

ADR	Class: 3	PG: III	Label: 3 (8)
RID	Class: 3	PG: III	Label: 3 (8)
IMDG	Class: 3	PG: III	Label: 3 (8)
IATA_C	Class: 3	PG: III	Packing instruction (cargo aircraft): 365
IATA_P	Class: 3	PG: III	Packing instruction (passenger aircraft): 354

Hazard pictograms



Signal Word Danger

H&P Phrases See Safety Data Sheet

Labelling The labelling is according to EU-GHS classification ((EG) 1272/2008) and may vary in other countries. Please refer to the respective Safety Data Sheet for your country.

Packaging

Glass bottles of 100, 250, 500, and 1,000 ml. Steel bottles with volumes of 7.4, 27, 127 or 450 l. Steel drums up to 200 l. For safety reasons these are filled to a maximum of 90 %.

OTHER INFORMATION

Further Related Documents Safety Data Sheet

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