

## TECHNICAL DATA SHEET

Date of Issue: 2025/04/08

# Zinc bromide/Lithium bromide, ca. 25 % in Dibutylether (extra dry)

CAS-No.	7699-45-8
EC-No.	231-718-4
REACH No.	01-2119490043-45
Molecular formula	ZnBr <sub>2</sub>
Product number	10001826, 10001827

### APPLICATION

The use of a 'ready-made' dibutyl ether solution avoids the handling of the very hygroscopic and dusty ZnBr<sub>2</sub> and LiBr powder. The ZnBr<sub>2</sub>/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<sub>2</sub> - catalysis of cycloaddition reactions e.g. Diels-Alder reactions of electron rich dienes with carbonyl compounds - preparation of selective reducing agents, e.g. Zn(BH<sub>4</sub>)<sub>2</sub> by reaction of NaBH<sub>4</sub> with ZnBr<sub>2</sub> 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

### SPECIFICATION

Zinc Bromide	23,0 - 27,0 %
Lithium Bromide	8,0 - 12,0 %
Water content	max 0,02 %
Bromide	25,0 - 29,0 %

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## METHOD OF ANALYSIS

### Determination of assay

- 1) ZnBr<sub>2</sub> via complexometric potentiometric titration of Zn
  - 2) LiBr calculated from Zn/Br content
  - 3) water via Karl-Fischer titration
  - 4) Bromide via argentometric titration
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## PHYSICAL PROPERTIES

Appearance	liquid
Color	yellow to red brown
Crystallization temperature	< -10 °C
Flash point	28 °C (Di-n-butyl ether)
Boiling point/boiling range	140.2 °C at 1,013 hPa (Di-n-butyl ether)
Density	1.1 g/cm <sup>3</sup> at 20 °C
Molecular weight	225.19 g/mol
Thermal Stability	Crystallization below -10 °C
Additional Physical Properties	<u>Molecular weight:</u> ZnBr <sub>2</sub> 225.19 g/mol LiBr 86.85 g/mol

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## HANDLING & STORAGE

Handling	Storage and handling under inert gas is recommended. Avoid contact with eyes, skin and clothes as well as inhalation. Never add oxidizing materials to the product. Vapors may form explosive mixtures with air. Vapors are heavier than air and may spread along floors. Flash-back possible over considerable distance. Use only explosion-proof equipment. Take measures against electrostatic discharges. Protect from frost, heat and sunlight. Pay attention to the Safety Data Sheet.
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**Storage** As  $ZnBr_2/LiBr$  tends to crystallize from the solution material should be stored above 0 °C. When stored according to SDS the material is fairly stable. We still recommend to retest the material 9 months after date of analysis if included on CoA. If not included, use the date of manufacturing for the calculation.

## TRANSPORT & PACKAGING

UN number 2924

ADR	Class: 3	PG: II	Label: 3 (8)
RID	Class: 3	PG: II	Label: 3 (8)
IMDG	Class: 3	PG: II	Label: 3 (8)
IATA_C	Class: 3	PG: II	Packing instruction (cargo aircraft): 363
IATA_P	Class: 3	PG: II	Packing instruction (passenger aircraft): 352

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

Steel bottles with volumes of 27 or 450 L. For safety reasons these are filled to a maximum of 90 %.

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## OTHER INFORMATION

Further Related Documents          Safety Data Sheet

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