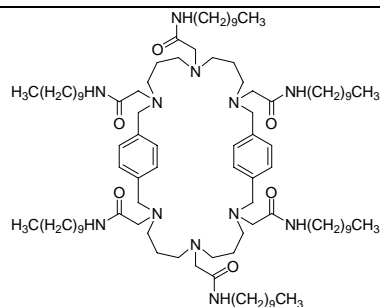


## Benzoate



### Benzoate ionophore I

(N,N',N'',N''',N''',N''''-Hexakisdecyl[dibenzo[klm,z(aa)(ab)]-1,5,9,16,20,24-hexaazacyclotriacontane-1,5,9,16,20,24-hexayl]hexaacetamide)

C<sub>100</sub>H<sub>184</sub>N<sub>12</sub>O<sub>6</sub>      M<sub>r</sub> 1650.61      [227092-22-0]

[30371](#)      **Selectophore®**, function tested      25 mg, 250 mg

## Electrochemical Transduction

- Ion-Selective Electrodes

## Electrochemical Transduction

### Ion-Selective Electrodes

#### Application 1 and Sensor Type <sup>1</sup>

Macrocylic polamine for solvent polymeric membranes in benzoate-selective electrodes for the direct determination of benzoate in food samples.

#### Recommended Membrane Composition

|      |     |  |
|------|-----|--|
| 1.0  | wt% | Benzoate ionophore I ( <a href="#">30371</a> )                         |
| 0.18 | wt% | Tridodecylmethylammonium chloride (TDDMACI) ( <a href="#">91661</a> )* |
| 66.0 | wt% | Bis(2-ethylhexyl) phthalate ( <a href="#">80030</a> )                  |
| 33.0 | wt% | Poly(vinyl chloride) high molecular weight ( <a href="#">81392</a> )   |

#### Recommended Cell Assembly

Reference | 1 M CH<sub>3</sub>COOLi || sample solution || liquid membrane | 10<sup>-1</sup> M KCl + 10<sup>-2</sup> M MES (pH 5.0) | AgCl, Ag

#### Electrode Characteristics and Function

Selectivity coefficients  $\log K_{\text{Benzoate, X}}^{\text{Pot}}$  as obtained by the matched potential method.

|   | without TDDMACI | with TDDMACI* |
|---|-----------------|---------------|
| $\log K_{\text{Benzoate, Acetate}}^{\text{Pot}}$        | -3.4            | -2.1          |
| $\log K_{\text{Benzoate, Citrate}}^{\text{Pot}}$        | -1.0            | -1.4          |
| $\log K_{\text{Benzoate, Chloride}}^{\text{Pot}}$       | <<0             | <<0           |
| $\log K_{\text{Benzoate, Sulphate}}^{\text{Pot}}$       | <<0             | <<0           |
| $\log K_{\text{Benzoate, H}_2\text{PO}_4}^{\text{Pot}}$ | -2.0            | -1.8          |
| $\log K_{\text{Benzoate, Nitrate}}^{\text{Pot}}$        | -1.2            | -4.2          |

Slope of linear regression: -45mV/dec (without additive), -105mV/dec (with additive).

<sup>1</sup> L. Bulgariu, H. Radecka, M. Pietraszkiewicz, O. Pietraszkiewicz, Potentiometric Response of Liquid Membrane Electrode Incorporated with Macrocylic Polyamine Towards Benzoate. **Anal. Letters** **36(7)**, 1325 (2003).