

Free and total SO <sub>2</sub> in beverages by endpoint titration with a polarized Redox sensor																													
This application is used for the free and total sulfur dioxide (SO <sub>2</sub> ) content determination in beverages. The titration is monitored by voltametric measurement with a current-polarized double Platinum pin sensor. The titration is terminated at a predefined potential.																													
<b>Sample</b>	Beverage containing SO <sub>2</sub> , in this application: white wine, 50 mL																												
<b>Preparation procedures</b>	<ul style="list-style-type: none"> <li>Free SO<sub>2</sub>: To 50 mL sample add 5 mL KI solution 10% (w/v) and 5 ml H<sub>2</sub>SO<sub>4</sub> 20% (w/v). Start titration.</li> <li>Total SO<sub>2</sub>: To 50 mL sample add 5 mL NaOH 5 mol/L. Wait 15 minutes, then add 5 mL KI solution 10% (w/v) and 8 mL H<sub>2</sub>SO<sub>4</sub> 20% (w/v). Start titration.</li> </ul>																												
<b>Compound</b>	Sulphur dioxide, SO <sub>2</sub> , M = 64.06 g/mol, z = 2																												
<b>Chemicals</b>	<ul style="list-style-type: none"> <li>10% (w/v) potassium iodide (KI) solution</li> <li>5% (w/v) H<sub>2</sub>SO<sub>4</sub></li> <li>Standard: Ascorbic acid, M=176.13 g/mol</li> </ul>																												
<b>Titrant</b>	<ul style="list-style-type: none"> <li>Iodine, I<sub>2</sub>, c(1/2 I<sub>2</sub>) = 0.02 mol/L</li> <li>Titer: 0.01– 0.03 g ascorbic acid was added to 50 mL deionized water. Subsequently 5 mL H<sub>2</sub>SO<sub>4</sub> 20% (w/v) is added and titration started.</li> </ul>																												
<b>Instruments</b>	[ ] Easy pH    [ ] Easy Cl    [X] Easy Ox    [X] Easy Pro    [ ] Easy KFV																												
<b>Indication</b>	<ul style="list-style-type: none"> <li>Double pin Platinum sensor, EM43-BNC</li> </ul>																												
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<b>Waste dispos.</b>	Neutralize aqueous solution before final disposal																												
<b>Comments</b>	<ul style="list-style-type: none"> <li>The free SO<sub>2</sub> content is between 5 and 20 mg/L. To determine a low SO<sub>2</sub> content it is recommended use the cautious titration control mode (control band of 300 mV)</li> <li>The total SO<sub>2</sub> content can increase up to 50 – 60 mg/L. In this case a smaller control band in the titration control is recommended (control band of 100 – 200 mV)</li> </ul>																												
<b>Limits</b>	Sample size limits (Min – Max): 30 – 100 mL																												
<b>Author</b>	Manuel Heffi, MSG AnaChem, v1.0																												