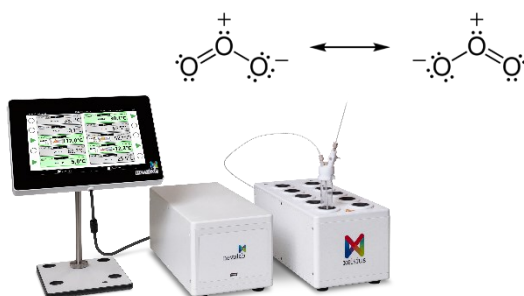


## Oxidations in the presence of ozone (O<sub>3</sub>)



Keywords: Oxidation, Ozone

### Summary

Oxidation reactions in the presence of ozone and monosaccharides in water.

### Equipment

| Item #       | Description                                |
|--------------|--|
| 8053 000 100 | XELSIUS Basic Unit, Software Version: 2.44 |
| 8053 000 201 | Reflux Condenser Module                    |
| 8053 000 202 | HV Vials Starter Kit, 1 - 30 ml            |
| 8053 000 205 | Inert Workstation for 5-Port-Reaction Cap  |
| 8053 000 206 | 5-Port-Reaction Cap and Vialset            |
|              | Ozonator                                   |

### Chemicals

|             | Description                                 |
|-------------|---|
| 1 to 5 mmol | Sample with monosaccharides                 |
| 1 to 5 mmol | Ozonine Gas (O <sub>3</sub> ) from Ozonator |
| 5 to 20 ml  | NaOH - 2N, CAS: 1310-73-2                   |

### Methode

Oxidation reactions in the presence of O<sub>3</sub> and monosaccharides in water medium.

Reaction temperature: 25°C - magnetic stirring (700 rpm);

Reaction time: 4h

Reactive gas used: O<sub>3</sub> flow (1 ml / min).

Using the multi-tasking cap with "inlet" and "outlet" set up for the reactive gas flow through the vial.

Reaction course: regular.

No anomalies found.

### Best practice working with Xelsius:

Best results with 5 mmol of monosaccharides oxidized under O<sub>3</sub> flow of 5ml/min were collected at 70°C in 4 h with 48% conversion.

### References:

Ozon structure:

<https://commons.wikimedia.org/wiki/File:Ozone-resonance-Lewis-2D.png>

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