

## Determination of substances by determination of mixed melting point

### Chemicals

- Sample substance
- Reference substances

### Materials

- Gallenkamps measuring device for melting points
- Thermometer
- Melting point tube
- Mortar and pestle

### Assignment:

Determination of substances by determination of mixed melting point

### Operating instruction:

1. The melting point of the given sample is to be determined by using multiple determination
2. By determination of the mixed melting points it is to be established if the given sample is identical with one (or several or none) of the five reference substances

### Waste disposal:

- All wastes can be disposed of in the container for solid matters

### Analysis:

1. Specify the found melting point of the given sample substance
2. Specify if the given sample is identical with any of the reference substances (if compliant, with which sample?)

- Sample no.: \_\_\_\_\_
- 1. Melting point \_\_\_\_\_ °C
- 2. Substance determination: The given sample is identical with reference substance no.: \_\_\_\_\_

## Preparation list

### Chemicals:

|     | Substance            | Comment                      | Medium melting point in °C |
|-----|----------------------|------------------------------|----------------------------|
| I   | Phenacetin           |                              | 133-135                    |
| II  | Trans-cinnamic acid  | when indicated recrystallize | 133-134                    |
| III | Acetylsalicylic acid |                              | 134-136                    |
| IV  | Malonic acid         |                              | 134-135                    |
| V   | Sorbic acid          |                              | 133-135                    |

- All substances are to be smoothly ground before they are handed out

### Tools:

- Melting point measuring device
- Thermometer
- Melting point tube
- Mortar and pestle

### Reference substance kit:

- Recommended are the following reference substance kits, which are to be handed out in appropriate numbered sample flasks.

|         |               | A         | B         | C         | D         | E         | etc.  |
|---------|---------------|-----------|-----------|-----------|-----------|-----------|-------|
|         |               | A(1)= I   | B(1)= I   | C(1)= II  | D(1)= II  | E(1)= III | etc.. |
|         |               | A(2)= II  | B(2)= IV  | C(2)= III | D(2)= II  | E(2)= IV  | etc.. |
|         |               | A(3)= IV  | B(3)= III | C(3)= II  | D(3)= V   | E(3)= IV  | etc.  |
|         |               | A(4)= I   | B(4)= III | C(4)= IV  | D(4)= I   | E(4)= II  | etc.. |
|         |               | A(5)= III | B(5)= V   | C(5)= I   | D(5)= II  | E(5)= IV  | etc.  |
| Example | Sample number | A(x)= I   | B(x)= I   | C(x)= I   | D(x)= II  | E(x)= II  | etc.  |
|         |               | A(y)= II  | B(y)= III | C(y)= IV  | D(y)= III | E(y)= III | etc.  |
|         |               | A(z)= III | B(z)= IV  | C(z)= V   | D(z)= IV  | E(z)= V   | etc.  |
|         |               | etc.      | etc.      | etc.      | etc.      | etc.      | etc.  |