Name:	Date:

Experiment: Fat in Food
Solubility of Fats and Oils

Equipment
Glass bowls and culture dishes, pipettes, screw-cap bottles, ampoules glasses

Materials
Dropping bottle filled with olive oil, water, benzine, dropping bottle filled with vinegar (use balsamic vinegar for best visibility), washing-up liquid solution (a few drops of washing-up liquid in a small amount of water), dropping bottle filled with ink solution, edible oil e.g. salad oil

Safety and disposal guidelines
Benzine: F, Xn; for specific R/S phrases, see package.

Safety precaution: Benzine is highly flammable and should be kept away from sources of ignition. Note: benzine is a mixture of low-boiling hydrocarbons, and was formerly often used as a stain remover. It must not be mixed up with benzene, the simplest aromatic hydrocarbon.

Introduction
Have you ever thought about why there are globules of fat floating on your soup? Or have you ever closely watched the preparation of a salad dressing? In the following exercise you can experiment with different liquids and find out about their solubility and to what degree they blend or not.

Experiment
1. Analysing salad dressing:
   Watch closely how a salad dressing is prepared. You will basically only need water, oil and vinegar.
   Place a small amount of water in a glass bowl and add some drops of vinegar. Observe how the two liquids blend.

   Observations:

   _____

   _____

   Now we have to add oil to the dressing: Add a few drops of oil to the vinegar and water. What happens now?

   Observations:

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2. Pour a small amount of water into a glass bowl, and then pour some benzine into another glass bowl. Now add some drops of olive oil to both glass bowls. Observe what happens and describe in detail what you see!

   Observations:

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   Now add the washing-up liquid solution to the bowl with the oil and the water one drop at a time.

   Observations:

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   _____

   Remember that many solvents other than water are used in everyday life. Stain removers, for instance, dissolve grease stains because they are lipophilic solvents. In contrast to this, water will not dissolve greasy stains.

3. Fill a glass with about 1 cm of water and then add an oil layer of about 4 cm. Now place 2 to 3 drops of ink solution on the liquids and observe what happens. You may have to slightly swirl the glass.

   Observation:

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   _____

   Now wait for a couple of minutes. What happens?

   Observations:

   _____

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