

CHEMISTRY IN ENGLISH

1. STARTING POINT: “What is chemistry?”

Chemistry is a branch of science that deals with chemical elements and compounds, and how these things work together. It is the study of the materials (things) that make up our bodies and everything in the world around us.

Identify the following chemicals in English:

- H₂O **water**
- NO_x **nitrogen oxide**
- CO₂ **carbon dioxide**
- SO₂ **suplhur dioxide**
- H **hydrogen**

2. VOCABULARY (chemical laboratory equipment an verbs connected with labs)

a) Match the words with its definitions and find Czech expressions:

- | | |
|----------------|---|
| 1) test tube | a) A unit that supports various laboratory apparatuses such as burettes. |
| 2) beaker | b) A flat bottomed jar made of glass or plastic. |
| 3) gas burner | c) Flat transparent box for culturing microorganisms; it has a cover to protect them from microorganisms. |
| 4) Petri dish | d) A circular concave piece of glass used in chemistry as a surface to evaporate a liquid. |
| 5) watch glass | e) A cylindrical round-bottomed glass tube open at one end. |
| 6) a stand | f) A device that is filled by gas to produce a flame for heating chemical products. |

KEY:1e 2b 3f 4c 5d 6a

b) Match the words with its definitions and find Czech expressions:

- | | |
|----------------|--|
| 1) objective | a) to attach firmly or securely in place |
| 2) to sink | b) to increase the number, quantity, size |
| 3) to add | c) purpose; goal; target |
| 4) to mix | d) to make (a liquid) pure by heating it until it becomes a gas and then cooling it until it is a liquid again |
| 5) to dissolve | e) to form an approximate judgement or opinion regarding the worth, amount, size, weight |
| 6) to estimate | f) to go down below the surface of water |
| 7) to drop | g) to combine (two or more substances) to make a different substance |
| 8) to set | h) To put in a specified position or arrangement; place |
| 9) to distill | i) to make a solution of, as by mixing with a liquid; pass into solution: to dissolve salt in water |
| 10) to fasten | j) to fall or to allow something to fall |

KEY: 1c 2f 3b 4g 5i 6e 7j 8h 9d 10a

c) Translate the following instructions into Czech (notice how they use imperative form):

- 1) Open the bottle of ammonia solution cautiously, pointing the bottle away from both you and the audience.
- 2) Repeat this procedure quickly.
- 3) Watch the tube and observe a ring of white powder forming near the middle of the tube.
- 4) The reaction which is taking place is clear.
- 5) Wear suitable eye protection.
- 6) Add water with plenty of stirring.
- 7) Chlorine is classified as TOXIC, IRRITANT and DANGEROUS.
- 8) Using the burette, add a small portion (3 – 5 cm³) of dilute hydrochloric acid.
- 9) Measure the highest temperature.
- 10) Plot a graph of temperature.

d) English grammar in chemistry lab worksheets (notice how they use passive instead of active):

1) Correct:

100mL of distilled water was poured into a 200 mL beaker.

Incorrect:

I poured 100mL of distilled water in a beaker. (active voice)

2) Correct:

The covered crucible was mounted on a ring stand.

Incorrect:

We put the crucible on a ring stand. (active voice)

3) Correct:

The temperature was initially measured at 75°C.

Incorrect:

I measured the temperature at 75°C. (active voice)

e) Translate the following instructions into English:

- 1) Bezpečnost je na prvním místě – používejte zdravý rozum, abyste se vyhnuli nehodě.
- 2) Nevstupujte do laboratoře bez učitelského dozoru.
- 3) Každý student, který ohrozí bezpečnost ostatních, bude z laboratoře vyloučen.
- 4) Všichni studenti musí neustále nosit ochranné brýle. Oční dioptrické čočky jsou povoleny.
- 5) Studenti musí nosit boty (ne sandále). Holé nohy nebo otevřené boty nejsou povoleny.
- 6) V laboratoři vždy nosíme pracovní plášť
- 7) V laboratoři se nesmí jíst, pít, kouřit.
- 8) Z laboratoře není dovoleno odnášet chemikálie nebo vybavení.
- 9) Do laboratoře nikoho nezvěte.

Possible solution:

- 1) SAFETY FIRST - USE COMMON SENSE to avoid accidents.
- 2) DO NOT ENTER LABORATORY unless your assistant/teacher is present in the lab.
- 3) Any student who endangers others' safety, or his or her own, will be dismissed from the laboratory.
- 4) All students must WEAR SAFETY GLASSES (GOGGLES) AT ALL TIMES. Normal prescription lenses are accepted!
- 5) Shoes (no sandals) must be worn at all times. Bare feet or open shoes (front or back) are not permitted in the laboratory.
- 6) All students must wear lab coats at all times.
- 7) No eating, drinking, or smoking is permitted in the laboratory.
- 8) No chemicals or equipment may be removed from the laboratory.
- 9) Do not invite anyone into the lab.