

Regulations of the International Chemistry Olympiad (IChO)

G e n e r a l S t a t e m e n t

§ 1

Aims of the competition

The International Chemistry Olympiad (IChO) is a chemistry competition for students at secondary school level with the aim of promoting international contacts in chemistry. It is intended to stimulate the activities of students interested in chemistry by a way of independent and creative solving of chemical problems. The IChO competitions help to enhance friendly relations among young people from different countries; they encourage cooperation and international understanding.

O r g a n i z a t i o n o f I C h O

§ 2

Organization and invitation

(1) The IChO is organized every year as a rule at the beginning of July in one of the participating countries by the Education Ministry or another appropriate institution of the organizing country (hereafter referred to as the organizer).

(2) The organizer is obliged to invite all countries participating in the previous IChO competition. The official invitation to participate in the forthcoming IChO should be sent to countries by the November preceding the competition. The invited countries must confirm their participation in the IChO according to requirements of the organizer.

(3) Moreover, other countries may apply for the participation in IChO but the organizer has the right to invite the countries only on agreement with the organizers of two forthcoming IChOs. Incoming countries must send observers to two consecutive Olympiads before its pupils can participate in IChO (see also § 3, section 5).

§ 3

Delegations

(1) Each participating country's delegation may consist of four competitors and two accompanying persons (also known as mentors). Countries may include one scientific observer in their delegation.

(2) The competitors must not be university students. They can only be students of secondary schools which are not specialized in chemistry and, if they are already graduated

before May 1st in the year of the competition, the organizer must be informed about the month and year of their graduation. Moreover, they must be under the age of 20 at the 1st of July in the year of the competition.

The competitors must be passport holders of the country they represent or they had to take part in the secondary school educational system of this country for more than one academic year.

All members of a delegation must provide themselves with medical insurance for the journey to/from the organizing country and the stay in the country.

(3) The mentors act as members of the International Jury (see § 6) and one of them is designated as the head of delegation.

(4) The mentors:

- a) must guarantee the fulfilment of those conditions given in section 2 of this paragraph,
- b) must be capable of translating the text of competition tasks from English into the mother tongue of their students and be able to judge the set of tasks and correct the work of the students.
- c) have the right to enter a protest which should be addressed to the Chair of the International Jury and, when necessary, ask for solving the problem at the next meeting of the International Jury.

(5) Incoming countries that are invited by the organizer, and intend to take part in future IChOs, may send one scientific observer.

§ 4 Obligations of the Organizer

(1) The organizer provides:

- a) the itinerary of the IChO,
- b) transportation from/to an airport/station decided by the host country on the day of arrival and departure,
- c) the organization of the competition following the regulation,
- d) accident insurance for all participants in connection with the organized programme,
- e) the opportunity for the mentors to inspect the working room and practical apparatus to be used for the practical tasks before the competition takes place,
- f) arrangement for the observance of the safety regulations,
- g) the medals, certificates and prizes, which are presented at the official closing ceremony,
- h) a printed report on the competition to be distributed not later than six months after the competition.

§ 5 Financing

(1) The participating country covers the return travel costs of the students and the accompanying persons to the designed airport/station or to the place where the competition is held.

- (2) The participating country must pay for the participation fee the amount of which must be approved by the International Jury.
- (3) All other costs in connection with the organized program, including the costs of accommodation for all competitors and members of the International Jury, are covered by the organizer.
- (4) The organizer of the next Olympiad may send two observers to the current IChO with their expenses covered by the host as mentioned in the preceding section 3.

I n s t i t u t i o n s o f I C h O

§ 6

International Jury

- (1) The International Jury consists of its chair and members. The chair of the International Jury is nominated by the organizer. The members of the International Jury are the two mentors from the individual delegations and the chair of the Steering Committee (see § 8).
- (2) The chair of the International Jury or his/her delegate calls and chairs all the meetings of the International Jury concerning the current competition.
- (3) Resolutions of common International Jury sessions or its split sessions are passed by the International Jury when they are agreed by a simple majority of votes in the presence of at least 75% of the delegations. Each participating country has one vote. Changes in the regulations can only be done at the common sessions of the International Jury and require a qualified majority of two thirds of the votes. The chair has a casting vote in the event of a tie. The decisions of the International Jury are binding for both organizer and participants.
- (4) The working language of the International Jury is English.

§ 7

Responsibilities of the International Jury

- (1) The International Jury:
 - a) is in charge of the actual competition and its supervision according to the regulations,
 - b) discusses in advance the competition tasks presented by the organizer, their solutions and the marking guidelines, gives comments and decides in case of changes,
 - c) supervises the marking of the examination papers and guarantees that all participants are judged by equal criteria,
 - d) determines the winners and decides on prizes and documents for the competitors,

- e) monitors the competition and suggests changes to the regulations, organization and contents for future IChOs,
 - f) takes decisions on excluding of a participant or a whole team from the competition (see also § 11, section 7),
 - g) elects members of the Steering Committee of the IChO,
 - h) may form working groups to solve specific chemistry related problems of the IChO.
- (2) The members of the International Jury:
- a) are obliged to maintain a professional discretion about any relevant information they receive during the IChO and must not assist any participants,
 - b) keep the marking and results secret until proclaimed by the International Jury.
- (3) The working groups of the International Jury should draw its membership from IChO participating countries and those interested in IChO competitions. The working groups meet for working sessions and submit the results of the deliberations to the Steering Committee.

§ 8 Steering Committee

- (1) The long term work involved in organizing the International Chemistry Olympiads is coordinated by the Steering Committee.
- (2) Members of the Committee are elected by the International Jury. They are representatives from various geographical areas (3 from Europe, 1 from Americas, 1 from Pacific Rim), to serve a two year term. Members are elected for no more than two consecutive terms. Moreover, 1 - 3 members may be selected by the Steering Committee for their particular expertise for periods of one year.
- (3) There are three ex-officio members of the Steering Committee:
- a) chair of the current IChO,
 - b) chair of the immediate past IChO,
 - c) chair of the immediate future IChO.
- (4) The Steering Committee elects its own Chair. The Chair:
- a) calls and chairs the meetings of the Steering Committee.
 - b) calls and chairs the business meetings of the International Jury dealing with general problems of future International Chemistry Olympiads.
 - c) has the right to call a special meeting of the International Jury when necessary for some exceptional reasons.
- (5) The Steering Committee:
- a) provides organizational oversight for the International Chemistry Olympiad,
 - b) proposes items for consideration at the International Jury sessions.
- (6) The Steering Committee has no right to make any decisions about the International Chemistry Olympiad that would interfere with the responsibilities of the International Jury (see § 7 and 8).

§ 9

International Information Center

There is an International Information Center of the International Chemistry Olympiads gathering and providing (when necessary) all the documentation of the IChOs from the very beginning of the Olympiad to the present. The seat of the Office is in Bratislava, Slovakia.

C o m p e t i t i o n

§ 10

Preparation for the IChO competition

- (1) By the November of the proceeding competition the organizer distributes to all participating countries a set of preparatory tasks written in English. The preparatory tasks must be devised so that students can get a good idea of the type and difficulty of the competition tasks, including safety aspects (see §12 and Appendix "B"). According to Appendix "C" topics of group 3 must be covered in the preparatory problems. SI units must be used throughout the preparatory tasks.
- (2) The total number of theoretical and experimental tasks in the set of preparatory problems cannot be lower than 25 and 5, respectively.
- (3) The organizer cannot give theoretical problems of level 3 (Appendix C) from more than 3 fields and a minimum of 6 tasks should be presented in the set of preparatory problems from each field. Subjects assigned to level 3 can be classified as level 2 if sufficient background is included in the formulation of the problem (e. g. formulas, graphs, structures, equations).
- (4) The organizer cannot set an experimental competition task with an experimental technique of level 3 (Appendix D) without mentioning it at least in one of experimental preparatory tasks.
- (5) Training or any other special instruction, that is carried out for a selected group of 50 or fewer students, containing the IChO team, must be no longer than two weeks.

§ 11

Organization of the IChO Competition

- (1) The competition consists of two parts:
 - a) part one, the practical (experimental) competition,
 - b) part two, the theoretical competition.
- (2) A working time of four to five hours is allotted for each part. There is at least one day of rest between the two parts.
- (3) Competitors receive all the relevant information in the language of their choice and are allowed to write the solutions in that language.

- (4) There must be no contact between mentors and competitors once the mentors received the competition tasks for consideration. No information about the competition tasks must be passed to the competitors directly or indirectly prior and during the competition.
- (5) Only non-programmable pocket calculators may be used for the solving of the tasks.
- (6) The safety regulations announced by the organizer are binding for all participants.
- (7) Breaking of any rules given in the preceding paragraphs (§ 3. section 2, § 10, section 4, § 11, sections 4, 5, and 6) has as its consequence excluding from the whole or a part of the competition.

§ 12 Safety

- (1) During the experimental part, the competitors must wear laboratory coats and eye protection. The competitors are expected to bring their own laboratory coats. Other means of protection for laboratory work are provided by the organizer.
- (2) When handling with liquids, each student must be provided with a pipette ball or filler. Pipetting by mouth is strictly forbidden.
- (3) The use of very toxic substances (designation T+) is strictly forbidden. The use of toxic substances (designation T) is not recommended, but may be allowed if special precautions are taken. Substances belonging to the categories R 45, R 46, R 47 must not be used under any circumstances (see Appendix B for definitions of these categories).
- (4) The organizer provides a list of chemicals from which the chemicals used in practical preparatory and competition tasks are drawn. The list of chemicals must include information of the maximum amounts of materials needed or in the case of solutions their maximum concentrations. Any hazardous materials on the list must be accompanied by detailed instructions for safe handling. The list must be provided together with the preparatory tasks (see § 10).

Each participating country has three months to file a substantiated dissent concerning the use of a special chemical. Silence indicates acceptance. The organizer should try to revise the list in order to satisfy any objections. The final revision of the list will be distributed to the delegation leaders at the start of the Olympiad.

- (5) Detailed recommendations involving students' safety and the handling and disposal of chemicals can be found in Appendices A 1, A 2, and B.
 - a) Appendix A 1: Safety Rules for Students in the laboratory.
 - b) Appendix A 2: Safety Rules and Recommendations for the Host Country of the IChO.
 - c) Appendix B contains:
 - B 1: Hazard Warning Symbols and Hazard Designations and their explanation.
 - B 2: R-Ratings and S-Provisions: Nature of special risks (R) and safety advice (S).

§ 13

Competition Tasks

- (1) The organizer is responsible for the preparation of competition tasks by competent experts/authors, who constitute the Scientific Board of the IChO. They propose the methods of solution and the marking scheme.
- (2) The tasks, their solutions and the marking schemes are submitted to the International Jury for consideration and approval. The authors of the tasks should be present during the discussion.
- (3) The Chair of the International Jury may put the Chair of the Scientific Board in charge of the proceedings when the tasks are considered.
- (4) The total length of the theoretical or experimental tasks must not exceed 10,000 characters. SI units must be used throughout the competition tasks.
- (5) In the experimental part of the competition the following conditions must be fulfilled:
 - a) The experimental part must contain at least two independent tasks.
 - b) No part of the grade can subjectively be evaluated by the staff.
 - c) Competitors must receive the same substances when solving the tasks from qualitative analytical chemistry.
 - d) When solving tasks from quantitative analytical chemistry competitors must receive the same substances but with different concentrations.
 - e) In evaluating the quantitative tasks the master values must not be based on average results of the competitors.
 - f) The great majority of the grade in quantitative tasks must be given to the mean value as reported by the competitors while some marks may also be given to the corresponding equations, calculations, or explanations directly related to the work. Points must not be awarded for reproducibility.

§ 14

Correcting and Marking

- (1) A maximum of 60 points is allocated to the theoretical tasks and 40 points to the practical tasks, making a total of 100 points.
- (2) The competition tasks are corrected independently by the authors and by the mentors. Consequential marking should be used so that students are not punished twice for the same error. Both corrections are then compared, however, the authors present their evaluation first. After a discussion the final score for each participant is reached and agreed by both sides. The organizer retains the original marked manuscripts.
- (3) The International Jury discusses the results and decides on the final scores.
- (4) In order to eliminate any doubts about possible mistakes in the processing of the results the organizer must provide the mentors with a list of their students' total results before the closing awards' ceremony.

§ 15

Results and Prizes

- (1) Official results of the competition and the number of medals awarded are decided by the International Jury.
- (2) The number of gold medals awarded is in the range of 8% to 12%, silver 18% to 22%, and bronze medals 28% to 32% of the total number of competitors. The exact number of medals is decided on the basis of an anonymous review of the results.
- (3) Every medalist must receive the medal and a corresponding certificate from the organizer.
- (4) In addition to the medals other prizes may be awarded.
- (5) An honourable mention is awarded to competitors who do not receive a medal, but gain full marks for at least one problem.
- (6) Each competitor receives a certificate of participation.
- (7) In the awarding ceremony, the non medalists are called in alphabetical order.
- (8) No team classification takes place.
- (9) The organizer must provide a complete list of results as a part of the final report.

§ 16

Final Regulations

- (1) Those who take part in the competition acknowledge these regulations through their very participation.
- (2) This version of regulations has been approved by the International Jury in Bangkok (Thailand) in July 1999 and is issued to replace the former one approved in Oslo (Norway) in 1994.
- (3) The regulations are valid from September 1st, 1999. Changes in them can only be made by the International Jury and require a qualified majority (two third of the votes with regard to total number of participating countries).