

Environment, Health and Safety Committee
Note on:
HEALTH AND SAFETY OF YOUNG PERSONS
WORKING IN CHEMICAL LABORATORIES

PREAMBLE

Health and safety legislation is often cited as the main reason for not employing young persons in chemical laboratories. Legislation does not prohibit the employment of young persons in chemical laboratories but it does provide a framework for their protection. This Note aims to clarify of the legal position and to give some basic information on the health and safety requirements for young persons working in chemical laboratories. In order to stimulate young and enquiring minds, it is vital to allow young persons to experience practical work in chemical laboratories at first hand. This Note does not, however, purport to be a full or definitive guide. Readers are urged to obtain more detailed information if this is required. The bibliography at the end of this Note provides a good starting point but it is not exhaustive.

1. INTRODUCTION

In the UK, a young person is defined as any person who has not attained the age of eighteen and a child is defined as any person who is not over the minimum school leaving age (i.e. 16 years old). A child under the age of 13 is prohibited from any form of employment by The Children and Young Persons Act 1933 (as amended by the Children (Protection at Work) Regulations 1998). However, there are many exceptions to this regime, including licences for children to work as actors, models and the like, and the ability of local authorities to make exceptions through bye-laws and issuing permits. In addition, there are restrictions on the employment of children between the ages of 13 and 16.

The Management of Health and Safety at Work Regulations 1999 (MHSW Regulations) set out the basic requirements for safeguarding the health and safety of young persons at work. In addition, the Working Time Regulations 1998 (as amended) impose certain restrictions on the hours of work of young persons.

2. PROTECTION OF YOUNG PERSONS

Under the MHSW Regulations, an employer must protect young persons from any risks to their health and safety that are a consequence of their lack of experience, their absence of awareness of existing or potential risks, their lack of training or their lack of maturity.

The Regulations specify that an employer should not employ a young person for work which:

- is beyond his/her physical or psychological capacity;
- involves harmful exposure to agents that are toxic or carcinogenic, cause heritable genetic damage or harm to the unborn child or which in any other way chronically affects human health;
- involves exposure to ionising radiation;
- involves the risk of accidents which cannot be recognised or avoided by young persons due to their insufficient attention or lack of experience or training; or
- presents a risk to health from extreme cold or heat, noise or vibration.

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When an employer determines whether such work will involve harm or risk, due regard should be paid to the results of the risk assessment that is required to be undertaken by the Regulations, see Section 3 below.

The restrictions outlined above do not prevent the employment of a young person, who is no longer a child, if it is necessary for his/her training during which he/she will be supervised by a competent person and where any risk, that has been identified, has been reduced to the lowest level that is reasonably practicable

3. RISK ASSESSMENT

An employer needs to carry out a risk assessment before young persons start work. The purpose of the assessment is not to prevent employment but to identify if there is any residual risk to the young person, taking into account control measures that are already in place and paying particular attention to the risk areas mentioned in Section 2 above

The risk assessment should take into account the following:

- the inexperience, lack of awareness of risks and the immaturity of young persons;
- the fitting out and layout of the workplace and work stations;
- the nature, degree and duration of exposure to physical, biological and chemical agents;
- the form, range and use of work equipment and the way in which it is handled;
- the organisation of processes and activities;
- the extent of health and safety training provided or to be provided to young persons;
- the availability of suitable personal protective equipment ; and
- risks from agents, processes and work listed in Annex to Council Directive 94/33/EC on the protection of young persons at work e.g. lead, carcinogens and explosives.

When the employer is satisfied that risk controls have been put in place but there is, nevertheless, a significant risk, a child cannot be employed in this work. A young worker, above the minimum school leaving age may, however, do this work provided that it is necessary for his/her training, that he/she will be supervised by a competent person and that the risk will be reduced to the lowest level reasonably practicable.

The employer must provide all young persons, including school children on work experience programmes, with comprehensible and relevant information on the risks and precautions relating to the work that they undertake. This will enable young persons to work safely and to know what action that they should take in an emergency

4. SCHOOL CHILDREN AND WORK EXPERIENCE

Before employing a school child on work experience programmes, parents and carers should be provided with comprehensible and relevant information on:

- the risks to his/her health and safety as identified by the risk assessment;
- the preventative and protective measures;
- the risks notified to him/her in accordance with the MHSW Regulations; and
- the responsibilities of the school, the parents or carers, the employer and the young person themselves in implementing risk controls.

Although there is no specific requirement to provide this information in writing it is difficult to see how this information can be effectively communicated in any other way. The information can be readily provided along with the appropriate authorisation forms relating to work experience placement.

It is important that school children who are to undertake work experience programmes are properly prepared and briefed on workplace hazards and control measures that are in place.

They need to know what restrictions or special arrangements, if any, are imposed on them in relation to work activities or specific areas of the workplace. Employers and their staff need to be fully aware of their legal responsibilities and what is expected of them.

Schools should be clear about their responsibilities in arranging placements and for introducing general health and safety issues to school children before they embark on their placements. It is important that there is close co-operation between schools and work experience providers in order to prepare school children for their placements in an effective manner and so that the experience is an enjoyable one.

5. PRACTICAL GUIDANCE

Good practical guidance on the application of the requirements of the MHSW Regulations and the safeguarding of young persons is given by the Health and Safety Executive (HSE) on their website. Information is also given to other relevant legislation which imposes some prohibitions or limitations on young persons working in certain industries or activities. For example young persons are prohibited from undertaking certain work with lead and explosives (young persons are not permitted to enter danger buildings and explosives stores). There are no prohibitions or limitations for young persons undertaking general work in chemical laboratories.

It is recognised, however, that there are certain activities that involve the risk of accidents that cannot reasonably be expected to be recognised or avoided by young persons due to their insufficient attention or lack of experience or training. These activities include work in the production or handling of compressed, liquefied or dissolved gases and work involving flammable gases, gas cylinders or bulk chemicals.

Steps to avoid the risk of such accidents can be achieved if employers comply with the requirements of Health and Safety at Work Act 1974 and all relevant subsidiary legislation, Approved Codes of Practice and HSE guidance publications. If these requirements are met, young persons will be afforded appropriate protection whilst at work and should not be exposed to risks to their health and safety.

The sensible and practical steps that an employer needs to take can be summarised as follows:

- undertake a risk assessment before each young person begins work;
- appoint a supervisor or mentor for each young person;
- provide clear instructions to the young person on appropriate behaviour in the workplace;
- encourage the asking of questions;
- provide appropriate training in laboratory techniques and operating procedures;
- provide health and safety training;
- provide appropriate personal protective equipment that fits properly;
- establish a written work plan that includes competency checks; and
- establish a workbook for each young person to record their achievements.

As a precursor to employing young persons in chemical laboratories, schools may wish to teach their pupils about the hazards which they might face when they go on work experience or start their first proper job. This can be done by including the British Safety Council's Entry Level Award in "Workplace Hazard Awareness" in the school curriculum. This vocational award is part of a three-way initiative between the HSE, the British Safety Council and the Institution of Occupational Safety and Health. It is accredited by the Qualifications and Curriculum Authority and is free of charge.

The Institution of Occupational Safety and Health also offer a free health and safety training programme for young persons under their Wiseup2work initiative.

Peer pressure is very important for young persons. It is one of the main reasons why they may not feel able to ask questions or speak up about any concerns that they may have about their work experience. In order to combat this, the British Safety Council has established a new campaign "Speak up, Stay safe" which asks for young persons to take responsibility for their own health and safety.

6. CONCLUSION

There is no legal prohibition on young persons working in chemical laboratories. Legislation provides an adequate framework to safeguard the health and safety of young persons at work. There is no reason, therefore, why young persons should not be employed in chemical laboratories provided sensible precautions are taken. The RSC believes that young persons who have an interest in chemistry should benefit from the practical experience through work experience schemes or full time employment in chemical laboratories. It is essential for young persons who wish to pursue higher education studies in chemistry and chemical sciences to have the opportunity to gain appropriate practical experience as part of the preparation for their studies and to encourage them in their pursuit of chemistry.

7. BIBLIOGRAPHY

EHSC Note "Risk Assessment at Work", Royal Society of Chemistry, 2011.

EHSC Note "Health and Safety Legislation and Practical Chemistry Teaching in Schools", Royal Society of Chemistry, 2008.

Health and Safety Commission, "The Management of Health and Safety at Work Regulations 1999 – Approved Code of Practice and Guidance", L21, Second Edition, HSE Books, 2000, ISBN 0 7176 1889 7.

"THE RIGHT START. Work experience for young people: Health and safety basics for employers", INDG364, HSE Books, 2000, ISBN 0 7176 2547 8

The Children & Young Persons Act, 1933 (23 & 24 GEO. 5, c12), HMSO, 1933.

The Children (Protection at Work) Regulations 1998, SI 1998/276, HMSO, 1998.

The Working Time Regulations 1998, SI 1998: No 1883, HMSO.

Health and Safety at Work, etc. Act 1974 (1974, c37), HMSO, 1974.

HSE Website: www.hse.gov.uk/youngpeople/index.htm

British Safety Council Awards, 70, Chancellors Road, London W6 9RS. Telephone 0208 600 5531. Website: www.bscawards.org

British Safety Council "Speak up, Stay safe": www.britsafe.org/speakupstaysafe

Institution of Occupational Safety and health "Wiseup2work": www.iosh.co.uk/wiseup2work.aspx

CLEAPSS Secondary Science Guidance Leaflets PS 73 Pupils on work experience in prep rooms (04/07) Pupils on work experience in prep rooms

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