

**PRACTICAL TRAINING AND CAPACITY BUILDING WORKSHOP ON THE  
GLOBALLY HARMONISED SYSTEM OF CLASSIFICATION AND  
LABELLING OF CHEMICALS (GHS)**

**ASSISTING THE PUBLIC AND PRIVATE SECTOR IN SOUTHERN AFRICAN  
COUNTRIES WITH THE IMPLEMENTATION OF THE GHS AS AN  
ESSENTIAL  
RISK MANAGEMENT TOOL**

**WITH ASSISTANCE AND SUPPORT OF THE UN INSTITUTE FOR TRAINING AND  
RESEARCH (UNITAR)**

**10 - 11 March 2011, Durban, South Africa  
14-15 March 2011, Pretoria/Johannesburg, South Africa**

**Training Workshop Programme**

The objective of the training is to familiarise technical representatives with all general aspects of the GHS and to train professionals from both the public and private sector in applying the GHS for the classification and labelling of substances and mixtures. The two-days technical training and capacity building workshop was developed by Orange House Partnership (OHP) experts with assistance and involvement of UNITAR and addresses the fundamental concepts of hazard and risk assessment and all aspects of the GHS, including a very brief history of its development. The target audience of this training workshop includes technical experts responsible for classification and labelling, occupational health officers and officials responsible for hazard communication.

**Workshop Chair: Herman Koëter**

**Day 1: Thursday 10 March (Durban) / Monday 14 March (Pretoria/Johannesburg)**

**Session 1: Opening and General Introduction Session**

08:30 – 08:35 Opening and welcome address [*Herman Koëter and Jonathan Krueger*]  
08:35 – 08:45 Short introduction of OHP [*Herman Koëter*]  
08:45 – 09:00 Short introduction of UNITAR and its role in the GHS [*Jonathan Krueger*]

**Session 2: Principles of Hazard and Risk Assessment / History of the GHS  
Development**

09:00 – 09:20 History of the GHS development [*Iona Pratt*]  
09:20 – 09:50 Principles of hazard and risk assessment as the scientific base of the GHS  
[*Herman Koëter*]

09:50 – 10:10 *Short refreshment break*

**Session 3: Physical hazard classification criteria for substances and mixtures**

10:10 – 11:10 Physical hazards, Part 1: Classification of explosives, flammables (gases, aerosols, liquids and solids), self-reactive substances and organic peroxides [Steve Vaughan]

11:10 – 12:10 Physical hazards, Part 2: Classification of pyrophorics (solids and liquids), self-heating and oxidising substances and mixtures, substances and mixtures which are corrosive to metals, and substances and mixtures which emit flammable gases on contact with water [Helmut Fleig]

12:10 – 13:10 Lunch break

**Session 4: (Breakout Groups): Practicing physical hazards classification**

[Moderators: Helmut Fleig and Steve Vaughan; assisted by: Iona Pratt, Herman Koëter, Jonathan Krueger and Paula Viapiana]

13:10 – 15:10 Session to classify a series of example substances and mixtures for physical hazards

15:10 – 15:25 Short refreshment break

**Session 5: Health hazard classification criteria for substances and mixtures**

15:25 – 16:30 Health hazards, Part 1: Classification of substances and mixtures based on acute toxicity, specific target organ toxicity–single exposure (STOT-SE), aspiration, skin and eye corrosivity/irritation, and sensitization hazards. [Helmut Fleig]

16:30 – 17:30 Health hazards, Part 2: Classification of substances and mixtures based on germ cell mutagenicity, carcinogenicity, reproductive toxicity and specific target organ toxicity-repeated exposure (STOT-RE) hazards [Iona Pratt]

17:30 Workshop adjourns for the day

**Day 1: Friday 11 March (Durban) / Tuesday 15 March (Pretoria/Johannesburg)**

**Session 6: (Breakout Groups): Practicing health hazards classification**

[Moderators: Helmut Fleig and Iona Pratt; assisted by Herman Koëter, Steve Vaughan, Jonathan Krueger and Paula Viapiana]

08:30 – 10:30 Session to classify a series of example substances and mixtures for health hazards

10:30 – 10:45 Short refreshment break

**Session 7: Environmental hazard classification criteria for substances and mixtures**

10:45 – 11:30 Classification of substances based on acute and chronic (long-term) aquatic environmental hazards and on hazards to the ozone layer [Helmut Fleig]

11:30 – 12:15 Classification of mixtures based on acute and chronic (long-term) aquatic environmental hazards [Steve Vaughan]

12:15 – 13:00 *Lunch break*

**Session 8: (Breakout Groups): Practicing environmental hazards classification**  
*[Moderators: Steve Vaughan and Helmut Fleig; assisted by Herman Koëter, Iona Pratt, Jonathan Krueger and Paula Viapiana]*

13:00 – 14:45 Session to classify a series of example chemical substances and mixtures for (aquatic) environmental hazards

14:45 – 15:00 *Short refreshment break*

**Session 9: Hazard communication and transport specific issues**

15:00 – 16:00 Hazard statements, label elements, codification of statements, precautionary statements and preparation of Safety Data Sheets (SDS). *[Iona Pratt]*

16:00 – 16:30 Specific hazard issues in the Transport of Dangerous Goods and comparative analysis of the GHS and RTDG *[Helmut Fleig]*

**Session 10: GHS Implementation and general discussion**

16:30 – 16:45 Status of the GHS implementation in Southern Africa *[Liz Anderson, ARPMASA]*

16:45 – 17:00 Training and experience with GHS implementation in Uruguay *[Paula Viapiana, University of the Republic, Uruguay]*

17:00 – 17:30 Possible outstanding issues, questions and answers, follow-up training needs and overall workshop evaluation.

17:30 *Workshop adjourns*

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### Training Workshop Faculty (in alphabetical order)

- **Dr. Helmut Fleig, Germany, email: [helmutfleig@t-online.de](mailto:helmutfleig@t-online.de)**  
Completed his studies of Natural Sciences at the University of Heidelberg (Germany). From 1970 he worked in BASF in the areas of toxicology/product safety and was mainly engaged in classification & labeling and risk assessment. After his retirement in 2005 Dr Fleig became independent consultant (Helmut Fleig Consultant/HFC). Dr Fleig's professional memberships and extra-curricular activities include: the German Chemical Industry Association, German Advisory Board; German EU delegation for C&L from 1980-2002 and international bodies such as CEFIC and BIAC. He participated in the GHS development process in OECD/UN since 1994 and in EU-ECHA guidance development for C&L. He is also expert member of the UN-GHS SCE (nominated by UNITAR and UNIDO). Dr Fleig has given numerous presentations and trainings in chemicals management (C&L, risk assessment, risk management, chemicals regulations) in Europe (for the chemical and other industries and for EU Twinning projects in Asia, Australia, South America and North Africa).
- **Dr. Herman B.W.M.Koëter, Belgium, email: [herman.koeter@orangeohouse.eu](mailto:herman.koeter@orangeohouse.eu)**  
Herman Koëter is the founder and Managing Director of the Brussels based Orange House Partnership, which is a non-profit partnership organization providing scientific expertise, assistance, advice, training and interim management in the areas of food and chemical safety to the public and private sector primarily in developing countries and emerging economies. Before establishing Orange House Partnership, from 2003 through 2008 Herman Koëter held

several positions at the European Food Safety Authority (EFSA) in Parma, Italy, including Scientific Director, Deputy Executive Director and Acting Executive Director. Dr Koëter started his professional career in 1967 at the TNO Toxicology and Nutrition Institute, Zeist, the Netherlands where he held several positions before he was appointed in 1986 as Associate Head of the Department of Biological Toxicology. From 1991-2003 Herman Koëter was Principal Administrator at the Paris based OECD Environment, Health and Safety Division. There he was responsible for the Programme on Harmonization of Classification and Labelling of Chemical Substances. He was also responsible for the OECD Test Guidelines Programme, the OECD Special Activity on Endocrine Disrupters and OECD's Special Activity on Animal Welfare Policies. Dr Koëter was also senior adviser for OECD on human health hazard and risk assessment policies.

- **Dr. Jonathan Krueger, Canada, email: [jonathan.krueger@unitar.org](mailto:jonathan.krueger@unitar.org)**  
Jonathan Krueger is a Senior Specialist in the Chemicals and Waste Management programme (CWM) at the United Nations Institute for Training and Research (UNITAR). He is responsible for the joint *UNITAR/ILO Global GHS Capacity Building Programme* since 2001, including national, regional, and international activities around the world (<http://www.unitar.org/cwm/ghs>). UNITAR and ILO are the focal points in the UN system for capacity building to support GHS implementation. Jonathan holds a PhD in International Relations from the London School of Economics and Political Science (LSE) and previously covered the negotiations of the Stockholm POPs and Rotterdam PIC Convention negotiations for the *Earth Negotiations Bulletin* (ENB).
- **Dr. Iona Pratt, Ireland, email: [ipratt@fsai.ie](mailto:ipratt@fsai.ie)**  
Dr Iona Pratt is a consultant toxicologist and risk assessor, who has worked for many years in the area of assessment of hazardous chemicals under the EC legislation on classification, labelling and packaging, risk assessment and notification of new substances. She is based in Dublin, Ireland, and is self-employed, having retired from senior positions with the National Authority for Occupational Safety and Health of Ireland and the Food Safety Authority of Ireland. She has extensive experience of the Globally Harmonised System for Classification and Labelling and was chair of the ILO Working Group on Hazard Communication, responsible for developing proposals for the Hazard Communication parts of the GHS.
- **Dr. Steve Vaughan, New Zealand, email: [srv@insideoutworks.co.nz](mailto:srv@insideoutworks.co.nz)**  
Dr Vaughan is a director of a consultancy which specialises in risk management – including managing hazardous substances risk. He originally trained as a chemical engineer and worked part of his career in process research and development in the agricultural and biofuels areas before moving to central government where he managed the reform of the law, regulation, and administrative systems for the control of hazardous substances and new organisms (including genetically modified organisms) in New Zealand. The hazardous substance component of these systems was designed to implement the GHS and includes the lifecycle management of chemical risks. He represented New Zealand on a number of the committees responsible for the development of the classification scheme component of the GHS and later on other UN and World Bank bodies responsible for aspects of sustainable development. He is currently also part time Executive Director for the New Zealand Society for Risk Management and as such maintains a working interest in the international standardisation of risk management methods.
- **Pharm. Chem. Paula Viapiana, Uruguay, email: [paulavia@yahoo.com](mailto:paulavia@yahoo.com)**  
Paula Viapiana is lecturer at the Toxicology and Environmental Hygiene Department of the Faculty of Chemistry at the University of the Republic, Montevideo, Uruguay. Her current area of research is environmental and occupational toxicology. She is also Chief Environmental Health and Safety at Adium Pharma, a pharmaceutical industry. Prior to her current positions she was Quality Inspector at the Ministry of Health and Private Consultant on good manufacture practices (GMP). She has extensive experience in Environmental issues, Quality Assurance and Occupational Health and Safety.