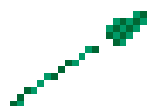




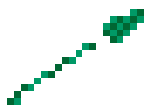
annual report 1998



EUROPEAN CENTRE FOR ECOTOXICOLOGY AND TOXICOLOGY OF CHEMICALS

ecetoc

in brief



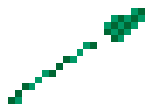
ECETOC (European Centre for Ecotoxicology and Toxicology of Chemicals), was established in 1978 as a scientific, non-commercial association; it is financed by over fifty companies with interests in the manufacture and use of chemicals.

The main objective of our activities is to identify, evaluate and minimise any potentially adverse effects on health and the environment which might arise from the manufacture and use of chemicals.

To meet this objective, we facilitate the networking of suitably-qualified scientists from our member companies. The output of our activities is usually in the form of technical reports and monographs reflecting the up-to-date state of the science for the issue under review.

An internal peer-review process has ensured that we have earned recognition and respect by external bodies for scientific integrity. We have become a valued partner with many other organisations and regulatory bodies, such as the WHO (IPCS) and the European Commission, in establishing a scientific foundation for the development of legislation on chemicals.

Message from the Chairman



✔ Achievements

Throughout 1998 ECETOC has continued to play a prominent and meaningful role in addressing the key health and environmental issues facing the industry, aiding the industry in demonstrating its commitment to the responsible management of chemicals. The success of this work is reflected not only in the traditional output of reports, publications and symposia, but also in the growing proportion of activities effected through demand-led partnerships with other organisations, inside and outside industry.

Examples of such collaborative exercises underway in 1998 include:

- ✔ Participation of ECETOC in European Commission (EC) working groups for improving and further developing the European System for the Evaluation of Substances (EUSES)
- ✔ Participation of ECETOC scientists in various joint activities with leading researchers, scientists in academia, regulatory groups and other industry groups to address the issue of endocrine disrupters
- ✔ Assisting certain CEFIC Sector Groups by developing peer-reviewed hazard assessments of products (e.g. DODMAC, Monochloroacetic acid);
- ✔ Participation of ECETOC, on behalf of CEFIC and European industry, in the development and implementation of the chemical industry's Long-range Research Initiative (LRI)

These collaborations are examples of the success that is achievable through the

networking of scientists from ECETOC member companies and scientists in academia and other areas. It is essential that such partnerships become even more common in future if the best use is to be made of the increasingly scarce specialist resources in the field of toxicology and ecotoxicology.

Until now, it has been possible for ECETOC to respond effectively to demands from other organisations, such as CEFIC, without diminishing the output from ECETOC's traditional programme of activities. However, in the last few months of 1998, extra effort from specialists in our member companies was called for to meet the demands of the LRI programme. This was achieved only at the expense of other Task Force activities.

This brought home to us the reality of the warnings we have been giving for the last few years that the reductions in the number of specialists within industry would sooner or later impair our ability to cope with the increasing demand.

✔ New demands

Against this background, there have been recent developments which herald the prospect of even greater demands arising in the near future, namely:

- ✔ *EC Risk Assessment of Existing Substances (Council Regulation EEC, 793/93).*

In response to the widely-expressed concern over lack of progress in implementing this regulation, CEFIC, on behalf of industry, has committed to undertake hazard assessment and initial risk assessment at a greatly

accelerated rate. CEFIC plans to initiate this programme in 1999.

✔ *Global (ICCA/CEFIC) OECD-SIDS Programme.*

Led by CEFIC, European industry is committed to participating in this voluntary programme for generating the data necessary to complete the Screening Information Data Sets (SIDS) for around 1000 substances by 2004.

These new, ambitious, proactive, proposals on the part of the industry, taken together with those already made in the LRI, represent an unprecedented magnitude of demand for specialists skills. Nevertheless, we are convinced of the critical importance to the industry of ECETOC's role in underpinning the scientific credibility of these new initiatives and have resolved to take action to augment our capacity to respond.

✔ **The Challenge of Change**

A review of ECETOC's strategy was initiated in 1996 leading to a formal survey of internal customers' needs carried out during the first half of 1998. Over two thirds of member companies responded to this survey. It was gratifying to note that in general, members were satisfied with ECETOC's work programme, with a strong rating being given for the organisation's scientific integrity and credibility. Nevertheless, a number of shortcomings were highlighted and suggestions made for improvement. These messages were reviewed by the Board in the context of the escalating demands to support the new, ambitious industry programmes, and built in to the development of proposals for reinforcing the Association.

It is anticipated that the Association's profile will evolve to meet the challenges ahead. In particular the aim is to heighten visibility and access and to increase proactivity and speed of response to industry needs (e.g. HPV SDS). It is further anticipated that there will be more involvement in research areas and, through exploitation of improved information technology systems, ECETOC will become better able to make more efficient and effective use of dwindling specialist resources.

The delivery of these objectives will require financial investment, but, above all, the continuing commitment and support from our member companies and their specialist staff.

✔ **Acknowledgements**

The main achievements of ECETOC during 1998 are described in more detail in the following pages of this report. We are indebted to the scientists from our member companies, as well as those from other organisations, who contributed to the successful output of our activities.

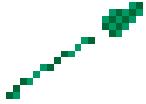
Thanks are also extended to the Secretariat for its pivotal role in facilitating the teamwork responsible for this success.

J.J. Van de Berg

JJ Van de Berg
Chairman,
ECETOC Board of Directors



board of directors



Drs. D.Wagnière (Novartis) and J.W. Histon (ICI) had resigned their seats on the Board following their retirement from their companies at the end of 1997.

At the Annual General Meeting on 13 May 1998, Dr. C. Mancel (Procter & Gamble), Dr. H. Schiff (Novo Nordisk) and Dr. H. Langballe (Norsk Hydro) were re-elected to the Board following expiry of their 2-year mandates.

Two new members, namely Mr. D. Hyde (Zeneca) and Dr. K. Eigenmann (Novartis) were also elected to the Board at the Annual General Meeting.

The Board composition as of 31 December 1998 was:

CHAIRMAN

Mr. J.J. Van de Berg	Solvay
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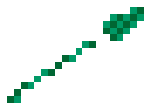
VICE-CHAIRMAN AND TREASURER

Dr. C.P. Mancel	Procter & Gamble
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BOARD MEMBERS

Ir. C. Bronke	DSM
Dr. K. Eigenmann	Novartis
Mr. D. Hyde	Zeneca
Mr. H. Langballe	Norsk Hydro
Mr. A. Perroy	Rhône-Poulenc
Dr. J. Rudolph	Hüls
Dr. E. Schiff	Novo Nordisk

Scientific Committee



The Scientific Committee Chairman is appointed by the Board for a period of three years, renewable indefinitely at the discretion of the Board. Ordinary members are appointed by the Board for a period of four years, renewable for a further four years.

Mr. H. De Henau (Procter & Gamble) resigned from the Scientific Committee in February followed by Dr. H. Verschuuren (Dow Europe) in June 1998.

Dr. C. Braun (Akzo Nobel) and Dr. T. Feijtel (Procter & Gamble) were appointed to the Scientific Committee in June 1998.

Six meetings of the Scientific Committee were held during the year.

The composition of the Scientific Committee as of 31 December 1998 was:

CHAIRMAN

Dr. W. Tordoir Shell International

VICE CHAIRMAN

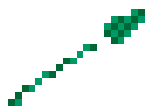
To be appointed

MEMBERS

Dr. O. Boeckman	Norsk Hydro
Dr. C. Braun	Akzo Nobel
Dr. N. Carmichael	Rhône-Poulenc
Dr. C. d'Hondt	Novartis
Dr. T. Feijtel	Procter & Gamble
Dr. B. Hildebrand	BASF
Dr. J. Jackson	Monsanto Europe
Prof. E. Löser	Bayer
Dr. R. Millischer	Elf Atochem
Dr. G. Randall	Zeneca
Dr. A. Sarrif	Du Pont de Nemours
Dr. J. Solbé	Unilever
Dr. H. Wiegand	Hüls



Scientific Committee and Secretariat at December meeting, 1998



the Secretary General's Report

LONG-RANGE HEALTH AND ENVIRONMENTAL RESEARCH INITIATIVE (LRI)

Initiated in 1996 by CMA and CIIT to define and direct a strategic research programme on the generic health and environmental issues that could evolve into major concerns or threats to the chemical industry, LRI grew to incorporate participation of both the European (under the auspices of CEFIC) and Japanese chemical industries.

ECETOC was commissioned by CEFIC in June 1997 to ensure appropriate and effective input to the programme by European scientists. The focus of effort in 1997 was directed towards the development of White Papers describing the state of the science in each of the nine areas of interest, three of which were led by scientists in ECETOC teams.

At the beginning of 1998, these White Papers, containing more than 60 recommendations for action in the context of long-range health and environmental research, were published.

In May, the process for prioritising the research topics in Europe began at a CEFIC workshop in Frankfurt and was assisted by input from ECETOC scientists. Further refinement the prioritisation was completed by CEFIC in a formal survey of its membership.

The following specific research areas were assigned the highest priorities:

Environmental and human exposure assessment

- ✓ Environmental fate and behaviour models; Characterisation of workplace and consumer exposure.

Risk assessment methodologies

- ✓ Marine risk assessment;
- ✓ Tiered approach to human risk assessment.

Chemical carcinogenesis

- ✓ Furthering the basis for interspecies comparisons;
- ✓ Development of accurate, fast and economic models for identifying potential carcinogens.

Endocrine disruption

- ✓ Programme already defined and underway under the management of CEFIC.

Ecosystems dynamics

- ✓ Significance of persistence, bioavailability and bioaccumulation for risk assessment.

Neurotoxicity

- ✓ Standardised objective tests linking assessments between animals and humans.

Respiratory toxicity

- ✓ Improved animal models for asthma and respiratory hypersensitivity.

Immunotoxicity and allergy

- ✓ Methods for identifying chemicals inducing autoimmune response and disease, characterisation of mechanistic basis for chemical respiratory allergy and development of methods for measuring relative potency of skin sensitising chemicals.

ECETOC was asked to draw up more-detailed specifications of the research projects capable of meeting the objectives of the above prioritised issues. This was accomplished through the establishment of Technical Issue Panels (TIPs) comprising scientists nominated by ECETOC member companies.

In all, five ECETOC TIPs were established to deal with all but the endocrine disruption research areas or themes:

- ✔ Environmental Exposure Assessment
- ✔ Marine Risk Assessment and Ecosystems Dynamics
- ✔ Human Exposure and Tiered Risk Assessment
- ✔ Chemical Carcinogenesis and Neurotoxicity
- ✔ Respiratory Toxicology and Immunotoxicology

The outcome of the TIPs was prepared in the form of requests for research proposals (RfPs) and by the end of 1998 a range of around 25 RfPs had been delivered that could form the basis of the first three years of research.

ECETOC with its established credibility and scientific integrity continues to fulfil a unique and important role in the on-going commitment of the European chemical industry in advancing the LRI.

RELATIONSHIPS WITH OTHER ORGANISATIONS

✔ European Commission - DGV

The Occupational Health and Hygiene section of DGV has established an ongoing programme to derive occupational exposure limits (OELs) for a wide range of substances. The process employed for generating these limits involves the review of relevant data by a scientific expert group now termed SCOEL (Scientific Committee Group on Exposure Limits). For some time SCOEL has been developing so-called Key Documentation to set out the principles for exposure limit setting in Europe.

A workshop organised by DGV on Methodology for the Derivation of Occupational Exposure Limits: Key Documentation, was held in Luxembourg on 16 June 1998. The purpose of the workshop was to introduce and discuss the draft key documents that will serve as guidelines for members of SCOEL. Dr. W. Tordoir (Shell International) represented ECETOC at the workshop.

✔ European Commission - DG XI

Second Workshop on Framework for Sustainable Use of Plant Protection Products in the EU, Brussels, 12-14 May 1998. Drs. N. Carmichael (Rhône Poulenc) and D. Riley (Zeneca) represented ECETOC.

✔ European Commission - Joint Research Centre/European Chemicals Bureau

ECETOC's interaction with ECB is mainly in the context of participation in the Technical Meetings held to progress EC Regulation (793/93) on the Risk Assessment of Existing Substances. ECETOC's input is confined to generic rather than compound-specific aspects; it is underpinned by liaison with the ECETOC Task Forces who are developing further the methodologies of risk assessment.

ECETOC representation at ECB meetings included the following:

- ✔ Dr. Bias (BASF) at an ad hoc meeting on micro-organisms in sewage treatment plants/production.
- ✔ Dr. S.Webb (Procter & Gamble) at an ad hoc sub-group meeting on sediment testing
- ✔ Dr. Lally (Procter & Gamble) on the Steering Group to develop a workshop on margins of safety (MOS) and their use in risk assessment.
- ✔ Drs.K.Romijn (Rhône-Poulenc) at a workshop on the development of classification criteria for the terrestrial environment,Madrid, November 1998.
- ✔ Dr. R.Schröder (Henkel) on the EUSES Working Group

✔ European Commission - ECVAM

ECVAM was established in 1992 in response to Article 23 of Directive 86/609/EEC , with the goal of promoting the scientific and regulatory acceptance of alternative methods which were of importance to the biosciences and which reduced, refined or replaced the use of laboratory animals. The aims of ECVAM are wide-ranging and not solely related to toxicity testing although to date activity has focused on that area.

During 1998,ECETOC continued to be represented by Dr. P.Botham (Zeneca) on the Advisory Scientific Committee (ESAC).

Specific contributions from the ECETOC Task Force programme included the publication of Technical Report No 48 (2) "Eye irritation: Reference Chemicals Data Bank" and advice from the Reproductive Toxicity Task Force on the reference compounds for validation of alternative tests on developmental toxicity.

✔ European Commission - DG XII

✔ *European Dermal Exposure Network*

This is a thematic network supported by the Commission under the SMT 4th Action Programme. It commenced in October 1996 and will conclude in October 1999. A major role has been the facilitation of interchange between experts in the fields of 'Skin and Surface Contamination','Percutaneous Penetration','Biological Monitoring' and 'Risk Assessment'. For this purpose, four working groups meet twice a year ;there are many informal contacts and annual plenary meetings.

Principal deliverables of the network will be a preliminary method for workplace risk assessments, research proposals for submission under the 5th action programme and a technology transfer programme.

A small ad-hoc group of representatives of ECETOC member companies has participated in each workgroup and a member of the Scientific Committee has additionally participated in the Network Steering Committee.



ECETOC continued to maintain close, co-operative links with OECD and its on-going programme of activities in relation to test-method development (toxicology and ecotoxicology) and risk assessment. Input from ECETOC is made through the consultation process established by OECD in respect of the Test Guidelines programme, both in terms of submission of written comment and in the nomination of suitably qualified experts to serve on the working groups.

During 1998, ECETOC member companies were invited to comment on a wide range of topics and proposed Test Guidelines, including the following:

Guideline 414 (update): Prenatal Developmental Toxicity

Guideline: Performance of Out-door Monolith Lysimeter Studies

Guidance Notes: Analysis and Evaluation of Repeat-dose Toxicity Studies

Guideline: Fish, Juvenile Growth Test

Guideline: Sediment Dwelling Organisms Toxicity Testing

Guideline 117 (update): Partition Coefficient (HPLC method)

Guideline: Estimation of the Adsorption Coefficient (K_{oc}) on Soil and on Sewage Sludge using HPLC

Guideline: Aerobic and Anaerobic Transformation in Soil

Guideline: Aerobic and Anaerobic Transformation in Water-Sediment Systems

Guideline: 426 Developmental Neurotoxicity

In addition:

Drs. P. Botham (Zeneca) and S. Allen (Zeneca) represented ECETOC and Zeneca at an OECD consultation meeting on acute oral toxicity, Arlington, USA, 22-24 March 1998.

Drs. G. Krinke (Novartis) and W. Classen (Novartis) represented ECETOC at a consultation meeting on the Neurotoxicity Guidance Document, Ottawa, Canada, on 30-31 March and 1 April 1998.

Dr. Rufli (Novartis) represented ECETOC on a Working Group to develop a Guidance Document on Aquatic Toxicity Testing of Difficult Substances, Paris, France, on 2-3 April 1998.

Dr. P. Botham (Zeneca) represented ECETOC and the UK at an OECD nominated experts meeting on Mammalian Acute Toxicity Testing, Rome, Italy, on 27-28 April 1998.

Mr. M.Holt (ECETOC), Dr. J Kinnunen (Neste), Dr. K. Fox (Unilever) and Dr. Schröder (Henkel) represented ECETOC at an OECD workshop on Improving the Use of Monitoring Data in the Exposure Assessment of Industrial Chemicals, Berlin, Germany, on 13-15 May 1998.

Dr. Jde Gerlache (Solvay) represented ECETOC at a special session on Acute Exposure Guideline Levels (AEGLs) held during the 8th Working Group meeting on Chemical Accidents, Paris, France, on 4-6 December 1998.

Drs. J.Ashby and T. Hutchinson (Zeneca) represented ECETOC on the on-going joint NCM/RAAB OECD Working Group on Endocrine Disruptors Testing and Assessment.

Drs. A.Sarrif (DuPont) and D. Basketter (Unilever) represented ECETOC on the on-going BIA Task Force on OECD Harmonisation of Classification and Labelling.

✔ United Nations Environment Programme

✔ *UNEP Criteria Expert Group (CEG) meeting, Bangkok, October 1998*

Dr J.M. Libre (Elf Atochem), chairman of the ECETOC Persistent Organic Pollutants (POPs) Task Force was invited to represent ECETOC at the above (inaugural) meeting towards reaching consensus on scientific criteria for nominating candidate POPs.

✔ World Health Organization

In 1996 ECETOC was admitted into official relations with the World Health Organization (WHO) as a Non-Governmental Organisation (NGO).

This public acknowledgement of the fact that both organisations share the goal of protecting health and the environment from the adverse effects of chemicals was earned as a result of many years of close collaboration between ECETOC and various WHO bodies, notably IPCS.

✔ International Programme on Chemical Safety (IPCS)

ECETOC continues to work closely with the IPCS in its various programme areas. As with all ECETOC representation in external meetings, selection of suitably qualified and experienced scientists is through a procedure which involves the Scientific Committee. Where possible such representation is undertaken by the Chairman or member of an ECETOC Task Force that has been dealing with the topic in question. However, in all cases the importance of maintaining ECETOC's scientific integrity through such participation is emphasised in briefings before the event.

ECETOC was represented by the Secretary General at the IPCS Programme Advisory Committee meeting, Berlin, 5-8 October 1998.

✔ *IPCS Environmental Health Criteria Document (EHC) Programme*

ECETOC provides comments and data in the consultation phase of the development of IPCS EHC documents. During 1998 comment was provided on:

nonylphenol and nonylphenol ethoxylates; vinyl chloride; disinfectants and disinfectant by-products.

Following the consultation phase in most cases ECETOC members provide a specialist representative to participate as an observer in the IPCS Task Group meeting to finalise the EHC. During 1998, ECETOC participation in the EHC programme included:

Principles and Methods for Assessing the Risks from Exposure to Essential Trace Elements: IPCS Working Group meeting, Chile, on 27 April-1 May 1998. Dr. J. Coughlin (sponsored by Borax) represented ECETOC.

Re-evaluation of the TDI for 2,3,7,8-Tetrachlorodibenzodioxan: IPCS/WHO Joint Meeting, Geneva, on 25-29 May 1998. Dr. de Gerlache (Solvay) represented ECETOC and Eurochlor.

Disinfectants and Disinfectant By-products: Task Group meeting, Geneva, on 17-21 August 1998. Dr. N. Drouot (Elf Atochem) represented ECETOC.

Methodology for Risk Assessment: IPCS Consultation, Hanover, on 1-2 October 1998. Dr. Isnard (Rhône-Poulenc) represented ECETOC.

▼ *IPCS Concise International Chemical Assessment Documents (CICADs) Programme*

IPCS launched this series of chemical assessments in 1996. The purpose of the documents is to accelerate the progress of the review of chemicals within the IPCS programme through a process designed to minimise the effort required compared with the EHC programme. A format has been

proposed to achieve this, in which the review is more focused on the defined lead effects of the chemicals.

The utilisation of existing reviews from reliable sources, such as those produced by regulatory authorities, results in a further saving of resources.

ECETOC is involved in the initial consultation and review of draft CICADs and, with experts from academia and national authorities, participates in the final review board and Steering Group meetings.

During 1998, ECETOC participation in the CICAD programme included:

4th Steering Group meeting for CICADs, Hanover, 28-30 September 1998. Dr. F. Carpanini represented ECETOC.

▼ *Intergovernmental Forum on Chemical Safety (IFCS)*

Dr. F. Carpanini represented ECETOC at the 3rd Intersessional Group meeting, Japan, on 1-4 December 1998. The goal of the meeting, which brought together participants representing 46 countries, Intergovernmental Organisations, United Nations agencies as well as industry and public-interest NGOs, was to progress initiatives towards meeting the targets set by action Agenda 21 of UNCED for the environmentally sound management of toxic chemicals.

✔ International Agency for Research on Cancer (IARC)

ECETOC has a long-standing relationship with IARC, receiving an invitation to nominate observers at ad hoc meetings of experts convened to evaluate specific chemicals in respect of their carcinogenicity to man. During 1998 ECETOC experts participated as follows:

- ✔ Evaluation of Carcinogenic Risks to Humans: Volume 71 - Re-evaluation of Some Industrial Chemicals: IARC Working Group meeting, Lyon, on 17-24 February 1998. Drs. T. Green (Zeneca) and Dr. P. Gelbke (BASF) were appointed as the ECETOC observers.
- ✔ Evaluation or Re-evaluation of Some Agents which Target Specific Organs in Rodent Bioassays: IARC Working Group meeting, Lyon, on 13-20 October 1998. Dr. J. Foster (Zeneca) was appointed as the ECETOC observer.

PRESENTATIONS

✔ The International Union of Toxicology (IUTOX) International Congress of Toxicology (ICT) VIII, Paris, France, 5-9 July 1998

The EUROTOX Symposium on Risk Assessment held on 8 July at the ICT VIII meeting in Paris was co-sponsored by ECETOC and the European Commission, European Chemicals Bureau. Dr. Tordoir, Shell International and Chairman of the Scientific Committee, co-chaired the Symposium with Professor Dybing on behalf of EUROTOX and Dr. Rico on behalf of the French Society of Toxicology. Presentations were given by scientists from ECETOC member companies, namely Drs. N. Fedtke (Hüls), R. Schröder (Henkel) and C. Lally (Procter & Gamble) on assessment factors in human health risk assessment, environmental exposure estimation as a key element in risk assessment and consumer exposure estimation in risk assessment, respectively. The programme also included views on risk assessment from the regulatory authorities and academia.

✔ EEMS-ECETOC Symposium on Threshold-Mediated Mechanisms in Mutagenesis (Salzburg, 7 September 1998)

The Symposium, jointly organised by ECETOC and the European Environmental Mutagen Society (EEMS), was successful with more than 250 participants from academia, government and industry attending. The presentations dealt with topics of thresholds in carcinogenesis and mutagenesis, in particular genotoxic mechanisms

which may have threshold dose responses such as oxidative damage, aneuploidy and metabolic overload; study design and regulatory practices were also discussed.

Presentations on behalf of the ECETOC Task Force were given by Dr.A.Sarrif (DuPont), Prof. M.Kirsch-Volders (Vrije Universiteit Brussel) and Dr. L.Henderson (Unilever).

The outcome of the Symposium is to be published as a special issue of Mutation Research in 1999;co-edited by Prof. J Parry, (University of Wales,Swansea) and Dr.A.Sarrif (DuPont).

✔ SETAC Europe 8th Annual meeting, Bordeaux, 14-18 April 1998

Three platform and five poster presentations describing advances made in the GREAT-ER (Geography-referenced Exposure Assessment Tool for European Rivers) project were given. Dr. K. Fox (Unilever) presented the results of 'in stream' removal studies carried out in conjunction with the UK Environment Agency as part of the model validation process, Dr. T. Feijtel (Procter & Gamble) presented a general overview of the project and Mr. A.Young (Institute of Hydrology, UK) outlined the development of hydrological models for use in regional and local exposure assessment methodologies.

A poster presentation was given by Drs. C. Romijn (Rhône-Poulenc) S. Marshall (Unilever) and other members of the Task Force on Terrestrial (Soil) Hazard Classification proposing scientific criteria on which a terrestrial hazard based classification scheme might be based. Much of the discussion centred on the role of

bioaccumulation,metabolism, persistence, standardisation and the use of read-across from aquatic data.

✔ ILSI Europe Workshop on Assessing Health Risks from Environmental Exposure to Chemicals: The Example of Drinking Water, Munich, Germany.

Mr. M.Holt (ECETOC) gave a presentation on 'Routes of Chemicals into Drinking Water', reviewing the impact of industrialisation, urbanisation and intensified agricultural activity on the release of chemicals into the aquatic environment.The goals of the workshop were: to examine the quality of the assumptions and methods conventionally employed to evaluate the risks to man of chemicals in drinking water ; to discuss ways in which the risks of toxic endpoints are assessed,the use of predictive exposure and risk assessment modelling;and to review the use of epidemiological studies to validate predictions.

PUBLICATIONS

The following ECETOC reports were published in 1998

No.	TECHNICAL REPORTS
74	QSARs in the Assessment of the Environmental Fate and Effects of Chemicals
48(2)	Eye Irritation:Reference Chemicals Data Bank (Second Edition)
75	Organophosphorus Pesticides and Long-term Effects on the Nervous System
No.	JOINT ASSESSMENT OF COMMODITY CHEMICALS (JACC) REPORT
37	Methyl Acrylate (CASNo. 96-33-3)
No.	SPECIAL REPORTS
14	n-Butyl Methacrylate;Isobutyl Methacrylate OEL Criteria Document
15	Examination of a Proposed Skin Notation Strategy
No.	DOCUMENTS
38	Wildlife and Endocrine Disrupters:Requirements for Hazard Identification
1	ECETOC ED Newsletter

EXTERNAL PUBLICATIONS

Wildlife and Endocrine Disrupters:Requirements for Hazard Identification.Campbell, P.and Hutchinson,T. (1998). Environ Tox Chem, 17,127-135

Development of a Geographically-referenced Regional Assessment Tool for European Rivers - GREAT-ER. Feijtel,T. et al (1998).JHaz Mat, 210,255-270

UK Monitoring Study on the Removal of Linear Alkylbenzene Sulphonate in Trickling Filter Type Sewage Treatment Plants.Holt,M. et al (1998).Sci Total Environ,255-270.

Analysis of the ECETOC aquatic toxicity (EAT) database. I - General Introduction. Solbe,J et al (1998).Chemosphere 36,99-113.

Analysis of the ECETOC aquatic toxicity (EAT) database. II – Comparison of acute and chronic toxicities of chemical substances to aquatic organisms.Lange, R.et al (1998). Chemosphere 36,115-127.

Analysis of the ECETOC aquatic toxicity (EAT) database. III – Comparative toxicity of chemical substances to different life stages of aquatic organisms. Hutchinson, T.H. et al (1998). Chemosphere 36,129-142.

Analysis of the ECETOC aquatic toxicity (EAT) database. IV - Comparative toxicity of chemical substances to freshwater versus saltwater organisms. Hutchinson, T.H. et al (1998). Chemosphere 36,143-153.

Analysis of the ECETOC aquatic toxicity (EAT) database. V – The relevance of *Daphnia magna* as a representative test species. Mark, U. and Solbe, J (1998). Chemosphere 36,155-166.

Aquatic toxicity testing of sparingly soluble, volatile and unstable substances and interpretation and use of data. Rufli, H. et al (1998). Ecotox. Environ. Saf. 39, 72-77.

A regionally applicable model for estimating flow velocity at ungauged river sites in the UK - GREAT-ER # 4. Round, C.E. et al (1998). Water Environ. Management 12, 402-405.

Scientific Committee meeting at Norsk Hydro

A meeting of the ECETOC Scientific Committee (SC) was hosted by Norsk Hydro in Oslo in June 1998.

On the day prior to the meeting members of the SC visited the Marine Research Station Solbergstrand.

The research station, which is situated near Drobak Sound, Oslofjord, was established in 1978 and is

owned by the Norwegian Institute for Water Research (NIVA). NIVA is an independent research institute studying problems related to marine and freshwater environments, water resource management, aquaculture and engineering aspects of waste water and drinking water. The station offers contract research facilities for marine ecology. Experiments can be performed in 'mesocosms', either rocky shore communities estab-

hed in basins on land, subtidal soft sediment communities transplanted from field to basin or in situ. NIVA also offers access to research vessels. The majority of the research projects are carried out jointly by NIVA and the University of Oslo.

Following a presentation by Mr. M. Holt describing the progress of the GREAT-ER project and the activities of

the ECETOC environmental Task Forces, the Research Station Director and his staff described the various programmes of research which were underway at the station. This was followed by a tour of the Research station enabling members of the SC to see at first hand the facilities and some of the experimental work in progress.



SC member Dr. J. Jackson with Chairman Dr. W. Tordoir



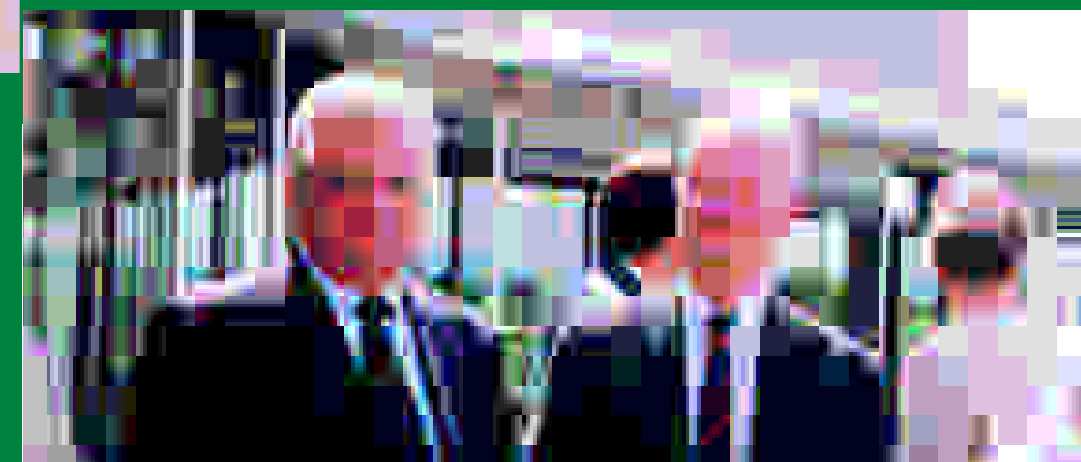
▲ SC members, Dr. N. Carmichael and Dr. H. J. Wiegand with Secretary General Dr. F. Carpanini (centre)

◀ SC members Dr. N. Carmichael, Dr. C. d'Hondt, Dr. H. Verschuuren and Dr. G. Randall

▶ ECETOC Board member, Mr. H. Langballe with SC member Dr. O. Boeckman, both of Norsk Hydro



SC members and NIVA scientists inspect a 'mesocosm'



TASK FORCES

➤ New Task Forces

During the year new Task Forces were established in relation to the following issues:

➤ *Adverse versus Non-adverse Effects (Toxicological End-points)*

This Task Force has been appointed by the Scientific Committee as one of a number addressing the issues identified at the joint ECETOC/CEFIC Risk Assessment Seminar.

Fundamental to the process of hazard assessment is the identification of adverse effects of the agent being evaluated and the exposure (dose) levels at which those effects are no longer observed. Distinguishing between those observed effects which are adverse and those which are not (e.g. reversible, adaptive changes in certain organs) is a critical part of the exercise and it is this aspect for which guidance is required.

In developing its guidance, the Task Force will aim to clarify the process for evaluating toxicological data and thereby foster more-consistent determination of effects which are adverse and the no-observed-adverse-effect levels (NOAELs) derived therefrom.

➤ *DODMAC/DHTDMAC Risk Assessment*

Voluntary agreements (NL, D, PARCOM) made since 1980 to phase out Dihydrogenated Tallow Dimethyl Ammonium Chloride (DHTDMAC) as a raw material for the manufacture of softeners have neither been based on evidence for its unsafe use nor on the outcome of a risk

assessment conducted to accepted scientific principles. The risks posed by DODMAC (Dimethyl Dioctadecyl Ammonium Chloride, a major part of the technical mixture called DHTDMAC) were being assessed under the framework of the existing substances regulation (793/93/EC) with Germany as rapporteur. Interested member companies proposed that a shadow risk assessment be prepared as an example of how to deal with poorly soluble, highly sorptive substances. The Scientific Committee agreed to commission a Task Force to prepare a comprehensive environmental and human health risk assessment in accordance with EU Technical Guidance Documents as applied for production, formulation and use. It was considered essential to include a sensitivity analysis of the key data and assumptions influencing the risk characterisation. If possible, the risk characterisation is to be extended to other geographical areas where DHTDMAC is produced and/or used.

➤ *Marine Risk Assessment*

A number of schemes exist for environmental risk assessment of chemicals (e.g. EU Technical Guidance for assessment of new and existing chemicals, OECD guidance for assessment of high production volume (HPV) chemicals). These schemes are aimed primarily at the terrestrial and freshwater environments. The need to extend the scope of risk assessment processes to include marine environments was highlighted at a ECETOC/CEFIC workshop on risk assessment.

Although several schemes have been developed in relation to specific marine environments, in particular the discharges from offshore oil installations, there is a lack of more generally applicable approaches. The OSPAR Hazardous

Substances Strategy has recognised this omission and has assigned urgent priority to the development of a framework for risk assessment for marine environments.

A Task Force was appointed by the Scientific Committee to identify how the risk assessment of chemicals in marine environments should differ from established procedures for the freshwater environment and to propose a scheme for marine risk assessment incorporating relevant elements of existing procedures, specifying appropriate extrapolations and modifications.

✔ *Persistent Organic Pollutants (POPs)*

Under the UNEP Global Programme of Action for the Protection of the Marine Environment from Land Based Activities (1995), POPs were defined as "a set of organic compounds that: (i) possess toxic characteristics, (ii) are persistent, (iii) are liable to bioaccumulate, (iv) are prone to long-range transport and deposition, and (v) can result in adverse environmental and human health effects at locations near and far from their source". Twelve such chemicals have been specified, in UNEP Governing Council Decision 19/13, for international action as persistent organic pollutants. Various international bodies, including UNECE, UNEP, IOMC, IPCS and IFCS are working on schemes designed to identify additional potential candidate POPs.

The Scientific Committee, recognising the need to use science-based criteria in the process for identifying candidate POPs, appointed a Task Force to develop such criteria particularly in terms of long-range transport, persistence and bioaccumulation and to recommend a process for a science-based risk assessment.

✔ *Risk Assessment Factors*

This Task Force was one of those commissioned during 1998 to respond to the needs identified by industry at the joint ECETOC/CEFIC Joint Seminar on Risk Assessment in April 1997. Strong concern was expressed over the fact that many national authorities were using excessively large safety factors, for example in setting occupational exposure limits. This conservative approach was perceived to be unnecessarily restrictive, leading to proposals for unrealistic exposure limits.

The agreed objectives of the Task Force include identification and review of current and emerging approaches for developing assessment factors used in deriving human occupational and non-occupational exposure levels. In this review, account will be taken of the criteria formulated in ECETOC Technical Report No. 68, which will be revised to provide improved guidance for risk assessment with particular reference to European legislation.

✔ *Tetrafluoroethylene and Hexafluoropropylene*

At the request of interested member companies and the European Fluorocarbon Technical Committee (EFTC), the Scientific Committee agreed to appoint a Task Force to prepare a JACC report on Tetrafluoroethylene (TFE) and Hexafluoropropylene (HFP). The objective is to prepare a comprehensive review and (eco)toxicological hazard assessment and prepare a basis for EU classification and for setting an OEL. Results from the latest (ongoing) experimental studies are to be included when they become available.

✓ *Synthetic Amorphous Silica*

During a recent review of various forms of silica by the International Agency for Research on Cancer (IARC Monograph No. 68, 1997), it became clear that a comprehensive review of all available data on synthetic amorphous silica was lacking. At the request of interested member companies, supported by the Association of Synthetic Amorphous Silica Producers (ASASP), the Scientific Committee decided to establish a Task Force to prepare a JACC report and prepare a basis for setting an occupational exposure limit (OEL). In its review, the Task Force will consider comparison of the biological effects of amorphous and crystalline silica, and comment on the importance of particle size as a factor in their toxicity.

with respect to the risk assessment process. Further progress on the development of the broader network will be actioned during 1999.

✓ *Network (Standing TF) on Risk Assessment*

A proposal to set up a Standing TF to deal with the scientific issues of risk assessment had emerged both at the ECETOC-CEFIC Joint Seminar on Risk Assessment in April 1997 and at the Annual Technical Meeting. It was intended that such a group would help to provide continuity and consistency, by monitoring developments in the field and thereby assembling a collective "memory" for future reference.

It was recognised that there were considerable resource implications, both in terms of company support and of the ECETOC Secretariat, in developing and maintaining such a network if it were to be a credible resource. As a first step a core group of experienced practitioners in the risk assessment process was convened with the aim of formulating a strategy for the management and deployment of the resource

➤ Ongoing Task Forces

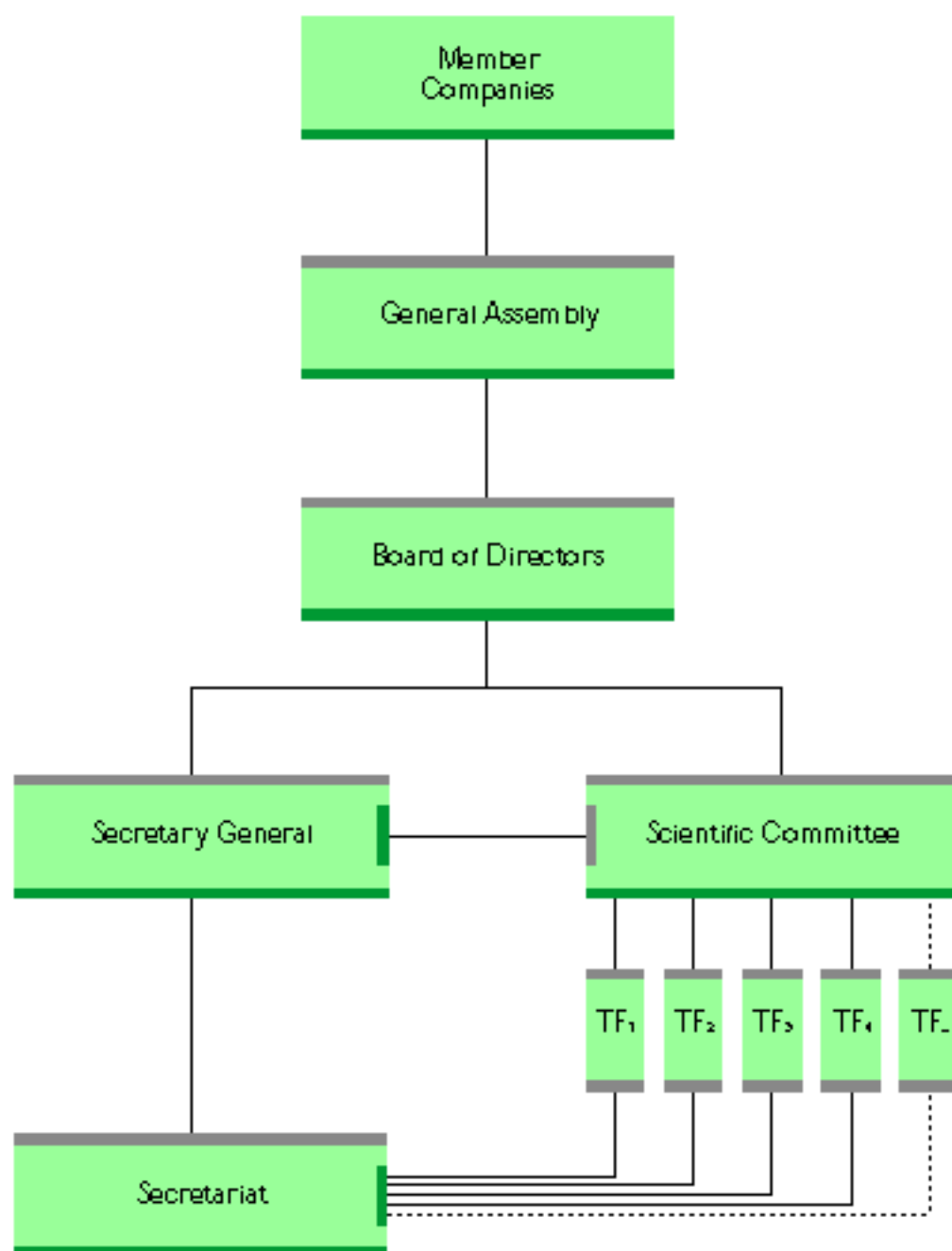
- *Toxic Effects of Dusts*
- *Toxicological Mechanisms*

In addition to work on the New Task Forces, work was progressed by the following on-going Task Forces:

- *Acrylates and Methacrylates:*
 - Methacrylates OEL Criteria Document
 - Methyl Acrylate
 - Polyfunctional Acrylates and Methacrylates
- *Aquatic Hazard Assessment II*
- *Aquatic Toxicity of Mixtures*
- *1,3-Butadiene Risk Assessment*
- *Butanols*
- *Dermal Exposure Liaison Group*
- *ECIMOS (ECETOC Integrated MOdelling System)*
- *Ecotoxicity of Borates*
- *Environmental Monitoring*
- *Environmental Oestrogens*
- *Eye Irritation - Reference Chemicals Data Bank*
- *EU Working Group EUSES 2.0*
- *Genetic Polymorphism*
- *GREAT-ER (Geography referenced Regional Exposure Assessment Tool for European Rivers)*
- *Human Data for Classification Purposes*
- *Methyl-Tertiary-Butyl Ether (MTBE)*
- *Monochloroacetic Acid and its Sodium Salt*
- *Mutagenesis :Threshold-mediated Mechanisms*
- *Organophosphorus Pesticides and Long-term Effects on the Nervous System*
- *Peracetic Acid*
- *Perchloroethylene*
- *Reproductive Toxicity*
- *Quantitative Structure Activity Relationships (QSAR) in Ecotoxicology*
- *Skin and Respiratory Sensitisers:Reference Chemicals Data Bank*
- *Skin Notification Strategy*
- *Terrestrial (Soil) Hazard Classification*
- *Terrestrial Risk Assessment*

Organisation and membership

ECETOC ORGANISATION



ECETOC MODUS OPERANDI

✔ Board

ECETOC operates under the general direction of a Board comprised of up to twelve senior executives from member companies. The Board is responsible for the overall policy and finance of the association.

✔ Scientific Committee

Crucial to the success of ECETOC in establishing and maintaining its authority and reputation as a source of sound scientific information and judgement, is its Scientific Committee. Composed of fifteen top industry scientists (mainly toxicologists, ecotoxicologists and physicians) the Committee is appointed by the ECETOC Board. Members are selected on the basis of their proven scientific expertise, thereby underpinning their role of assuring sound scientific standards and quality.

The Scientific Committee is responsible for the definition, management and peer review of the ECETOC work programme. A major part of this work programme is the production of ECETOC publications by Task Forces appointed by the Scientific Committee.

✔ Task Forces

ECETOC publications are produced by Task Forces composed of appropriate experts drawn from member companies and other organisations as required. Although all member companies have the opportunity to nominate members to the Task Forces, their final composition is subject to endorsement by the Scientific Committee, taking into account the range of skills required to

address the selected topic. The work of the Task Force follows the Terms of Reference established by the Scientific Committee and is directed by a Chairman who is appointed to the task by the Scientific Committee. Most but not all Task Force activities result in one or more ECETOC publications. The specific objectives of the other projects undertaken by Task Forces vary, and frequently involve activities with other organisations.

✔ Secretariat

The Board, Scientific Committee and Task Forces are supported and assisted in their activities by a small team of scientists with administrative support, led by the Secretary General. Further details of ECETOC staff members are given on page 25.

✔ Programme Selection

A topic for consideration by ECETOC may be proposed by any member company or any other organisation whether trade association, academia or regulatory authority. For the proposal to be progressed it must be supported by at least two member companies; in addition it must be judged to meet the scientific standards required by the Scientific Committee. Provided these criteria are met, specific Terms of Reference are drawn up and endorsed by the Scientific Committee prior to selection of Task Force members.

✔ Publications

The main output of ECETOC's Task Force activities is the publication of a range of reports varying in scope from the 'JACC (Joint Assessment of Commodity Chemicals)' reports

on specific chemicals to 'Monographs', dealing with the fundamental principles underlying the various branches of science in toxicology and ecotoxicology.

All reports are published following peer review by the Scientific Committee and copies are sent to all member companies and to other interested parties, such as the various regulatory authorities, international organisations and academic groups, for use as required.

✔ Representation

ECETOC regularly receives invitations to send representatives and observers to a variety of fora, such as the IPCS, OECD, IARC and the EU Commission groups, where the health and environmental effects of chemicals are discussed and evaluated

✔ Workshops and Seminars

Workshops and seminars are convened, often in partnership with other interested parties and groups, in order to develop and communicate understanding and counsel on the key issues affecting the responsible environmental management of chemicals.



Dr. F.M. Carpanini

ECETOC SECRETARIAT

As of December 1998 staff employed were:

- | | |
|------------------------|-----------------------------------|
| ✓ Dr. F.M. Carpanini | Secretary General |
| ✓ Ms. M. Butler | Scientific Officer |
| ✓ Mr. M. Holt | Scientific Officer |
| ✓ Ir. H. Vrijhof | Scientific Officer |
| ✓ Dr. H. J. Niessen | Scientific Officer
(part time) |
| ✓ Mrs. M. De Mesmaeker | Office Manager |
| ✓ Miss N. Devos | Secretary |
| ✓ Miss A. Ngoy | Secretary |
| ✓ Mrs. A. Sroux | Publications Officer |

ECETO C MEMBERSHIP

Member Companies at December 31st 1998 :

MEMBERS		YEAR OF JOINING	
3M	1993	HOECHST	1978
AKZO NOBEL	1978	HOFFMANN LA ROCHE	1978
ALBRIGHT & WILSON	1978	HÜLS	1978
ARCO CHEMICAL	1985	ICI	1978
AUSMONT (MONTECATINI)	1996	JANSSEN PHARMACEUTICA	1997
BASF	1978	L'OREAL	1987
BAYER	1978	LONZA	1987
BENCKISER (MIRA LANZA)	1996	MERCK	1978
BOEHRINGER INGELHEIM	1980	MONSANTO	1978
BORAX	1995	NESTLE OY	1987
BOREALIS	1994	NORSK HYDRO	1978
BP CHEMICALS	1978	NOVARTIS	1978
CIBA SPECIALITY CHEMICALS	1997	NOVO NORDISK	1991
COCA-COLA	1996	PERSTORP REGENO	1996
COLGATE-PALMOLIVE	1979	PETRESA	1987
DEGUSSA	1978	PROCTER & GAMBLE	1978
DOW CORNING	1990	RHÔNE-POULENC	1978
DOW EUROPE	1978	ROHM & HAAS	1980
DSM	1978	SHELL CHEMICALS	1978
DU PONT DENEMOURS	1990	SOLVAY	1978
ELFATOCEM	1978	STATOIL	1990
ENICHEM	1978	TH.GOLDSCHMIDT	1988
EXXON CHEMICAL	1978	UNILEVER	1978
FINA	1987	UNION CARBIDE	1995
FMC	1996	WACKER CHEMIE	1978
HENKEL	1978	ZENECA	1993

INCOME	ACTUAL 1998 BF
Subscriptions	
Full Members	56,250,000
New Members	750,000
Total Subscriptions	57,000,000
Bank interest	1,485,185
Document sales	298,508
Project-related	712,069
GRAND TOTAL	59,495,762

EXPENDITURE	ACTUAL 1998 BF
Salaries	31,921,158
Office	9,586,334
Travel	1,252,818
Meetings and consultants	3,854,659
Publications	1,734,902
Professional services	346,399
Bank charges	105,190
Capital expenditure	662,925
Miscellaneous	1,181,251
TOTAL	50,645,636

BALANCE SHEET AND RESERVES	ACTUAL 1998 BF
Balance sheet	
Income	59,495,762
Expenditure	50,645,636
Operating Margin	8,850,126
Reserves	
Opening	30,535,595
Operating Margin	8,850,126
Staff Commitments	(306,610)
Closing Reserve	39,079,111
Reserve Required	16,100,000

* The expenditure figures shown cover the administrative costs of the ECETOC offices, Secretariat and meeting arrangements. They do not take into account the costs of resources provided by Member Companies in terms of project related expenditure or the in-put of Task Force members and external representation.

Published by:
European Centre for Ecotoxicology and Toxicology of Chemicals
Av E Van Nieuwenhuysse 4, 1160 Brussels
Tel +32 2 675 36 00 Fax +32 2 675 36 25
