

ece|oc

---

annual report  
1999

---

EUROPEAN CENTRE FOR ECOTOXICOLOGY AND TOXICOLOGY OF CHEMICALS





ece|oc  

---

annual report  
1999  

---

# 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 includes Technical Reports and Monographs reflecting the current 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 World Health Organization (WHO) notably the International Programme on Chemical Safety (IPCS) and the European Commission (EC), in establishing a scientific foundation for the development of legislation on chemicals.

# Message from the Chairman

---



J.J. Van de Berg

## ▼ Achievements

As the 20th century draws to a close, we can reflect with some considerable pride on the achievements of ECETOC. Whilst serving the needs of its industrial members for some 22 years, the Association has earned and maintained a strong and widespread reputation for scientific integrity. This in turn has led to its recognition as a partner by organisations such as WHO and the EC in developing, promoting, and dispensing a better understanding of the impact of chemicals on health and the environment.

Over the years, ever-growing demands for assistance, coupled with a steadily diminishing pool of specialist expertise both inside and outside the industry, have prompted ECETOC to adapt its work programme and the way it operates.

This versatility has ensured that a productive programme of work has been maintained in the more traditional areas whilst accommodating the needs of major new ventures such as the Long-range Research Initiative (LRI).

Thus, during 1999, a fruitful ECETOC programme delivered an extensive and wide range of outputs including scientific papers and reports, the resourcing of external partnerships, organisation and sponsorship of symposia as well

as scientific support to the European Chemical Industry Council (CEFIC) LRI so that its programme of funded research could be compiled and launched.

A new strategic plan was formulated to enable ECETOC to continue to identify and address the needs and demands voiced by our member companies and by external partners. Designed to maximise the scarce specialist resources available and channel effort to tackle issues of highest priority, the plan's implementation was initiated in July.

Addressing the need for ECETOC to improve its level and range of communications both across its membership and with the outside world, a Website was developed and launched at the end of 1999. Early indications of the popularity and utility of this new medium of ECETOC activity are most encouraging and development of further features is planned.

## ▼ New Demands in Europe

In the spring of 1999, the EC announced its intention to undertake a major review towards updating the Technical Guidance Document (TGD) for the risk assessment of existing substances (Council Regulation EEC, 793/93).

The TGD was first published in 1996 following a period of development in which ECETOC scientists played a leading role on behalf of the whole industry.

Once again ECETOC is taking the initiative on behalf of the wider interests of the industry, putting in place and resourcing around 14 groups to provide input, in partnership with experts from European Union Member States, to the EC working groups. Effective networking across the industry will be established towards ensuring a consistent and common input which is, above all, scientifically robust. These extensive new demands will present a major challenge for ECETOC throughout, and probably beyond the year 2000.

In June 1999, the EU Council of Environmental Ministers issued a resolution calling for the EC to present a proposal for a new strategy on the chemicals policy by the end of 2000. The strategy is to be based on "the precautionary principle, the goal of sustainable development, environmental safety and the ability of the common market to function".

This new strategy will have major implications for the manner in which chemicals are evaluated for their health and environmental effects and consequently regulated within the EU. The role of industry will be to shoulder more responsibility for generating data and, inevitably, for their evaluation.

### ▼ The Challenge

The demands for sound-science to develop effective tools to evaluate the hazards and risks of chemicals to humans and to the environment have escalated. There are strong indications that this trend will continue.

The industry has continued to merge and re-structure and in this consolidation process it is becoming clear that the pool of specialist expertise is not only diminishing, but also becoming more diffusely located.

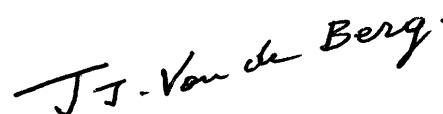
It is crucial that ECETOC finds ways in which to meet the demands of its members, and of other stakeholders, without compromising the scientific integrity for which the Association is renowned. This strikes at the very core of the *modus operandi* of our Task Forces and the Scientific Committee and for this reason the Board has commissioned an urgent review of these procedures for introduction in 2000.

### ▼ Acknowledgements

The main achievements of ECETOC during 1999 are described 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 outcome of our work programme.

In particular, I wish to acknowledge the great contribution made by Dr. Wim Tordoer (Shell International) who retired in November after over seventeen years active membership of the Scientific Committee, nine of these as Chairman. His steadying influence and commitment to the highest scientific ideals will be greatly missed.

Finally, thanks are also expressed to the Secretariat, whose support facilitated the teamwork that generated ECETOC's successful 1999.



J.J. Van de Berg  
Chairman  
ECETOC Board of Directors

# board of directors

---



Mr. A. Perroy (Rhône-Poulenc) resigned his seat on the Board with effect from 1 May 1999.

Mr. J-F. Berthiaux (Exxon Chemicals) was elected to the Board at the Annual General Meeting on 19 May 1999.

In addition, Mr. J.J. Van de Berg (Solvay), Ir. C. Bronke (DSM) and Dr. J. Rudolph (Hüls) were re-elected following expiry of their mandates.

The Board composition following the 1999 Annual General Meeting was:

## CHAIRMAN

Mr. J.J. Van de Berg Solvay

## VICE-CHAIRMAN AND TREASURER

Dr. C. Mancel Procter & Gamble

## BOARD MEMBERS

Mr. J-F. Berthiaux	Exxon Chemicals
Ir. C. Bronke	DSM
Dr. K. Eigenmann	Novartis
Mr. D. Hyde	AstraZeneca
Mr. H. Langballe	Norsk Hydro
Dr. J. Rudolph	Hüls
Dr. H. Schiff	Novo Nordisk

# Scientific Committee

---



Dr. W. Tordoir (Shell International) resigned from his position as Chairman of the Scientific Committee following retirement from his company in November 1999. Dr. O. Bøckman (Norsk Hydro) resigned from the Scientific Committee in December 1999.

Dr. L. Smith (AstraZeneca) was appointed to the Scientific Committee in February 1999.

The Scientific Committee held six meetings during the year.

The composition of the Scientific Committee in 1999 was:

## CHAIRMAN

Dr. W. Tordoir	Shell International
----------------	---------------------

## VICE-CHAIRMAN

Dr. G. Randall	AstraZeneca
----------------	-------------

## MEMBERS

Dr. O. Bøckman	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
Prof. E. Löser	Bayer
Dr. R. Millischer	Elf Atochem
Dr. A. Sarrif	DuPont de Nemours
Dr. L. Smith	AstraZeneca
Dr. J. Solbé	Unilever
Dr. H-J. Wiegand	Hüls

# Dr. Wim Tordoir - The ECETOC years 1983 – 1999

Dr. Wim Tordoir was first appointed to the ECETOC Scientific Committee early in 1983 marking the beginning of an impressive seventeen year record, serving first as a member until mid 1990 and then as Chairman until his retirement from Shell International at the end of November 1999.

Dr. Tordoir participated in the peer review of more than 150 of the major ECETOC reports (23 Monographs, 75 Technical Reports, 38 Joint Assessment of Commodity Chemicals (JACC) Reports and 16 Special Reports) as well as more than 20 Documents, position papers and many external publications. More than half of this total he has overseen as Chairman of the Scientific Committee, a position to which he was appointed on 1 July 1990.

By the time of his retirement, Dr. Tordoir had chaired more than 50 meetings of the Scientific Committee. In addition, he had chaired or co-chaired, many of the ECETOC technical meetings, symposia and workshops – some jointly with other organisations – addressing many major emerging issues such as endocrine disruption and sensitive sub-populations.

In addition to these new challenges for the industry, several important milestones were attained by ECETOC during Dr. Tordoir's Chairmanship of the

Scientific Committee. These included the establishment of a recognised partnership with such external organisations as the International Agency for Research on Cancer (IARC), the EC and the WHO.

Within industry, ECETOC's relationship with CEFIC and other such associations has grown much stronger over recent years, culminating in the alliances formed under LRI. Dr. Tordoir played an important part in these achievements, demonstrating his ability to adapt ECETOC responses to meet these new demands. This required flexibility allied with a firm commitment to keeping faith with the science.

Dr. Tordoir has been a constant and dependable support behind the scenes for the Secretariat and indeed for virtually all ECETOC's scientific activities. He has, furthermore, acted as a strong and able envoy for the Association through his own personal contacts and in representing ECETOC formally in the meetings of other organisations.

ECETOC, its Committees and Task Forces and member companies, and the many individual scientists with whom Wim Tordoir has interacted, are united in expressing appreciation for his outstanding contribution and in extending their good wishes for his retirement.



*Mrs M. Tordoir (left) and Dr W. Tordoir (right) receiving presentations from Dr G. Randall at the Scientific Committee farewell dinner.*





# the Secretary General's Report

---



Dr F.M. Carpanini

## MAJOR INITIATIVES

### ▶ Long-range Research Initiative (LRI)

ECETOC has played a significant role since 1997 in the development of CEFIC/ Chemical Manufacturers Association (CMA)/ Japanese Chemical Industry Association (JCIA) funded strategic research programme on health and environmental research.

The ECETOC groups responsible for the preparation of the State of the Science White Papers developed more-specific Requests for Proposals (RfPs) covering 25 research projects in the fields of;

- ▶ Environmental fate modelling;
- ▶ Persistence, bioaccumulation and ecotoxicity;
- ▶ Human health effects;
- ▶ Human health exposure;
- ▶ Release and uncertainty.

These RfPs were advertised on the CEFIC Website in April of 1999 with a deadline for responses of 31 July. This resulted in 85 research proposals being received.

Selection teams (consisting of ECETOC member company scientists and external scientists) were

commissioned with the goal of reviewing and ranking the bids received. The results of this exercise were communicated to CEFIC in the form of recommendations for funding, further elaborated with suggestions for improvements of the bids where appropriate. Not all the RfPs were successful and some were redrafted and re-advertised in November.

By the end of 1999 16 projects, which will form the basis of the first 3 years' research, had been agreed. The ECETOC Stewards Team and newly established Monitoring Teams will carry out the scientific management of the LRI programme on behalf of CEFIC. The Monitoring Teams will have the prime responsibility for overseeing and maintaining contact with the individual research projects. In addition the Monitoring Teams are charged with maintaining close contact with the complementary LRI activities underway in the USA (CMA) and Japan (JCIA), ensuring opportunities for joint efforts and new research opportunities and needs are identified and communicated to the CEFIC Planning Group. Involvement in formal revision or addition to the State of the Science White Papers will also be included in the Monitoring Teams' terms of reference.

### ▶ Revision of Technical Guidance Document (TGD) for Risk Assessment

This year the focus of work has shifted in response to the European Chemicals Bureau's (ECB) announced intention in April 1999 to revise the TGD for risk assessment (Technical Guidance Document in Support of Commission Directive 93/67/EEC on Risk Assessment for New Notified Substances and Commission Regulation (EC) No 1488/94 on Risk Assessment for Existing Substances). The announcement included the proposal to extend the guidance to cover biocides as well as new and existing substances.

ECB made it clear from the beginning that ECETOC would be a valued partner in progressing this initiative. Moreover it was expected that steps would be taken to ensure that the input from the whole industry should be channelled through ECETOC as single point of contact, not an easy task to accomplish with the range of industry sectors to which the risk assessment regulation applies. These include industrial chemicals, metals, dyes, detergents, oil and consumer products, each with their own particular concerns; in addition biocides needed to be integrated. In spite of this broad range of interests, only one or two experts were to be invited from industry to join each of the ECB topic groups.

Meetings with other relevant associations, particularly CEFIC, Eurometaux, Association Internationale de la Savonnerie, de la Détergence et des Produits d'Entretien (AISE), CONCAWE and with representatives from the biocides sector resulted in a strategy for formulating the necessary input to the revision process. Acknowledging the successful leadership role played by ECETOC in the development of the TGD in 1996, agreement was reached that ECETOC would act as focal point for industry.

The bulk of this activity is planned for 2000. Efforts during the latter half of 1999 have been directed towards constructing the framework to support the revision process and in ensuring that the interests of all our member companies and of the other industry associations would be taken into account whilst formulating the scientific input.

Some of the topic areas for revision were initiated by ECB in 1999. These included marine risk assessment and the risk assessment of non-threshold carcinogens. It is expected that there will be considerable pressure next year to progress matters to meet the announced intention

to achieve a first draft of a revised TGD by the end of year 2000.

ECETOC representation at the ECB meetings during 1999, included the following:

ECETOC Secretariat (M. Butler and M. Holt) participated in the sessions on the proposed revision of the TGD at the 20th and 21st Technical Meetings on Existing Chemicals following Council Regulation (EEC, 793/93) held in Arona, in May/June and September respectively.

Dr. A. Mallett (Shell) and Mr. M. Penman (Exxon) represented ECETOC at sub-group meetings on the quantitative risk assessment of non-threshold carcinogens, held in Arona, on 22 September, and 9 December respectively.

Also relevant to the TGD revision process, in April 1999 a workshop on interpretation of margins of safety (MOS) in human health risk assessment was convened by ECB in conjunction with the Dutch authorities (Rijksinstituut voor Volksgezondheid en Milieuhygiëne (RIVM)) and TNO. ECETOC was invited to participate in the organising committee and was represented thereon by Dr. C. Lally (Procter & Gamble and Chair of the ECETOC Task Force on Risk Assessment Factors). Representation at the workshop from industry was limited to four and ECETOC, in consultation with other organisations, acted as focal point, fielding experts covering interspecies extrapolation, intraspecies extrapolation, route-to-route extrapolation and duration of exposure.

In addition to Dr. Lally, the following experts represented ECETOC and industry at the workshop: Drs. S. Jacobi (Degussa), W. ten Berge (DSM), W. Aulmann (Henkel) and Mr. M. Penman (Exxon).

## ▼ ECETOC Website

In formulating ECETOC's strategic plan, an urgent need was identified for improving the visibility of the organisation to the outside world and enhancing the communications with its membership.

The creation of an ECETOC Website with associated intranets, underpinned by an effective contacts database, was considered key to realising this goal. To initiate and maintain these resources the Secretariat was re-inforced with a communications specialist.

External contractors were commissioned to design the Website and its associated elements. Review of the project during its development was effected through consultation with specialists and users representing member companies and external groups.

The Website, [www.ecetoc.org](http://www.ecetoc.org) was officially launched in December. It comprises public and members-only sections, to promote an improved level of communication about our activities, publications, workshops and other developments.

Further expansion of this service, *inter alia* to provide discussion fora for specialist networks is planned for 2000.

## ECETOC TASK FORCES

### ▼ New Task Forces

During 1999 new Task Forces were established in relation to the following issues:

#### ▼ Cyanides

At the request of interested member companies, the Scientific Committee agreed to appoint a Task Force to prepare a JACC on cyanides. Many cyanide-containing chemicals are HPV (high production volume) chemicals with widespread use in industry. Several compounds (sodium and potassium cyanide, hydrogen cyanide and acetone cyanohydrin) are included in the Organisation for Economic Co-operation and Development (OECD)/EC Risk Assessment programme and although not prioritised to date are likely to undergo assessment in the next few years. A comprehensive review of the available physico-chemical, toxicological, environmental, ecotoxicological and human data will strengthen the rationale for extrapolation of data between these chemicals and help identify potential data gaps in advance of regulatory programmes.

#### ▼ Fluoroalkanes

The Scientific Committee agreed to establish a Task Force to prepare a series of JACC reports on fluoroalkanes. Fluoroalkanes are used as refrigerants, blowing agents and propellants. There is a need for a comprehensive, critical review to include the most recent studies. A supplementary report is planned to address the potential health impact of the impurities, by-products or decomposition products that occur in fluoroalkanes.

#### ▼ Symposium on Genetic Susceptibility to Environmental Toxicants

This Task Force was commissioned to organise jointly with the European Environmental Mutagens Society (EEMS) a symposium on Genetic Susceptibility to Environmental Toxicants. Thereafter the Task Force would edit the proceedings and recommendations in a form suitable for publication. The symposium is to be held on 24 August 2000 in Budapest.

#### ▼ Use of Observational Data in the Risk Assessment of Existing Chemicals

This Task Force was commissioned to develop criteria on which to judge the adequacy of epidemiology/observational/workplace exposure data. This guidance will justify where appropriate the use of human data in place of those from controlled experiments in animals. In particular, the outcome of this work will be relevant to providing input to the EC's proposed revision of the TGD for the risk assessment of existing chemicals.

### ✔ Ongoing Task Forces

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

#### ▼ Risk Assessment

In 1998 a review of the progress made in the risk assessments being conducted under the EC Council Regulation 793/93 revealed severe delays. A number of areas were highlighted where additional scientific guidance could help accelerate the progress of the risk assessments and improve the quality of the outcome. The Scientific

Committee commissioned the following Task Forces to develop the necessary guidance:

- ✔ Adverse versus Non-adverse Effects
- ✔ Marine Risk Assessment
- ✔ Risk Assessment Factors
- ✔ Terrestrial Risk Assessment
- ✔ Toxicological Mechanisms

#### ▼ Health Effects

The following Task Forces have been commissioned to address generic issues concerning the evaluation of health effects of chemical substances. The outcome from these groups will be in the form of guidance on interpretation and application of data, e.g. in the context of hazard classification.

- ✔ Genetic Polymorphism
- ✔ Human Data for Classification Purposes
- ✔ Reproductive Toxicity
- ✔ Skin Sensitisation Testing
- ✔ Toxic Effects of Dusts

#### ▼ Environment

The following Task Forces were appointed to address specific issues related to the environmental fate and/or effects of chemicals:

- ✓ Aquatic Hazard Assessment II
- ✓ Aquatic Toxicity of Mixtures
- ✓ Ecotoxicity of Borates
- ✓ Environmental Oestrogens
- ✓ GREAT-ER Project
- ✓ Persistent Organic Pollutants (POPs)
- ✓ Terrestrial (Soil) Hazard Classification

#### ➤ Specific Substances Programme

This part of the ECETOC programme is devoted to preparation of comprehensive critical reviews of toxicological and ecotoxicological data on specific substances, predominantly those having widespread and multiple uses. The outcome of these initiatives is published in the JACC series of reports. In some cases, these hazard assessments are further extended to enable their application in risk assessment scenarios, e.g. under the Existing Substances Regulation 793/93. The Task Forces engaged in preparing these reports are:

- ✓ Butanols
- ✓ Methyl Tert-Butyl Ether (MTBE) Risk Assessment
- ✓ Monochloroacetic Acid and its Sodium Salt
- ✓ Peracetic Acid
- ✓ Synthetic Amorphous Silica
- ✓ Tetrafluoroethylene and Hexafluoropropylene

## RELATIONSHIPS WITH OTHER ORGANISATIONS

### ✓ European Commission – Joint Research Centre(JRC)/ European Chemicals Bureau(ECB)

See "Revision of Technical Guidance Document for Risk Assessment" under Major Initiatives, page 9.

In addition, Mr R. Murray-Smith (AstraZeneca) represented ECETOC on the ECB 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 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 1999, ECETOC continued to be represented by Dr. P. Botham (AstraZeneca) on the Scientific Advisory Committee (ESAC).

### ✓ European Commission – Research

#### ➤ European Dermal Exposure Network

This thematic network, set up in 1996 for a 3-year period, was supported by the EC under the SMT

4th Action Programme. A major role was the facilitation of interchange between experts in the fields of "skin and surface contamination", "biological monitoring" and "risk assessment". The network concluded its work in October 1999, by which time the technology transfer programme had been completed, the challenge now being to find people from the recipient countries to attend the proposed course in workplace risk assessment. Proposals for collaborative research under the 5th Action Programme had generated interest in relation to such topics as dermal penetration and biological monitoring.

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

#### ▼ Fate and Activity Modelling of Environmental Pollutants Using Structure-Activity Relationships (FAME)

Dr M. Comber (AstraZeneca) represented ECETOC in the EU project FAME which is aimed at the development and validation of QSARs to be used primarily in connection with priority setting. Dr. Comber was supported in this activity by the ECETOC QSARs Task Force.

#### ▼ Organisation for Economic Co-operation and Development (OECD)

ECETOC continued to maintain close co-operation with OECD and its on-going programme of activities relating 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 1999 ECETOC member companies were invited to comment on a wide range of topics and proposed Test Guidelines, including the following:

Guideline (proposed): *In Vitro* Percutaneous Absorption Method

Guideline 202 (update): *Daphnia* sp. Acute Immobilisation Test

Guidelines 420 and 423 (updates): Acute Oral Toxicity Testing

Guideline (proposed): Leaching in Soil Columns

Guidance Notes: Analysis and Evaluation of Chronic Toxicity Studies

Guidance: Neurotoxicity Testing

In addition:

Dr. J. Gerlache (Solvay) participated as a member of the organising committee for a meeting on Acute Exposure Guideline Levels (AEGLs), held in Paris, 7-8 June 1999, at which he represented ECETOC.

Drs. P. Botham (AstraZeneca) and S. Allen (AstraZeneca) represented ECETOC and AstraZeneca at an OECD consultation meeting on acute oral toxicity, Arlington, USA, 22-24 March 1999.

Dr. M. Comber (AstraZeneca) and Dr. P-G. Pontal (Rhône-Poulenc) represented ECETOC for environmental and health issues respectively on

the ongoing Network of Experts on Risk Assessment.

Mr R. Murray-Smith (AstraZeneca) represented ECETOC on the OECD Task Force on Environmental Exposure Assessment.

Dr. A. Sarrif (DuPont) and Dr. D. Basketter (Unilever) represented ECETOC on the ongoing Business and Industry Advisory Committee (BIAC) Special Task Force on OECD Harmonisation of Classification and Labelling.

### ✔ United Nations Environment Programme (UNEP)

✔ UNEP Criteria Expert Group (CEG) meeting, Vienna, June 1999

Dr. J-M. Libre (Elf Atochem) Chairman of the ECETOC Persistent Organic Pollutants (POPs) Task Force tabled recommendations for the scientific criteria for nominating POPs.

### ✔ World Health Organization (WHO)

ECETOC was admitted into official relations with the WHO in 1996 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. This co-operation has continued throughout 1999.

### ✔ 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. In all cases the importance of maintaining scientific integrity through such participation is emphasised in briefings before the event.

✔ IPCS Planning Workgroup on Exposure Assessment, Athens, 5-6 September, 1999.

Dr. V. Vandepitte (Procter & Gamble) represented ECETOC.

✔ 4th Steering Committee meeting on harmonisation of approaches to the assessment of risk from exposure to chemicals, Montreux, 30 September-1 October 1999.

Dr. V. Scailteur (Procter & Gamble) represented ECETOC.

✔ IPCS Environmental Health Criteria Document (EHC) Programme

ECETOC provides comments and data in the consultation phase of the development of IPCS EHC documents. During 1999, ECETOC members were invited to comment on the following draft documents:

Relevance and Validation of Biomarkers in Risk Assessment

Palladium

Arsenic and Arsenic Compounds

Following the consultation phase ECETOC is invited to provide a specialist representative to participate as an observer in the IPCS Task Group meeting to finalise the EHC.

▼ 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 designed 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 1999, ECETOC participation in the CICADs programme included:

5th Final Review Board meeting for CICADs, Sweden, May 1999.

Dr. N. Drouot (Elf Atochem) represented ECETOC.

▼ International Agency for Research on Cancer (IARC)

ECETOC has a well-established 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 1999, no such meetings were held. However, IARC announced its intention to convene a Working Group of experts to meet in February 2000 to evaluate the "publicly available evidence" that some (17) industrial chemicals could pose a risk of developing cancer.

Dr. G. Gans (BASF) was appointed as the ECETOC observer to the IARC Working Group meeting on Some Industrial Chemicals, Volume 77, to be held at Lyon on 15-22 February 2000.

▼ The European Cosmetic Toiletry and Perfumery Association (COLIPA)

Dr. R. Lewis (AstraZeneca) represented ECETOC on the COLIPA committee set up to oversee a COLIPA initiative to explore research into alternative non-animal tests to replace the Draize eye test.

Dr. I. Kimber (AstraZeneca) represented ECETOC on the COLIPA "Skin Tolerance" Task Force towards ensuring effective communication between the COLIPA activities and those of the current ECETOC Task Force on Skin Sensitisation Testing, and to identify any opportunities for joint projects with other organisations.



### ✔ International Life Sciences Institute (ILSI)

The Secretary General participated in an ILSI workshop on Threshold of Toxicological Concern for Chemical Substances Present in the Diet, Paris, 5-6 October 1999.

ECETOC also continues its active membership of the Environmental and Health Task Force.

### ✔ European Chemical Industry Council (CEFIC)

See "Long-range Research Initiative" under Major Initiatives on page 9

## PRESENTATIONS

### ✔ Sound Science for Responsible Management of Chemical Safety, VCI Technik und Umwelt Committee, 19 February 1999

The Board Chairman, Mr. J.J. Van de Berg (Solvay) and the Secretary General delivered a presentation on ECETOC and its activities to the VCI Technik und Umwelt Committee on 19 February. They described how the association operated, how it compared with other organisations, its achievements to date both in terms of issues and partnerships, and the challenges for the future. There was considerable discussion of the issue of diminishing specialist resources in the chemical industry.

### ✔ European Toxicology Forum, Brussels, 6 May 1999

The Secretary General gave a presentation at the European Toxicology Forum, describing the role of ECETOC in support of the CEFIC Long-range Research Initiative.

### ✔ GREAT-ER Workshop, Arona, Italy 15 March 1999

Dr. T. Feijtel (Procter&Gamble) chaired the workshop presenting the results of the 3 year programme to develop the GREAT-ER model to an audience of 75 participants from academia, the regulatory authorities and industry.

✔ SETAC Europe 9th Annual meeting, Leipzig, 25-29 May 1999

A series of platforms and poster presentations describing the development and use of the GREAT-ER (Geography-referenced Exposure Assessment Tool for European Rivers) model were featured.

Dr. T. Feijtel (Procter & Gamble) described the Pan-European Development of GREAT-ER. Dr. G. Boeijs (Procter & Gamble) presented on spatially aggregated Predicted Environmental Concentrations (PECs), Dr. K. Fox (Unilever) focused on the removals of linear alkylbenzene sulphonate from four rivers in the UK, Mr. F. Koorman (University of Osnabrück) outlined the use of GREAT-ER as a tool for data quality checking and monitoring design and the spatial aspects of exposure assessment for down-the-drain chemicals were discussed by Mr. J.-O. Wagner (University of Osnabrück).

A number of other presentations on the development within the GREAT-ER project and its use as a first level modelling tool to meet the requirements of the proposed EC Water Framework Directive were given by Dr. K. Fox (Unilever) at the following conferences and workshops:

International Conference on Water and Textiles, Huddersfield, May 1999

Waste and Water Conference, Copenhagen, June 1999

Water Symposium Workshop, Stockholm, August 1999

SETAC UK Modelling Workshop Cardiff, September 1999

SETAC US meeting in Philadelphia, November 1999

✔ Joint EC-US Acrylates/Methacrylates Industry Meeting, Munich, 22 September 1999

Dr. H. Müllerschön (Rohm & Haas) presented an update on the current status of work achieved by the ECETOC Task Force that also collected data as an OECD Clearing House.



*Dr. F. M. Carpanini  
Secretary General  
ECETOC*

## PUBLICATIONS

The following ECETOC reports were published in 1999

No.	DOCUMENT
39	Screening and Testing for Ecotoxicological Effects of Potential Endocrine Disrupters: Response to the EDSTAC Recommendations and a Proposed Alternative Approach
No.	JOINT ASSESSMENT OF COMMODITY CHEMICALS (JACC) REPORTS
38	Monochloroacetic Acid (CAS No. 79-11-8) and its Sodium Salt (CAS No. 3926-62-3)
39	Tetrachloroethylene (CAS No. 127-18-4)
No.	MONOGRAPH
28	Threshold-Mediated Mutagens – Publication in Mutations Research, Special Issue
No.	SPECIAL REPORT
16	GREAT-ER User Manual
No.	TECHNICAL REPORT
76	Monitoring and Modelling of Industrial Organic Chemicals, with Particular Reference to Aquatic Risk Assessment
77	Skin and Respiratory Sensitisers: Reference Chemicals Data Bank
78	Skin Sensitisation Testing: Methodological Considerations

## EXTERNAL PUBLICATIONS

Eye Irritation – Updated Reference Chemicals Data Bank. Bagley DM, Gardner JR, Holland G, Lewis RW, Walker AP, and Vrijhof H, 1999. Toxicology in Vitro 13, 505-510.

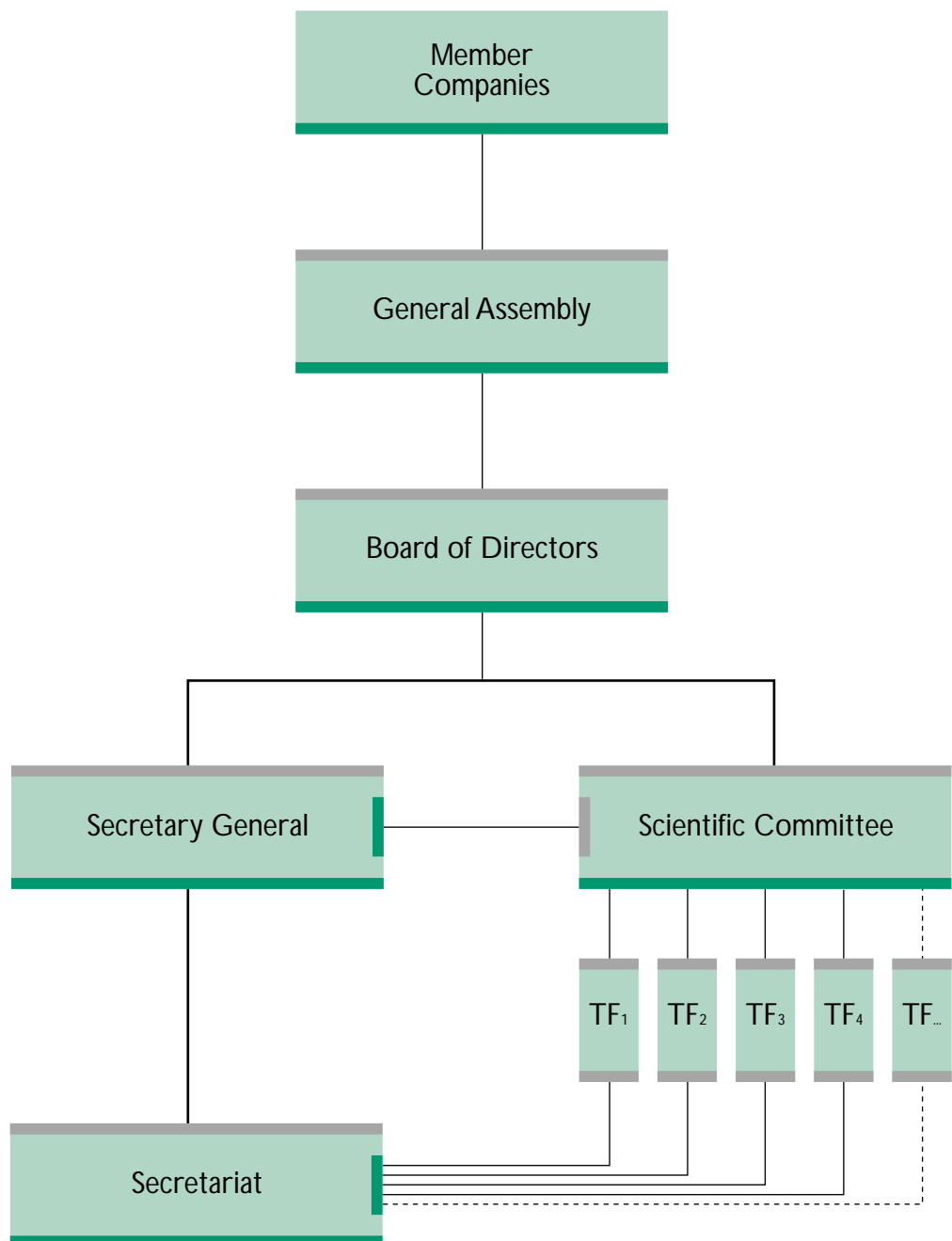
ECETOC – EEMS Symposium on Dose-Response and Threshold-Mediated Mechanisms in Mutagenesis (Salzburg, Austria; 7 September 1998) General Introduction. Sarrif AM, Aardema MJ, Arni P, Henderson LM, Kirsch-Volders M and Vrijhof H, 2000. Mutation Research 464, 1-2.

Thresholds in genetic toxicology – concluding remarks. Speit G, Autrup H, Crebelli R, Henderson L, Kirsch-Volders M, Madle S, Parry JM, Sarrif AM and Vrijhof H, 2000. Mutation Research 464, 149-153.

# 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 up to 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 23.

### ✔ 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' 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.

### ✔ Website

The ECETOC Website communicates the goals, objectives, output and activities of the Association to the outside world, provides an additional information source and point of contact to our members and supports the Committees and Task Forces in developing their outputs.

### ✔ Representation

ECETOC regularly receives invitations to send representatives and observers to a variety of fora, such as the IPCS, OECD, IARC and the EC 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.

## ECETOC SECRETARIAT

At 31 December 1999 staff employed were:

- ✔ Dr. F. Carpanini Secretary General
- ✔ Ms. M. Butler Health Sciences
- ✔ Mr. M. Holt Environmental Sciences
- ✔ Ir. H. Vrijhof Chemicals Programme
- ✔ Ms. S. Henssler Communications
- ✔ Ms. G. Gérits Office Manager
- ✔ Ms. A. Vandeneuycken Secretary
- ✔ Ms. A. Ngoy Secretary

Mrs. Michèle De Mesmaeker retired from her position as Office Manager in July 1999. Michèle had served ECETOC for many years having joined the Association in its early days in Avenue Louise. We extend good wishes to her for a long and happy retirement. In her place we welcome Ms. Geneviève Gérits.

We also welcome Ms. Sabine Henssler who joined the ECETOC team as Communications Officer in July 1999.

*Working group meeting with from left Mr. M. Holt, Ms. M. Butler, Ms. S. Henssler, Dr. F. Carpanini and Ir. H. Vrijhof*



## ECETOC MEMBERSHIP

3M  
Akzo Nobel  
Albright & Wilson  
AstraZeneca  
Ausimont  
BASF  
Bayer  
Benckiser  
Boehringer Ingelheim  
Borax  
Borealis  
BP Amoco Chemicals  
Ciba Specialty Chemicals  
Coca-Cola  
Colgate-Palmolive  
Degussa\*  
Dow Corning  
Dow Chemical  
DSM  
DuPont de Nemours  
Elf Atochem  
Enichem  
Exxon Chemical  
F. Hoffmann-La Roche  
FMC  
Fortum  
Henkel  
Hüls\*  
ICI  
Janssen Pharmaceutica  
L'Oreal  
Lyondell Chemical  
Merck  
Monsanto  
Norsk Hydro  
Novartis  
Novo Nordisk  
Perstorp Regeno  
Petresa  
Procter & Gamble  
Repsol Quimica  
Rhône-Poulenc †  
Rohm & Haas  
Shell Chemicals  
Solvay  
Statoil  
Th. Goldschmidt  
TotalFina  
Unilever  
Union Carbide  
Wacker Chemie

\* Merged to Degussa-Hüls during 1999

† Now Rhodia



# finance



INCOME	ACTUAL 1999 EURO
Subscriptions	
Full Members	1,428,000
New Members	9,333
<b>Total Subscriptions</b>	<b>1,437,333</b>
Bank interest	36,071
Document sales	20,886
Project-related	80,292
<b>GRAND TOTAL</b>	<b>1,574,582</b>

EXPENDITURE*	ACTUAL 1999 EURO
Salaries (and related expenses)	880,404
Office and running expenses	246,809
Travel expenses on mission	28,554
Meetings and consultants	78,883
Professional services	9,428
Bank charges	5,838
Capital expenditure	13,565
Publications	41,124
Miscellaneous	18,823
Website development	37,184
<b>TOTAL</b>	<b>1,360,612</b>

BALANCE SHEET AND RESERVES	ACTUAL 1999 EURO
<b>Balance sheet</b>	
Income	1,574,582
Expenditure	1,360,612
Operating margin	213,970
<b>Reserves</b>	
Opening	968,742
Operating margin	213,970
Closing Reserve	1,182,712
Estimated Reserve required	409,024

# ECETOC Publications

---



## MONOGRAPHS

- No. 1 Good Laboratory Practice
- No. 2 A Contribution to Strategy for Identification and Control of Occupational Carcinogens
- No. 3 Risk Assessment of Occupational Chemical Carcinogens
- No. 4 Hepatocarcinogenesis in Laboratory Rodents: Relevance for Man
- No. 5 Identification and Assessment of the Effects of Chemicals on Reproduction and Developments (Reproductive Toxicology)
- No. 6 Acute Toxicity Tests, LD50 (LC50) Determinations and Alternatives
- No. 7 Recommendations for the Harmonisation of International Guidelines for Toxicity Studies
- No. 8 Structure-Activity Relationships in Toxicology and Ecotoxicology: An Assessment (Summary)
- No. 9 Assessment of Mutagenicity of Industrial and Plant Protection Chemicals
- No. 10 Identification of Immunotoxic Effects of Chemicals and Assessment of their Relevance to Man
- No. 11 Eye Irritation Testing
- No. 12 Alternative Approaches for the Assessment of Reproductive Toxicity (with emphasis on embryotoxicity/teratogenicity)
- No. 13 DNA and Protein Adducts: Evaluation of their Use in Exposure Monitoring and Risk Assessment
- No. 14 Skin Sensitisation Testing
- No. 15 Skin Irritation
- No. 16 Early Indicators of Non-Genotoxic Carcinogenesis
- No. 17 Hepatic Peroxisome Proliferation
- No. 18 Evaluation of the Neurotoxic Potential of Chemicals
- No. 19 Respiratory Allergy
- No. 20 Percutaneous Absorption
- No. 21 Immunotoxicity: Hazard Identification and Risk Characterisation
- No. 22 Evaluation of Chemicals for Oculotoxicity
- No. 23 Receptor Mediated Mechanisms in Chemical Carcinogenesis
- No. 24 Risk Assessment for Carcinogens
- No. 25 Practical Concepts for Dose Selection in Chronic Toxicity and Carcinogenicity Studies in Rodents
- No. 26 Aquatic Toxicity Testing of Sparingly Soluble Volatile and Unstable Substances
- No. 27 Aneuploidy
- No. 28 Threshold - Mediated Mutagens - Publication in Mutation Research, Special Issue

## TECHNICAL REPORTS

- No. 1 Assessment of Data on the Effects of Formaldehyde on Humans
- No. 2 The Mutagenic and Carcinogenic Potential of Formaldehyde
- No. 3 Assessment of Test Methods for Photodegradation of Chemicals in the Environment
- No. 4 The Toxicology of Ethylene Glycol Monoalkyl Ethers and its Relevance to Man
- No. 5 Toxicity of Ethylene Oxide and its Relevance to Man
- No. 6 Formaldehyde Toxicology: an Up-Dating of ECETOC Technical Reports 1 and 2
- No. 7 Experimental Assessment of the Phototransformation of Chemicals in the Atmosphere
- No. 8 Biodegradation Testing: An Assessment of the Present Status
- No. 9 Assessment of Reverse-Phase Chromatographic Methods for Determining Partition Coefficients
- No. 10 Considerations Regarding the Extrapolation of Biological Data in Deriving Occupational Exposure Limits
- No. 11 Ethylene Oxide Toxicology and its Relevance to Man: An Up-Dating of ECETOC Technical Report 5
- No. 12 The Phototransformation of Chemicals in Water: Results of a Ring-Test
- No. 13 The EEC 6th Amendment: A Guide to Risk Evaluation for Effects on the Environment
- No. 14 The EEC 6th Amendment: A Guide to Risk Evaluation for Effects on Human Health
- No. 15 The Use of Physical-Chemical Properties in the 6th Amendment and their Required Precision, Accuracy and Limiting Values
- No. 16 A Review of Recent Literature on the Toxicology of Benzene
- No. 17 The Toxicology of Glycol Ethers and its Relevance to Man: An Up-Dating of ECETOC Technical Report 4
- No. 18 Harmonisation of Ready Biodegradability Tests
- No. 19 An Assessment of Occurrence and Effects of Dialkyl-o-Phthalates in the Environment
- No. 20 Biodegradation Tests for Poorly-Soluble Compounds
- No. 21 Guide to the Classification of Carcinogens, Mutagens, and Teratogens under the 6th Amendment
- No. 22 Classification of Dangerous Substances and Pesticides in the EEC Directives. A Proposed Revision of Criteria for Inhalational Toxicity
- No. 23 Evaluation of the Toxicity of Substances to be Assessed for Biodegradability
- No. 24 The EEC 6th Amendment: Prolonged Fish Toxicity Tests
- No. 25 Evaluation of Fish Tainting
- No. 26 The Assessment of Carcinogenic Hazard for Human Beings exposed to Methylene Chloride
- No. 27 Nitrate and Drinking Water
- No. 28 Evaluation of Anaerobic Biodegradation
- No. 29 Concentrations of Industrial Organic Chemicals Measured in the Environment: The Influence of Physico-Chemical Properties, Tonnage and Use Patterns

- No. 30 Existing Chemicals: Literature Reviews Technical and Evaluations (Fifth Edition) (No longer available)
- No. 31 The Mutagenicity and Carcinogenicity of Vinyl Chloride: A Historical Review and Assessment
- No. 32 Methylene Chloride (Dichloromethane): Human Risk Assessment Using Experimental Animal Data
- No. 33 Nickel and Nickel Compounds: Review of Toxicology and Epidemiology with Special References to Carcinogenesis
- No. 34 Methylene Chloride (Dichloromethane): An Overview of Experiment Work Investigating Species, Differences in Carcinogenicity and their Relevance to Man
- No. 35 Fate, Behaviour and Toxicity of Organic Chemicals Associated with Sediments
- No. 36 Biomonitoring of Industrial Effects
- No. 37 Tetrachlorethylene: Assessment of Human Carcinogenic Hazard
- No. 38 A Guide to the Classification of Preparations Containing Carcinogens, Mutagens and Teratogens
- No. 39 Hazard Assessment of Floating Chemicals After an Accidental Spill at Sea
- No. 40 Hazard Assessment of Chemical Contaminants in Soil
- No. 41 Human Exposure to N-Nitrosamines, their Effects and Risk Assessment for N-Nitrosodiethanolamine in Personal Care Products
- No. 42 Critical Evaluation of Methods for the Determination of N-Nitrosamines in Personal Care and Household Products
- No. 43 Emergency Exposure Indices for Industrial Chemicals
- No. 44 Biodegradation Kinetics
- No. 45 Nickel, Cobalt and Chromium in Consumer Products: Allergic Contact Dermatitis
- No. 46 EC 7th Amendment: Role of Mammalian Toxicokinetic and Metabolic Studies in the Toxicological Assessment of Industrial Chemicals
- No. 47 EC 7th Amendment "Toxic to Reproduction": Guidance on Classification
- No. 48 Eye Irritation: Reference Chemicals Data Bank (Second Edition)
- No. 49 Exposure of Man to Dioxins: A Perspective on Industrial Waste Incineration
- No. 50 Estimating Environmental Concentrations of Chemicals using Fate and Exposure Models
- No. 51 Environmental Hazard Assessment of Substances
- No. 52 Styrene Toxicology Investigations on the Potential for Carcinogenicity
- No. 53 DHTDMAC: Aquatic and Terrestrial Hazard Assessment (CAS No. 61789-80-8)
- No. 54 Assessment of the Biodegradation of Chemicals in the Marine Environment
- No. 55 Pulmonary Toxicity of Polyalkylene Glycols
- No. 56 Aquatic Toxicity Data Evolution: The Database (ISSN-0773-8072-56)
- No. 57 Polypropylene Production and Colorectal Cancer
- No. 58 Assessment of Non-Occupational Exposure to Chemicals
- No. 59 Testing for Worker Protection
- No. 60 Trichloroethylene: Assessment of Human Carcinogenic Hazard
- No. 61 Environmental Exposure Assessment

- No. 62 Ammonia Emissions to Air in Western Europe
- No. 63 Reproductive and General Toxicology of some Inorganic Borates and Risks Assessment for Human Beings
- No. 64 The Toxicology of Glycol Ethers and its Relevance to Man
- No. 65 Formaldehyde and Human Cancer Risks
- No. 66 Skin Irritation and Corrosion: Reference Chemicals Data Bank
- No. 67 The Role of Bioaccumulation in Environmental Risk Assessment: The Aquatic Environment and Related Food Webs
- No. 68 Assessment Factors in Human Health Risk Assessment
- No. 69 Toxicology of Man-Made Organic Fibres
- No. 70 Chronic Neurotoxicity of Solvents
- No. 71 Inventory of Critical Reviews on Chemicals (Only available to ECETOC members)
- No. 72 Methyl tert-Butyl Ether (MTBE) Health Risk Characterisation
- No. 73 The Value of Aquatic Model Ecosystem Studies in Ecotoxicology
- No. 74 QSARs in the Assessment of the Environmental Fate and Effects of Chemicals
- No. 75 Organophosphorus Pesticides and Long-term Effects on the Nervous System
- No. 76 Monitoring and Modelling of Industrial Organic Chemicals, with Particular Reference to Aquatic Risk Assessment
- No. 77 Skin and Respiratory Sensitisers: Reference Chemicals Data Bank
- No. 78 Skin Sensitisation Testing: Methodological Considerations

## JACC

- No. 1 Joint Assessment of Commodity Chemicals, Melamine
- No. 2 Joint Assessment of Commodity Chemicals, 1,4-Dioxane
- No. 3 Joint Assessment of Commodity Chemicals, Methyl Ethyl Ketone
- No. 4 Joint Assessment of Commodity Chemicals, Methylene Chloride
- No. 5 Joint Assessment of Commodity Chemicals, Vinylidene Chloride
- No. 6 Joint Assessment of Commodity Chemicals, Xylenes
- No. 7 Joint Assessment of Commodity Chemicals, Ethylbenzene
- No. 8 Joint Assessment of Commodity Chemicals, Methyl Isobutyl Ketone
- No. 9 Joint Assessment of Commodity Chemicals, Chlorodifluoromethane
- No. 10 Joint Assessment of Commodity Chemicals, Isophorone
- No. 11 Joint Assessment of Commodity Chemicals, (HFA-132b) 1,2-Dichloro-1,1-Difluoroethane
- No. 12 Joint Assessment of Commodity Chemicals, (HFA-124) 1-Chloro-1,2,2,2-Tetrafluoroethane
- No. 13 Joint Assessment of Commodity Chemicals, (HFA-123) 1,1-Dichloro-2,2,2-Trifluoroethane
- No. 14 Joint Assessment of Commodity Chemicals, (HFA-133a) 1-Chloro-2,2,2-Trifluoromethane
- No. 15 Joint Assessment of Commodity Chemicals, (HFA-141B) 1-Fluoro 1,1-Dichloroethane
- No. 16 Joint Assessment of Commodity Chemicals, (HCFC-21) Dichlorofluoromethane
- No. 17 Joint Assessment of Commodity Chemicals, (HFA-142b) 1-Chloro-1,1-Difluoroethane

- No. 18 Joint Assessment of Commodity Chemicals, Vinyl Acetate
- No. 19 Joint Assessment of Commodity Chemicals, Dicyclopentadiene (CAS:77-73-6)
- No. 20 Joint Assessment of Commodity Chemicals, Tris-/Bis-/Mono-(2 ethylhexyl) Phosphate
- No. 21 Joint Assessment of Commodity Chemicals, Tris-(2-Butoxyethyl)-Phosphate (CAS:78-51-3)
- No. 22 Joint Assessment of Commodity Chemicals, Hydrogen Peroxide (CAS:7722-84-1)
- No. 23 Joint Assessment of Commodity Chemicals, (ISSN-0773-6339-23) Polycarboxylate Polymers as Used in Detergents
- No. 24 Joint Assessment of Commodity Chemicals, Pentafluoroethane (HFC-125) (CAS:354-33-6)
- No. 25 Joint Assessment of Commodity Chemicals, 1-Chloro-1,2,2,2-tetrafluoroethane (HCFC 124) (CAS No.2837-89-0)
- No. 26 Joint Assessment of Commodity Chemicals, Linear Polydimethylsiloxanes (CAS No.63148-62-9)
- No. 27 Joint Assessment of Commodity Chemicals, n-Butyl Acrylate (CAS No.141-32-2)
- No. 28 Joint Assessment of Commodity Chemicals, Ethyl Acrylate (CAS No.140-88-5)
- No. 29 Joint Assessment of Commodity Chemicals, (HCFC-141b) 1,1-Dichloro-1-Fluoroethane (CAS No. 1717-00-6)
- No. 30 Joint Assessment of Commodity Chemicals, Methyl Methacrylate (CAS No.80-62-6)
- No. 31 Joint Assessment of Commodity Chemicals, (HFC-134a) 1,1,1,2-Tetrafluoroethane (CAS No. 811-97-2)
- No. 32 Joint Assessment of Commodity Chemicals, (HFC-32) Difluoromethane (CAS No. 75-10-5)
- No. 33 Joint Assessment of Commodity Chemicals, (HCFC-123) 1,1-Dichloro-2,2,2-Trifluoroethane (CAS No. 306-83-2)
- No. 34 Joint Assessment of Commodity Chemicals, Acrylic Acid (CAS No.79-10-7)
- No. 35 Joint Assessment of Commodity Chemicals, Methacrylic Acid (CAS No.79-41-4)
- No. 36 Joint Assessment of Commodity Chemicals, n-Butyl Methacrylate; Isobutyl Methacrylate (CAS No.97-88-1) (CAS No.97-86-9)
- No. 37 Joint Assessment of Commodity Chemicals, Methyl Acrylate (CAS No.96-33-3)
- No. 38 Joint Assessment of Commodity Chemicals, Monochloroacetic Acid (CAS No. 79-11-8) and its Sodium Salt (CAS No. 3926-62-3)
- No. 39 Joint Assessment of Commodity Chemicals, Tetrachloroethylene (CAS No. 127-18-4)

## SPECIAL REPORT

- No. 8 HAZCHEM; A Mathematical Model for Use in Risk Assessment of Substances
- No. 9 Styrene Criteria Document
- No. 10 Hydrogen Peroxide OEL Criteria Document (CAS No. 7722-84-1)
- No. 11 Ecotoxicology of some Inorganic Borates
- No. 12 1,3-Butadiene OEL Criteria Document (Second Edition) (CAS No. 106-99-0)
- No. 13 Occupational Exposure Limits for Hydrocarbon Solvents
- No. 14 n-Butyl Methacrylate Isobutyl Methacrylate OEL Criteria Document

- No. 15 Examination of a Proposed Skin Notation Strategy
- No. 16 GREAT-ER User Manual

## DOCUMENT

- No. 32 Environmental Oestrogens: Male Reproduction and Reproduction Development
- No. 33 Environmental Oestrogens: A Compendium of Test Methods
- No. 34 The Challenge Posed by Endocrine-disrupting Chemicals
- No. 35 Exposure Assessment in the Context of the EC Technical Guidance Documents on Risk Assessment of Substances
- No. 36 Comments on OECD Draft Detailed Review Paper: Appraisal of Test Methods for Sex-Hormone Disrupting Chemicals
- No. 37 EC Classification of Eye Irritancy
- No. 38 Wildlife and Endocrine Disrupters: Requirements for Hazard Identification
- No. 39 Screening and Testing Methods for Ecotoxicological Effects of Potential Endocrine Disrupters: Response to the EDSTAC Recommendations and a Proposed Alternative Approach
- No. 40 Comments on Recommendation from Scientific Committee on Occupational Exposure Limits for 1,3-Butadiene
- No. 41 Persistent Organic Pollutants (POPs) Response to UNEP/INC/CEG-I Annex 1

**AD Connection**