

## Dirk van de Meent (Dik)

born 3 December, 1950 (Alphen aan den Rijn, The Netherlands)  
male, married, two children (1980, 1982)



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**Education**

- 1963-1968 *Secondary school*: Christelijk Lyceum, Alphen aan den Rijn. HBS-b diploma June 1968.
- 1968-1976 *Chemistry and Chemical Engineering* at Delft University of Technology, Delft. Major fields: organic chemistry, analytical chemistry and organic geochemistry. Academic engineering degree (ir) November 1976.
- 1978-1981 *Doctoral research* at Delft University of Technology, Delft, NL; Title thesis: 'Particulate organic matter in the river Rhine delta – its role in trace metal scavenging'. Promotores: prof.drs. P.A. Schenck, prof.dr. J.W. de Leeuw. Doctoral degree in technical sciences (dr) August 1982.

**Positions**

- 1977-1978 *Post doctoral fellow*, University of California at Berkeley, Laboratory of Chemical Biodynamics (dr. M. Calvin, dr. R.P. Philp). Research subject: chemical characterization insoluble organic matter in sediments (kerogen).
- 1982-1986 Project manager Environmental Chemistry, National Institute for Water Supply (RID), Leidschendam.
- 1986-1992 *Head Environmental Chemistry department*, National Institute of Public Health and the Environment (RIVM), Bilthoven. Laboratory of Water and Drinking water Research.
- 1992-1993 *Visiting scientist*, US EPA Environmental Research Laboratory, Athens, Georgia, USA. Development and application of multimedia fate models for evaluation of chemicals.
- 1993 - *Senior scientist*, National Institute of Public Health and the Environment. Laboratory of Ecotoxicology.
- 2004 - *Professor of Environmental Quality*, University of Nijmegen. Part-time extraordinary chair position.

**Experience**

- 1974-1982 *Analytical chemistry*. Instrumental organic analyses (analytical pyrolysis, gas chromatography and mass spectrometry)
- 1974-1982 *Geochemistry*. Occurrence and diagenesis of lipophilic compounds in sediments. Chemical structure of macromolecular organic matter ('humic substances') in sediments. Behavior of trace metals in aquatic sediments.

- 1982-1986 *Environmental chemistry.* Wet deposition of acids, nutrients and trace contaminants. Trace organics in sea water. Sediment-water exchange of trace metals and trace organics. Sorption kinetics and availability of metals and organic compounds.
- 1993 - *Ecotoxicological effects assessment.* Calculating toxic pressure from species sensitivity distributions.
- 1982 - *Consultancy.* Evaluation and integration of environmental chemical knowledge as support for policy documents on environmental management. Integrated Assessment Reporting for priority pollutants. State of the environment reporting. National Environmental Outlooks.
- 1982-1992 *Management.* Project management research projects, line management research department
- 1986- *Teaching.* Teaching environmental chemistry and multimedia fate modeling in national and international post-academic training courses.
- 1984 - *Modeling and risk assessment.* Modeling distribution and fate of organic contaminants in the environment. Special focus on spreadsheet-based multimedia fate modeling (SimpleBox).

### **Current activities**

Actualization, improvement and optimization of multimedia fate models (e.g. spatial and temporal resolution). Use of multimedia models in screening substances for ‘persistence in the environment’ and ‘long-range transport potential’. Model-based calculation of toxic pressure to ecosystems. Model-assisted selection of substances for environmental monitoring. Risk assessment of mixtures of substances. Development of environmental policy indicators for toxic substances.

### **Professional side activities**

- 1966-1967 President student union secondary school
- 1970-1971 Vice-president student union university
- 1986-1992 Chairman Environmental Chemistry Section, Royal Netherlands Chemical Society
- 1988-1990 Local Organizing Committee International Workshop on QSAR in Ecotoxicology, 1990
- 1988-1990 Organizing Committee 12th ESPCB, 1990
- 1990-1992 Local Organizing Committee Second European Conference on Ecotoxicology, 1992
- 1997-1999 Steering Committee, SETAC Task Force on Environmental Persistence and Long-Range Transport of chemicals
- 1999-2005 Treasurer, Chemistry Circle Netherlands-Central, Royal Netherlands Chemical Society (KNCV)
- 2003- Organizing Committee, 16<sup>th</sup> Annual Meeting, SETAC Europe, 2006
- 2004- Board member, Netherlands Society Environmental Scientists (VVM)
- 2004- Editor, SAR and QSAR in Environmental Research

### **Memberships**

- 1984 - Member of the Royal Netherlands Chemical Society (KNCV)
- 1987 -2004 Member of the Netherlands Society of Toxicology (NVT)
- 1989 - Member of the Society of Environmental Toxicology and Chemistry (SETAC), Europe
- 1989 -1998 Member of the Int. Association on Water Pollution Research and Control (IAWPRC)
- 2004- Member of the Netherlands Society of Environmental Professionals (VVM)

## OUTPUT

### Publications in scientific journals, book chapters

- W.L. Maters, **D. van de Meent**, P.J.W. Schuijl, J.W. de Leeuw, P.A. Schenck, H.L.C. Meuzelaar. Curie-point pyrolysis in organic geochemistry. In: Analytical Pyrolysis (C.E.R. Jones and C.A. Cramers, eds.), pp 203-216, Elsevier, Amsterdam, 1977
- D. van de Meent**, W.L. Maters, J.W. de Leeuw, P.A. Schenck. Formation of artifacts in sediments upon freeze-drying. *Organic Geochemistry*, 1(1977), 7-9
- J.W. de Leeuw, W.L. Maters, **D. van de Meent**, J.J. Boon: Solvent-free and splitless injection method for open tubular columns. *Analytical Chemistry*, 49(1977), 1881-1884
- D. van de Meent**, S.C. Brown, R.P. Philp, B.R.T. Simoneit. Pyrolysis-high resolution gas chromatography and pyrolysis-gas chromatography-mass spectrometry of kerogens and kerogen precursors. *Geochimica et Cosmochimica Acta*, 44(1980), 999-1013
- D. van de Meent**, J.W. de Leeuw, P.A. Schenck. Chemical characterization of non-volatile organics in suspended matter and sediments of the river Rhine delta. *Journal of Analytical and Applied Pyrolysis*, 2(1980), 249-263
- D. van de Meent**, J.W. de Leeuw, P.A. Schenck. Origin of unsaturated isoprenoid hydrocarbons in pyrolysates of suspended matter and surface sediments. In: *Advances in Organic Geochemistry 1979* (J.R. Maxwell and A.G. Douglas, eds.), pp 469-474, Pergamon, 1980
- D. van de Meent**, A. Los, J.W. de Leeuw, P.A. Schenck, W. Salomons. Stability constants and binding capacities of fractionated suspended matter for cadmium. *Environmental Technology Letters*, 2(1981), 569-578
- D. van de Meent**, J.W. de Leeuw, P.A. Schenck, J. Haverkamp, W. Windig. Quantitative analysis of biopolymer mixtures by pyrolysis-mass spectrometry. *Journal of Analytical and Applied Pyrolysis*, 4(1982), 133-142
- D. van de Meent**. Particulate organic matter in the river Rhine delta. -Its role in trace metal scavenging. Doctoral thesis. Delftse Universitaire Pers, 1982
- R.P. Philp, **D. van de Meent**. Characterisation of Precambrian kerogens by Curie-point pyrolysis combined with gas chromatography and gas chromatography-mass spectrometer. *Precambrian Research*, 20(1983), 3-16
- D. van de Meent**, A. Los, J. W. de Leeuw, P.A. Schenck, J. Haverkamp. Size fractionation and analytical pyrolysis of suspended particles from the river Rhine delta. In: *Advances in Organic Geochemistry 1981* (M. Bjoroy, ed.), pp 336-349, John Wiley, 1983
- D. van de Meent**, J.A.A. van Oosterwijk, T. Aldenberg. Spoorelementen in regenwater: RID-VEWIN Meetnet Regenwater 1978-1982. In: *Zure regen - oorzaken, effecten en beleid* (E.H. Adema and J. van Ham, eds.), pp 91-92, Pudoc, Wageningen, 1984
- D. van de Meent**, J.W. de Leeuw, P.A. Schenck, W. Salomons. Geochemistry of suspended matter in two sedimentation basins of the river Rhine. *Water Research*, 19(1985), 13333-1340
- D. van de Meent**. Suspended particles in natural waters. In: *Proceedings of the CEC-COST 641 Workshop on "Physico-chemical behaviour of organic micropollutants in the aquatic environment"* (ed. P.C.M. van Noort), pp 6-9, Commission of the European Communities publication no. OMP/60/85 XII/ENV/39/85 (1986)
- H. den Hollander, **D. van de Meent**, P. van Noort, E. Wondergem. Wet deposition of polycyclic aromatic hydrocarbons in The Netherlands. *Science of the Total Environment*, 52(1986), 211-219
- D. van de Meent**, H.A. den Hollander, W.G. Pool, M.J. Vredenbregt, H.A.M. van Oers, E. de Greef, J.A. Luijten. Organic micropollutants in Dutch coastal waters. *Water Science and Technology*, 18(1986), 73-81
- P.S. Griffioen, **D. van de Meent**. Predicting transport behaviour of organic pollutants using simple mathematical models. In: *Organic Micropollutants in the Aquatic Environment* (G. Angeletti and A.

- Bjørseth, eds.), pp. 144-153. Water Pollution Research Reports series no.4, Commission of the European Communities. Kluwer Academic Publishers, 1987
- D. van de Meent.** Environmental chemistry: Instrument in ecological risk assessment. In: Manual on Aquatic Ecotoxicology (H.A.M. de Kruijf, D. de Zwart, P.K. Ray and P.N. Viswanathan, eds.), pp. 31-35, Allied Publishers Pvt. Ltd., New Delhi, 1988
- D. van de Meent.** Exchange processes. In: Manual on Aquatic Ecotoxicology (H.A.M. de Kruijf, D. de Zwart, P.K. Ray and P.N. Viswanathan, eds.), pp. 48-52, Allied Publishers Pvt. Ltd., New Delhi, 1988
- D. van de Meent.** Exposure modeling I: Principles. In: Manual on Aquatic Ecotoxicology (H.A.M. de Kruijf, D. de Zwart, P.K. Ray and P.N. Viswanathan, eds.), pp. 77-81, Allied Publishers Pvt. Ltd., New Delhi, 1988
- D. van de Meent.** Exposure modeling II: The use of simple box models. In: Manual on Aquatic Ecotoxicology (H.A.M. de Kruijf, D. de Zwart, P.K. Ray and P.N. Viswanathan, eds.), pp. 82-87, Allied Publishers Pvt. Ltd., New Delhi, 1988
- C.J.M. Kramer, **D. van de Meent.** Application of chemical speciation models. In: Manual on Aquatic Ecotoxicology (H.A.M. de Kruijf, D. de Zwart, P.K. Ray and P.N. Viswanathan, eds.), pp. 95-99, Allied Publishers Pvt. Ltd., New Delhi, 1988
- D. van de Meent.** Intercompartment transfer of pollutants. Science of the Total Environment, 90(1990), 41-54
- D. van de Meent**, H.A. den Hollander, J.H. Verboom. Desorption kinetics of metals and PAH from suspended particles: experimental observations and modeling. In: Organic micropollutants in the aquatic environment (G. Angeletti and A. Bjørseth, eds.), pp. 50-60, Kluwer, 1991
- L.A. van der Kooij, **D. van de Meent**, C.J. van Leeuwen, W.A. Bruggeman. Deriving quality criteria for water and sediment from the results of aquatic toxicity tests and product standards: application of the equilibrium partitioning method. Water Research, 25(1991), 697-705
- J. Struijs, J. Stoltenkamp, **D. van de Meent**. SimpleTreat, a box model of the behavior of micropollutants during waste water treatment. Water Research, 25(1991), 891-900
- W.J.G.M. Peijnenburg, M.J. 't Hart, H.A. den Hollander, **D. van de Meent**, J.H. Verboom, N.L. Wolfe. Reductive transformations of halogenated aromatic hydrocarbons in anoxic sediment systems: Kinetics, mechanisms and products. Environ. Toxicol. Chem., 11(1992), 289-300
- W.J.G.M. Peijnenburg, M.J. 't Hart, H.A. den Hollander, **D. van de Meent**, J.H. Verboom, N.L. Wolfe. QSARs for predicting biotic and abiotic reductive transformation rate constants of halogenated hydrocarbons in anoxic sediment systems. Environ. Toxicol. Chem., 11(1992), 301-314
- C.A.F. Romijn, R. Luttik, **D. van de Meent**, W. Slooff, J.H. Canton: Presentation of a general algorithm to include effect assessment on secondary poisoning in the derivation of environmental quality criteria. Ecotoxicol. Environ. Safety, 26(1993), 61-85
- G.M.J. Tubbing, W. Admiraal, R.F.M.J. Cleven, M.Iqal, **D. van de Meent**, W. Verwey. The contribution of complexed copper to the metabolic inhibition of algae and bacteria in synthetic media and river water. Water Res., 28(1993), 37-44
- J. de Bruijn, E. Guinée, **D. van de Meent**. Rekening houden met atmosferische depositie in normstelling and bodembeleid. Proceedings Symposium Atmosferische depositie and bodemkwaliteit, December 1992
- D.T. Jager, C.J.M. Visser, **D. van de Meent**. Uniform system for the evaluation of substances. IV Distribution and intake. Chemosphere, 29(1994), 353-369
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- D. van de Meent**, J.H.M. de Bruijn, F.A.A.M. de Leeuw, A.C.M. de Nijs, D.T. Jager, T. Vermeire. Exposure modeling. In: Risk Assessment of Chemicals, (C. J. van Leeuwen and J.L.M. Hermens, eds.), pp 103-145. Kluwer, 1995.
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- O. Klepper, J. Bakker, T.P. Traas, **D. van de Meent**. Mapping the Potentially Affected Fraction (PAF) of species as a basis for comparison of toxic ecotoxicological risks between substances and regions. J. Hazardous Materials, 61, 337-344 (1998)
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- D. van de Meent**, T.E. McKone, T. Parkerton, M. Matthies, M. Scheringer, F. Wania, R. Purdy, D. Bennett. Persistence and transport potentials of chemicals in a multi-media environment. In: Persistence and long-range transport of chemicals in the environment (G. Klečka *et al.* eds.), pp. 169-204. SETAC Press, Pensacola (2000).
- M. Huijbregts, U. Thissen, J. Guinée, T. Jager, D. Kalf, **D. van de Meent**, A. Ragas, A. Wegener Sleeswijk, L. Reijnders. Priority assessment of toxic substances in Life Cycle Assessment. I: Calculation of toxicity potentials for 181 substances with the nested multi-media fate, exposure and effects model USES-LCA. Chemosphere, 41(2000), 541-573.
- M. Huijbregts, U. Thissen, T. Jager, **D. van de Meent**, A. Ragas. Priority assessment of toxic substances in Life Cycle Assessment. II: Assessing parameter uncertainty and human variability in the calculation of toxicity potentials. Chemosphere, 41(2000), 575-588.

- T. P. Traas, **D. van de Meent**, L. Posthuma, T. H.M. Hamers, B. J. Kater, D. de Zwart, T. Aldenberg. Potentially Affected Fraction as measure of toxic pressure on ecosystems. In: Use of Species Sensitivity Distributions in Ecotoxicology, eds. L. Posthuma, G.W. Suter, T.P. Traas. Lewis Publishers (2002).
- M. Huijbregts, **D. van de Meent**, M. Goedkoop, R. Spriensma. Ecotoxicological Impacts in Life Cycle Assessment. In: Species Sensitivity Distributions in Ecotoxicology, eds. L. Posthuma, G.W. Suter, T.P. Traas. Lewis Publishers (2002).
- W. Peijnenburg, H. den Hollander, **D. van de Meent**, D. de Zwart. Ontwikkeling en toepassing van een milieukwaliteitsindicator bestrijdingsmiddelen. *H<sub>2</sub>O*, 18(2002), 28-30.
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- M.A.J. Huijbregts, L.M.J. Geelen, E.G. Hertwich, T.E. McKone, **D. van de Meent**. A comparison between the multimedia fate and exposure models CalTOX and USES-LCA based on the population intake fraction of toxic pollutants. *Environ. Toxicol. Chem.* 24(2005), 486–493
- D. van de Meent**, M.A.J. Huijbregts. Calculating LCA effect factors from PAF-based ecotoxicological response functions. *Environ. Toxicol. Chem.* 24(2005), 1573-1578.
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- M.A.J. Huijbregts, L.J.A. Rombouts, A.M.J. Ragas, **D. van de Meent**. Human-Toxicological Effect and Damage Factors of Carcinogenic and Noncarcinogenic Chemicals for Life Cycle Impact Assessment. *Integrated Environmental Assessment and Management*, 1(2005), 181–192.
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- A. Hollander, A. Ragas, M. Huijbregts, **D. van de Meent**. BasinBox: A Generic Multimedia Fate Model for Predicting the Fate of Chemicals in River Catchments. *Hydrobiologia*, in press.
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**RIVM reports**

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