



**Aarhus Convention – Preparation of an Instrument for a
Pollutant Release and Transfer Register
Comments from the European ECO Forum prior to the
Inter-Sessional Meeting of the PRTR Working Group
April, 2001**

Substances - elements

We propose that the PRTR instrument has the following elements:

- Priority (and mandatory) list of substances
- Secondary list of substances, optional at first, but later becoming mandatory
- A mechanism for further review of the substance list, including a number of reference criteria

Substances – existing lists

Our goal, even though we admit it to be impossible, would be the perfect knowledge of material use and flows. (Although without a strategy for reduction of hazards and risks, even this would be insufficient.) Yet there is insufficient data available on the overwhelming majority of chemicals (even those in use in high volume) to do a “perfect” prioritisation. Existing inventory lists and “action” lists from various sources have various quirks or are incomplete.

Even within the existing studies though it is clear that there are very large numbers of hazardous chemicals: approximately 2500 have been identified for the purposes of classification and labelling under Directive 67/548/EEC [1]; the Danish Environmental Protection Agency has used a QSAR technique [2] and prepared a draft “advisory list” of 20,000 substances estimated to have one or more of a limited number of dangerous properties (mutagenic, carcinogenic, dermatologically allergenic, acute oral toxicity, or dangerous to the aquatic environment) [3].

The EU’s EPER list [4] is an obvious point of focus, but we can only repeat that this is a very limited substance list, although we also recognise that it would result in improved access to information in probably the majority of countries. The EPER list also has connections with other existing and international substance lists (such as the Kyoto Protocol list).

As an example of a proven manageable list, the US Toxics Release Inventory sets a standard for being a working inventory with around 650 substances, but there are some notable omissions (such as carbon dioxide), which would be complemented by the addition of the EPER list.

Other priority lists that should be incorporated (and we note that there are many overlaps) include:

- UN Persistent Organic Pollutants
- UN Prior Informed Consent Chemicals
- UNECE Heavy Metal and POPs protocols
- Protocol to Abate Acidification, Eutrophication and Ground-level Ozone
- OSPAR List of Chemicals for Priority Action
- OSPAR 1998 List of Candidate Substances [itself a number of lists]
- European Commission's [draft] list of priority candidate endocrine disruptors
- International Agency for Research on Cancer
- Dangerous substances classified for Directive 67/548/EEC on labelling and packaging

As a contribution to the technical discussions, we will append a spreadsheet of chemical lists, although we request some time to refine the organisation of this list and will send an improved version later.

We also note that there should be text which encourages the creation of national lists. Such lists should be developed with public participation.

Substance Criteria

For the third element (the review mechanism), we propose the following text:

“The Meeting of Parties shall from time to time, or in response to petition, consider the addition or deletion of chemicals to the list. Substances on the list shall have, or be reasonably expected to have, one or more of the following characteristics:

- (i) explosive
- (ii) oxidising
- (iii) highly flammable
- (iv) flammable
- (v) irritant
- (vi) harmful
- (vii) toxic/very toxic
- (viii) carcinogenic
- (ix) corrosive
- (x) infectious
- (xi) teratogenic
- (xii) mutagenic
- (xiii) those releasing toxic or very toxic gases in contact with water, air or acid
- (xiv) those capable of any means, after disposal, of yielding another substance, *e.g.*, a leachate, which possesses any of the characteristics listed in this Schedule
- (xv) ecotoxic
- (xvi) endocrine-disrupting or suspected of being endocrine-disrupting

- (xvii) those contributing to eutrophication (in particular, nitrates and phosphates)
- (xviii) those having an unfavourable influence on the oxygen balance of water
- (xix) persistent
- (xx) bioaccumulative
- (xxi) radioactive
- (xxii) those having or which may have an adverse effect on the stratospheric ozone layer
- (xxiii) those gaseous constituents of the atmosphere absorbing and re-emitting infrared radiation [greenhouse gases]
- (xxiv) those contributing to acid rain
- (xxv) those contributing to the build-up of tropospheric ozone and other oxidising photo-chemicals [VOCs]
- (xxvi) genetically modified organisms

Determination of the suitability of substances for listing shall be based on the precautionary principle, and shall take into account synergistic effects which might increase the hazardous properties of particular substances.”

These categories have their origins in existing international texts: for example categories (i)-(xv) are those listed in Directive 91/689/EEC of 12 December 1991 on hazardous waste. (It is intended that substances and preparations with neuro-toxic and immuno-toxic properties or characteristics would be covered within the toxic and/or harmful categories); categories (xvii) and (xviii) are from the Directive 96/61/EC on Integrated Pollution Prevention and Control. Ozone depleting substances, green house gases, acid rain gases and GMOs are all subject to various international agreements.

Media

The register should be fully integrated from the start, thus all media (air, land, water) should be incorporated. Some of these categories should be further sub-divided:

- Air
 - Stack (point) emissions
 - Fugitive emissions
- Water
 - Freshwater
 - Estuarial waters
 - Marine
- Land
 - Underground injection
 - Direct to land
- To Treatment Plants
- Disposal
 - Landfill
 - Incineration (with/without energy recovery)
 - Surface impoundment
- Recycling
- Reuse
- Accidental releases

At a later stage, we still believe that there should be reporting of substances transferred into products, and reporting of chemical use so that there can be some idea of overall toxic use and efficiency of that use and/or potential for release into the environment or exposure during actual use or end disposal.

A further point is that storage of chemicals should be catalogued in the inventory – this is often the most immediate hazard in a community. Given the nature of the hazard, it may be that the “anticipated storage amount” for the next year should be reported, so that information is available to the public and workers on a more timely basis.

Thresholds

We are not at this point proposing any specific thresholds, although we are inclined to consider that thresholds should be based on **chemical use** i.e. the quantity of a chemical processed on site. This would make particular sense if the amount of chemical used was also reported: proportions of chemicals wasted could be assessed. In addition, companies with highly efficient processes, good management, good pollution control equipment would still report releases rather than disappearing from the system, potentially setting a benchmark for pollution prevention and control.

Chemical use thresholds would not cover all circumstances where reporting should be required: by-products of a process may be highly significant pollutants and would need to be covered.

We also consider that thresholds should not change between media for the same substance. Whilst it can be argued that some pollutants have more significance in one media than another, such an approach would damage the integration of the PRTR.

At least theoretically we can anticipate that using economic thresholds, such as numbers of employees, or turnover would result in loopholes and/or difficulties in comparisons from one area to another. A relatively small or medium-sized business might be highly polluting due to lack of available resources for investment.

We also point out a couple of features of note from the Inventory of Sources and Releases in England and Wales (5). The system uses individual thresholds for each substance/medium, but requests that reporters note if they are below the threshold but above zero. A further refinement exists for VOCs, where reports (name and quantity) have to be filed for any individual VOC released over 1 tonne.

Facilities/Activities

In our opinion, Annex 1 of the Aarhus Convention provides a starting point for consideration of activities. However, there are some activities that are missing from the list which should have reporting duties under a PRTR protocol. We propose to add at least:

- Coal and ore mining (where not covered by paragraph 16 of Annex 1)
- Dredging operations
- Timber treatment

A further “catch-all” phrase should be added:

“Any activity not covered by [the list] but where use, releases and transfers of substances in [the substance list] are of a comparable significance”.

Diffuse activities also need to be considered and could include:

- Transport systems (eg railways, inland waterways)
- Road transport
- Small fuel suppliers
- Domestic sources
- Agricultural activities not covered by paragraph 15 of Annex 1 (and including aquacultural activities)
- Forestry operations
- Dry-cleaning operations
- Other activities that are below the thresholds for activities in Annex 1, but which would be significant contribution to releases/transfers in combination

Transfers on-site

Our expectation is that on-site and off-site transfers should be dealt with equitably.

The current version of the working document defines on-site transfer as:

“(c) On-site movement of potential pollutants for treatment, energy recovery, recycling or disposal”.

Thus disposal of a listed substance on land or by incineration within a facility would not escape reporting. The intent is not to make every movement of a chemical within a facility’s boundary subject to reporting requirements, but to learn about waste disposal and fate of pollutants irrespective of the actual location of the disposal/treatment site within or without a particular boundary. We could imagine that smaller facilities would be required to report a relatively greater number of transfers than larger facilities if only transfers off-site were subject to reporting.

As mentioned previously, the presence of a hazardous chemical on a site may well be of public interest though, and this point could be covered by reporting of the maximum quantity on site, or anticipated to be on site, during a reporting year.

REFERENCES

1. Directive 67/548/EEC on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (as amended)
2. QSAR: Quantitative Structure Activity Relationship is a modelling technique that assesses the properties of substances based on their structural relationships with substances of measured properties.
3. See <http://www.mst.dk/news/06100000.htm> for further details.
4. European Commission (2000). Guidance document for EPER implementation.
5. See the Environment Agency’s web site at: http://216.31.193.171/html/b_isr.htm