

Risk Management in the Chemical Industry

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Structure of presentation

- Chemical industry overview
- Risk related to production
- Risk related to products
- Conclusions

Overview of the chemical industry

- Wide variety of chemical products
- Co-existence of different chemical processes, from simple to extremely complex
- Chemical giants and thousands of SMEs in Japan, France and Italy

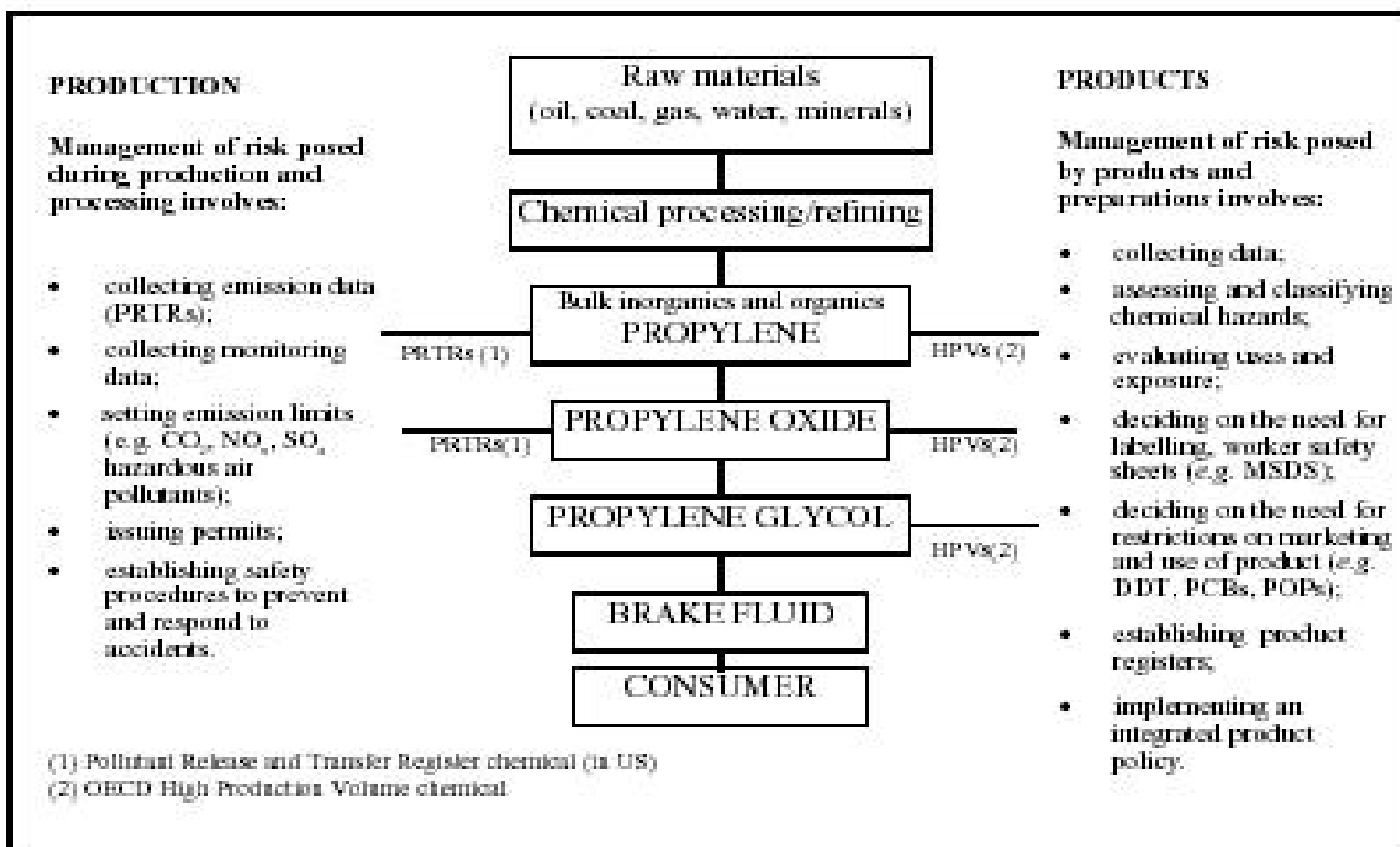
Fate of chemical substances

- Sold on their own or as part of a preparation
- Used to produce other chemicals or sold to other chemical companies or to other industries
- Few chemicals sold directly to consumers

Hazard vs Risk

- Hazard: Inherent property of a substance having the potential to cause undesirable consequences to man and/or the environment
- Risk: Probability of an adverse effect to man and/or the environment, resulting from a given exposure to a hazard

Risk related to production



How to reduce production risks?

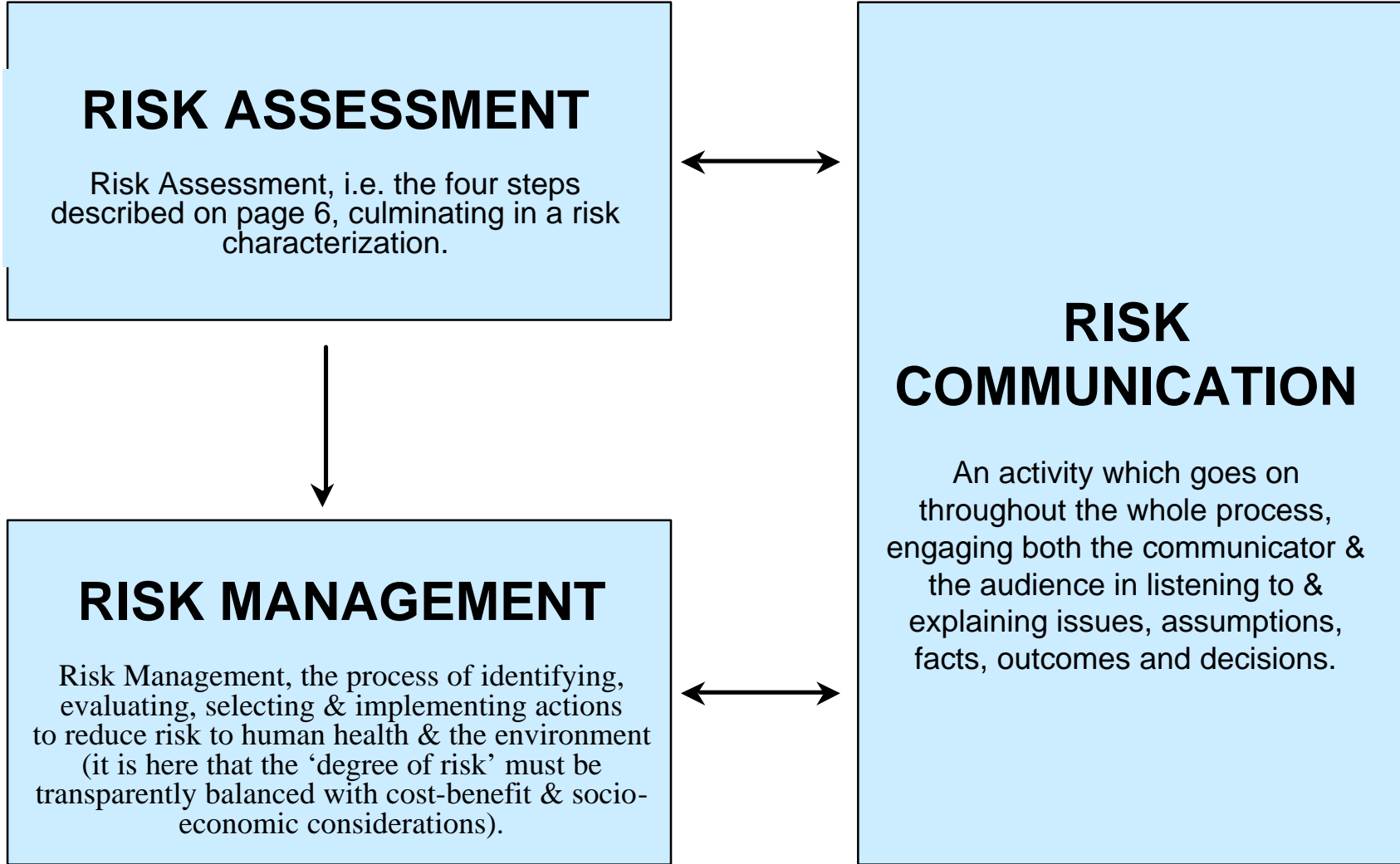
- Governments (tight measures for installations, licenses, pollutants' emissions)
- Industry (Responsible Care, APELL, ERIC cards and TREM cards)

Areas for improvement

- Situation still critical in several Developing Countries
- use of non-renewable resources not sustainable in the long-term

Risk related to products

- Perceived lack of information on chemicals and their use
- Existing chemicals vs chemicals already on the market
- Endocrine effects of chemicals and POPs



HAZARD IDENTIFICATION, of the adverse effects which a substance can cause;



HAZARD CHARACTERIZATION, typically a dose response assessment to estimate the relationship between exposure to a substance and the incidence and severity of effects (PNECs - Predicted No Effect Concentrations are established);



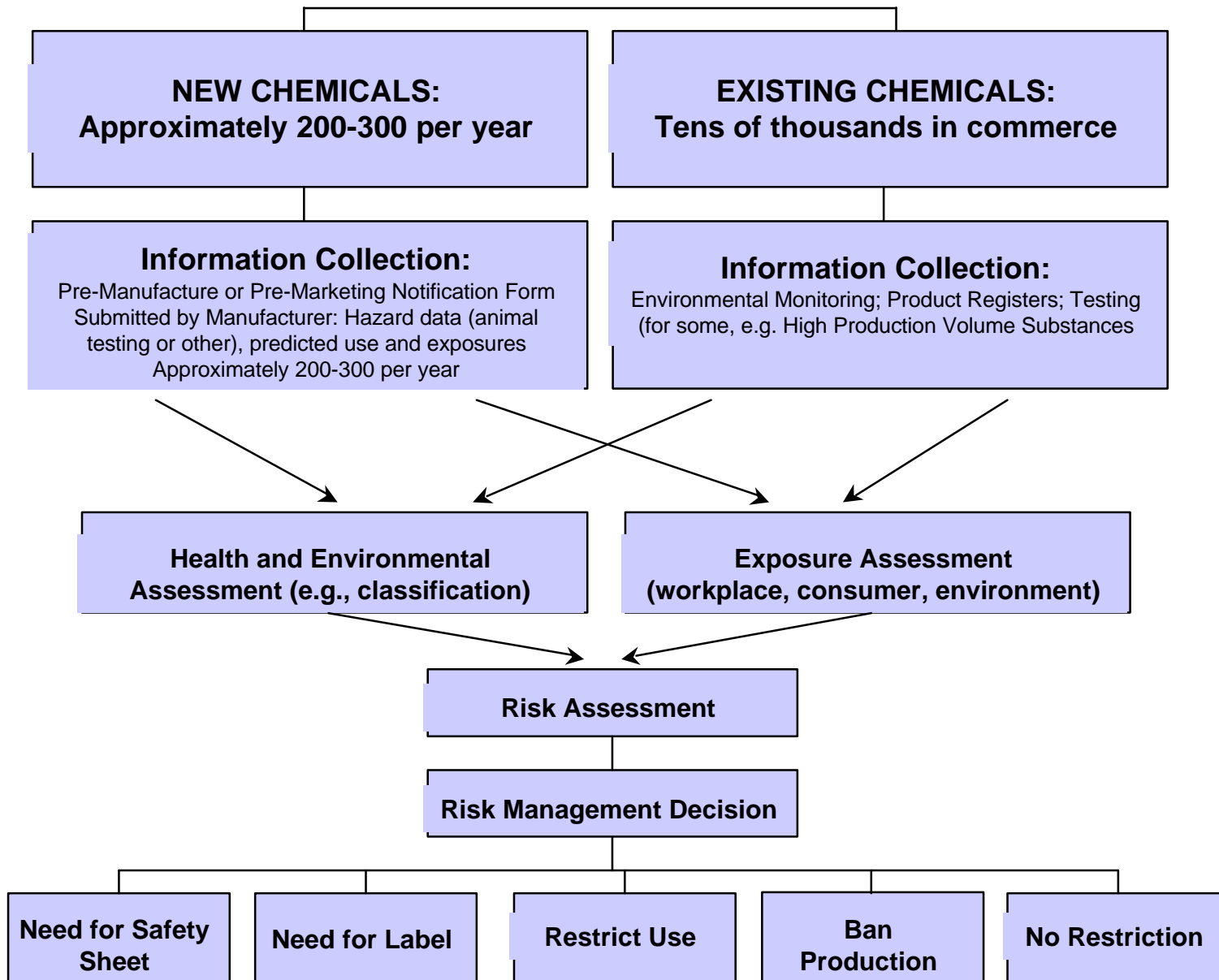
EXPOSURE ASSESSMENT, to identify the source of and likely exposures to a substance adverse effects which a substance can cause;



RISK CHARACTERIZATION, as an estimation of the incidence and severity of any adverse effects likely to result from actual or predicted exposure (based primarily on a comparison of the PEC with PNEC; a ratio of less than one indicates that a substance is not of concern unless additional specific information is or becomes available to the contrary).



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Risk management measures Governments

- Data collection
- Hazard assessment and classification
- Evaluation of uses and exposures
- Labelling and packaging requirements
- Restriction on marketing and use (DDT, PCBs, POPs)
- Product Registers
- Integrated Product Policy

Risk management measures Industry

- Responsible care applied to products:
Product Stewardship
- High Production Volume (HPV) Initiative
- Long Range Research (LRI) Initiative

HPV Initiative

- Data on hazard and initial risk assessment on more than 1000 High Production Chemicals
- 90% of the world's chemical production
- data based on the OECD Screening Information data Set
- Timeline: 2004

LRI Initiative

- Funding of independent scientific research on the impact of chemicals of people and the environment
- Focus on:
 - endocrine disruption
 - development of methods for risk assessment
- First results: 2002

Chemical Industry's views on Risk management (1)

- Co-operation between Governments, Industry and other interested stakeholders
- Scientifically sound risk assessment methods
- Transparency in the review and utilisation of Risk Assessment data

Chemical Industry's views on Risk management (2)

- Support for the Precautionary Approach
- Broad use of Scientific Peer Review
- Standardisation of risk assessment principles and methodologies