



## REACH and your company

REACH is the new European legislation on registration, evaluation and authorisation of chemicals that are imported or produced within the European Union. Registration requires hazard identification of the substances:

- physicochemical (risk of explosion, combustion ...);
- toxicological (toxicity for different routes of administration, potential risk for cancer, possible harmful effects for the foetus);
- ecotoxicological (toxic effects on organisms in the environment).

For this hazard identification a set of standardised tests are required to be performed according to the principles of GLP (Good Laboratory Practice). In REACH dossiers, human and ecological risk assessment have to be documented for the various user scenarios of a substance in downstream processes and products. This needs exposure modelling of the chemicals. Also the socio-economic impact in specific applications is taken into account. A REACH dossier therefore requires a multidisciplinary team. VITO offers the possibility to guide you through the entire process.



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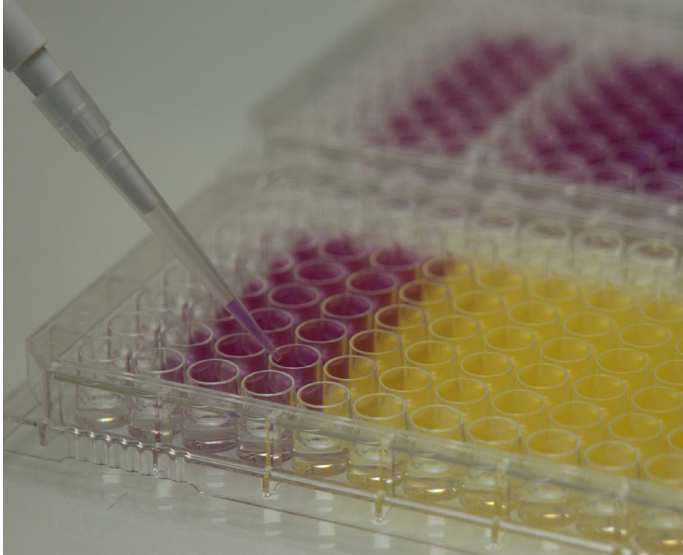


## VITO and REACH

We are pleased to guide your  
REACH projects!

# VITO and REACH

VITO offers expertise in toxicology, ecotoxicology, exposure modelling and risk evaluation. With the support of the VITO chemistry lab and the department for process and materials technology, we can identify the risks during the entire lifetime of a product.



## VITO: risk models and REACH

VITO has many years of experience and is specialised in:

- » exposure modelling;
- » human and environmental risk assessment;
- » life cycle analysis;
- » environmental economy.

VITO combines the expert knowledge for assessment of the human and environmental risks from manufacture to waste phase of a product, as required by REACH!

## VITO: toxicology and REACH

VITO has experience in alternative toxicity tests which go along with the 3Rs (Replacement, Reduction, Refinement) and are recommended by REACH to reduce the number of test animals.

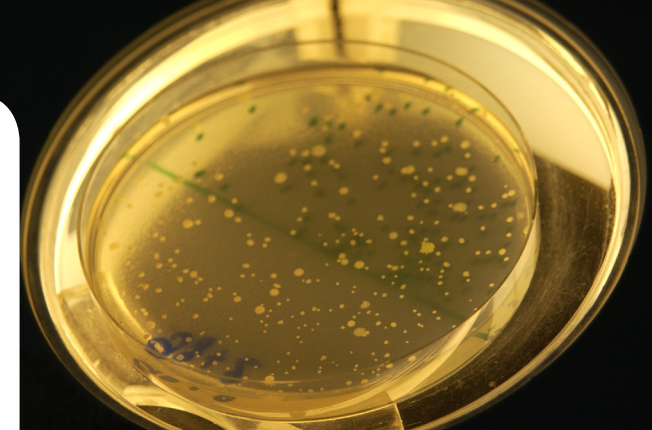
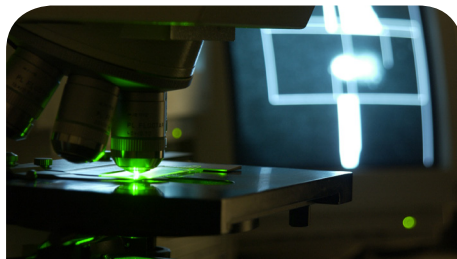
CARDAM (CENTRE FOR ADVANCED R&D ON ALTERNATIVE METHODS) was founded by VITO to promote and develop new alternative toxicity tests ([www.cardam.eu](http://www.cardam.eu)).

VITO toxicologists are experienced in the evaluation of toxicity data for risk characterisation, an important component of the REACH dossier.



## VITO offers the following instruments for risk assessment of chemicals:

- » in vitro toxicity tests;
- » ecotoxicity tests;
- » exposure modelling of substances in the environment;
- » up and downstream substance and product analysis;
- » environmental-economy aspects and knowledge of process technology;
- » human and environmental risk assessment.



## Available (eco)toxicity tests

- » **Cellular toxicity tests:**  
various cell lines are available
- » **Genotoxicity tests**
  - Micronucleus test (OECD 487)
  - Comet assay (various cells)
  - Ames test (bacterial assay, OECD 471)
  - VITOTOX® (bacterial assay)
  - UMU-C-test (bacterial assay, ISO 13829)
- » **Alternative tests**
  - Eye irritation (BCOP: OECD 437; 3D human corneal models)
  - Skin Corrosion (Corrositex™: OECD 435; 3D models: OECD 431)
  - Skin irritation (3D skin models)
  - Skin sensitization (VITOLENS™)
  - Reproductive toxicity in zebrafish (Teratogenesis, Neurotoxicity)
- » **Ecotoxicity test**
  - Aquatic tests:  
bacterial test (Microtox®, ISO 11348-3), unicellular algae (OECD 201), water flea toxicity tests (OECD 202, 211), fish toxicity tests (diverse species) (OECD 203, 204, 212)
  - Soil tests:  
bacterial tests (Microtox SP®), plant growth test (OECD 208), toxicity tests on compost worm (OECD 207, 222)
  - Biodegradation tests (OECD 301, 302)