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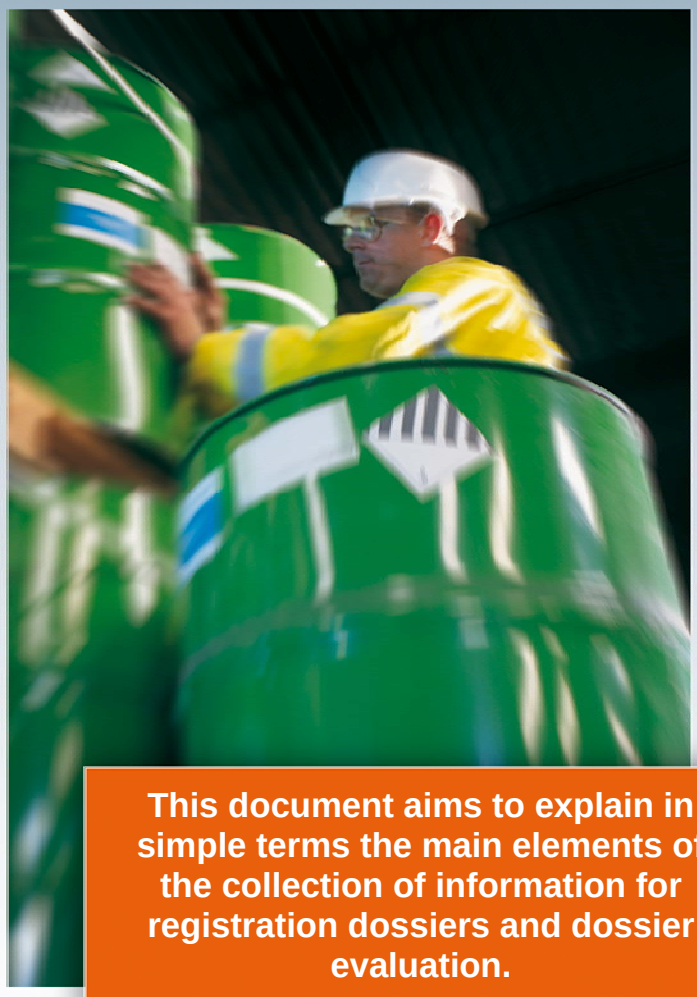
Guidance in a nutshell

Registration data and dossier handling



This document aims to explain in simple terms the main elements of the collection of information for registration dossiers and dossier evaluation.

LEGAL NOTICE

This document contains guidance on REACH explaining the REACH obligations and how to fulfil them. However, users are reminded that the text of the REACH regulation is the only authentic legal reference and that the information in this document does not constitute legal advice. The European Chemicals Agency does not accept any liability with regard to the contents of this document.

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The European Chemicals Agency (ECHA) is producing a series of “simplified” versions of the REACH Guidance Documents in order to make the corresponding REACH guidance published by the Agency more accessible for industry. As short summaries, these documents cannot contain all details included in the full guidance documents. Thus, in case of doubt, we recommend that you consult the full guidance documents for further information.

If you have questions or comments in relation to this document please send them (quote the reference and issue date) using the information request form. The form can be accessed via the Contact ECHA page at:

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TABLE OF CONTENTS

1 INTRODUCTION – WHAT DOES THIS DOCUMENT AIM TO DO?

REACH[1] is the Regulation for Registration, Evaluation, Authorisation and Restriction of Chemicals. The European Chemicals Agency (ECHA) administers the scheme. REACH places the responsibility on industry to manage the risks that chemicals may pose to human health and the environment. All manufacturers and importers of chemical substances, whether neat, components of chemical mixtures or incorporated into produced articles from which they can be released, must identify and manage risks linked to the substances they manufacture and market and provide appropriate safety information down the supply chain to their users. Therefore, manufactures or importers have to collect or generate data on their substances and assess how risks to human health and the environment can be controlled by applying and recommending suitable risk management measures. To this end, so-called exposure scenarios need to be developed in certain cases and communicated in an annex to the safety data sheet in order to enable actors down the supply chain to comply with the conditions for safe use set out in them. The summary of the collected data and the corresponding chemical safety assessment (including exposure scenarios, if applicable) is required to be submitted to ECHA in a registration dossier.

There are two key central concepts in REACH that go beyond the former chemical control schemes:

- Industry is responsible for safe use of chemicals, with ECHA and the other regulators targeting their work to spot checks or to especially problematic areas.
- Risk assessment is central to the various REACH processes.

This guide aims to give a simple and concise introduction to the information content of registration dossiers for chemical substances under REACH, in particular to the information requirements, i.e. the data on physicochemical, toxicological and ecotoxicological properties, and to the chemical safety assessment. In addition, practical guidance is provided on how to prepare and submit a registration dossier. Finally, essential follow-up activities required by ECHA and the registrants upon registration submission will be outlined.

[1] Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006.

2 WHO SHOULD READ THIS GUIDANCE IN A NUTSHELL?

This document is designed to assist manufacturers, importers and only representatives of **substances on their own, in a preparation or in articles** based in the European Economic Area[2] (EEA) in clarifying their obligations under REACH relating to registration and to help them make the right decisions to ensure that they comply with the REACH legislation. It is also relevant to companies outside the EEA exporting substances on their own, in preparations or in articles to the EEA who need to check that those importing their products into the EEA are complying with the requirements the REACH Regulation places on them.

This Guidance in a nutshell is aimed especially at management and less experienced regulatory affairs professionals to help them make decisions on how to proceed with their registrations and to assess advice they may be given by other parties. It is also intended to introduce readers to the subject and to provide access to more detailed information necessary to prepare the registration dossiers, in particular by means of the references chapter.

If they are still in doubt about their status, companies are advised to identify their roles and check their obligations by running the Navigator tool on the website of ECHA[3], where other guidance documents can also be found.

[2] The European Economic Area is composed of Iceland, Liechtenstein, Norway and the 27 EU Member States.

[3] http://guidance.echa.europa.eu/navigator_en.htm

3 ILLUSTRATION OF THE SCOPE OF THIS GUIDE

The flowchart below aims to give a simple general overview of the REACH processes, particularly with respect to activities involving ECHA. At the same time, the scope of the present guide – registration and (dossier) evaluation – is shown by the boxes with a red border.[4]

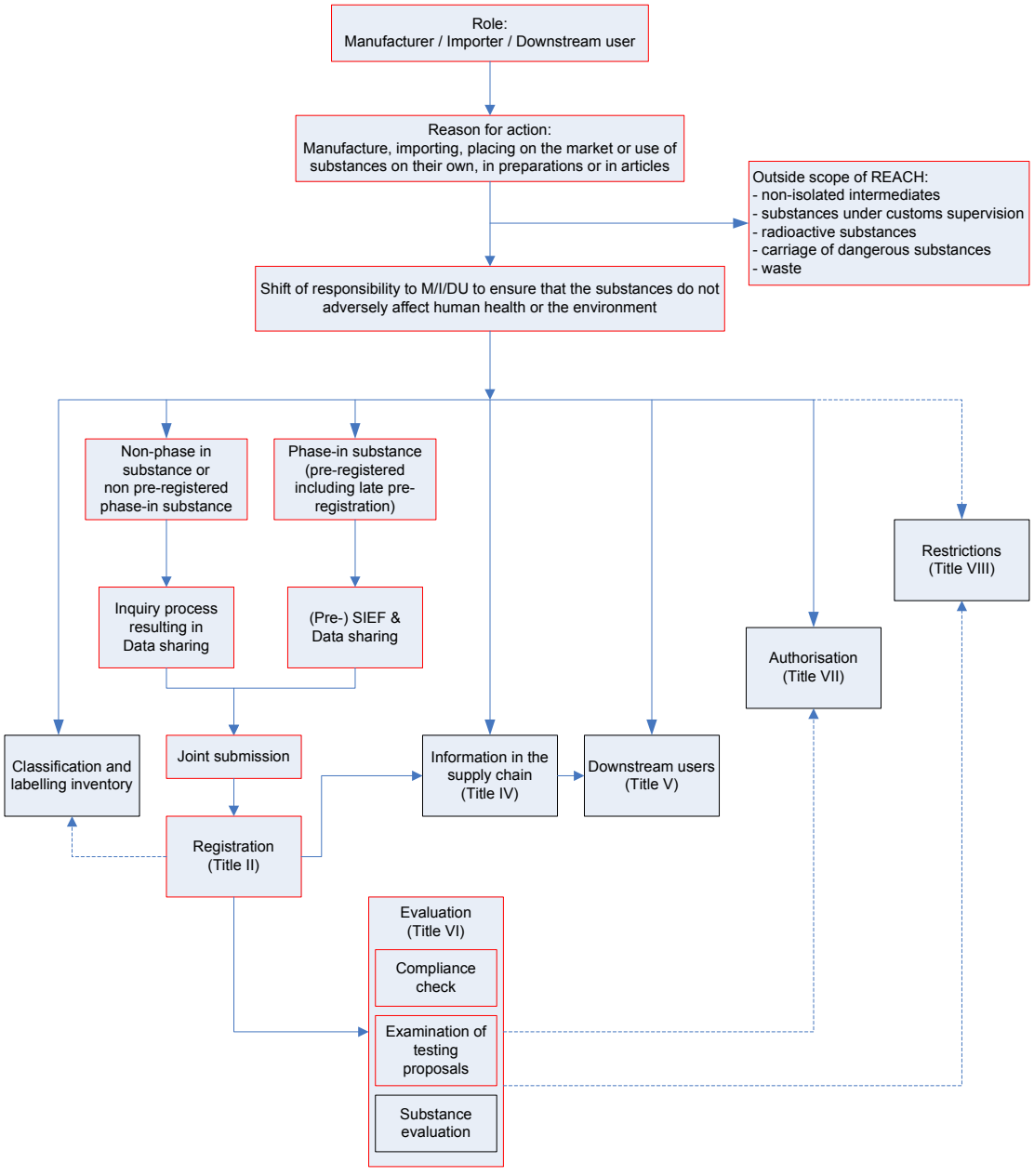

Figure 1: General overview of REACH processes and scope of this guide

[4] Note that the flowchart may inevitably give an over-simplification of certain aspects of complex REACH processes and the inter-relationship between them. It should also be highlighted that 'downstream users' mentioned in this flowchart do not have a registration obligation.

4 REGISTRATION OF SUBSTANCES – IN BRIEF

The basic definition of a substance is a very broad one which includes not only potentially hazardous industrial chemicals, but every type of chemical substance manufactured in or imported into the EEA. It therefore also includes substances which are already closely regulated by other legislation or which typically cause no or only minimal risk to human health and the environment. For these and other reasons there are some complete or partial exemptions from REACH requirements, e.g. for: radioactive substances; intermediates; waste; substances used in medicinal products, food or feedingstuffs; substances in Annex IV and V; polymers; etc.

Unless explicitly exempted from its scope, REACH requires registration of substances with ECHA if they are manufactured or imported at 1 tonne per year or more by submission of a dossier including physicochemical, toxicological and ecotoxicological information. As of 1 June 2008, new substances (so-called 'non-phase-in' substances) have to be registered before being manufactured or imported, but substances that are already on the EEA market (i.e. 'phase-in' substances that have been 'pre-registered') benefit from transitional arrangements that allow them to be registered by set deadlines depending on their tonnage and/or hazardous properties (i.e. CMRs[5] or R50/53[6]). The deadlines are presented in figure 2 below.

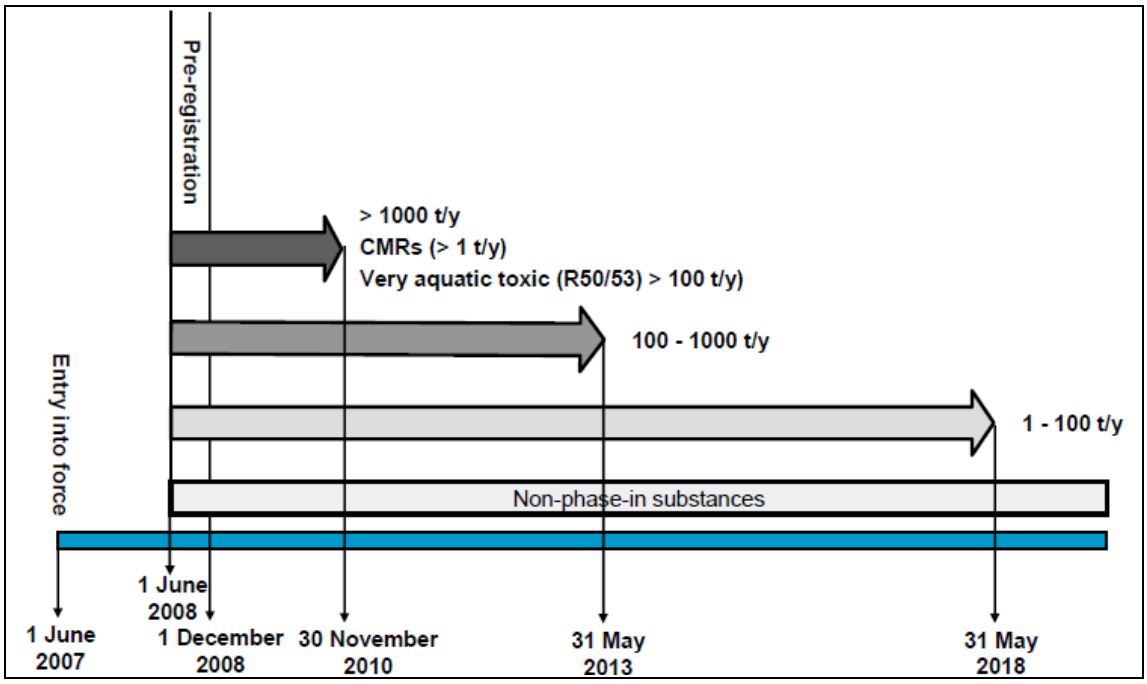

Figure 2: Registration deadlines under REACH

[5] CMRs are substances classified as Carcinogenic, Mutagenic or toxic to Reproduction, category 1 or 2, in accordance with Directive 67/548/EEC.

[6] R50/53 are substances classified as very toxic to aquatic organisms which may cause long-term adverse effects in the aquatic environment in accordance with Directive 67/548/EEC.

For all substances that are manufactured or imported in volumes of 10 tonnes or more per year, a Chemical Safety Assessment (CSA) has to be carried out, and recorded in the registration dossier as a stand-alone document, a so-called Chemical Safety Report (CSR).

Upon submission all registration dossiers must pass a 'completeness check' by ECHA to ensure that all elements required by the legislation (including the required information and the registration fee) have been provided.[7] If this check is successful, ECHA issues a registration number.[8]

5 INFORMATION REQUIREMENTS AND CHEMICAL SAFETY ASSESSMENT

The aim of this chapter is to explain what information is required (or may be omitted) to complete a registration dossier under REACH. In order to obtain the required information, the registrants have to assess and document the different properties of the substance (see Section 5.1). Information to be normally provided in each dossier is listed in Annex VI. So-called 'standard information requirements' depend on the tonnage band and are detailed in column 1 of Annexes VII through X and 'specific rules' for their adaptation are given in column 2 of these Annexes (see Section 5.2). Further 'general rules' on how to adapt the standard information requirements are included in Annex XI (see Section 5.3). Section 5.4 will outline the CSA.

5.1 PROPERTIES OF SUBSTANCES

The registrant must obtain information on the properties of the substance. The registration information requirements depend on the tonnage of the substance, as discussed in the next section. It is important to keep in mind the purpose of determining these data:

- To define and characterise the identity of the substance
- To identify the hazardous properties for hazard communication
- To identify and quantify the hazardous properties for risk assessment
- To obtain parameters necessary for exposure assessment for risk assessment.

These studies are intended to model the (potential) effects of the chemical substance on the systems of real interest, i.e. human health and the environment. The information is then used by industry to make sure the substance can be used safely and is presented in the registration dossier.

[7] Note that in practice the dossier has to pass a virus and XML format check as well as a so-called 'business rules validation' in order to be accepted for the completeness check. For further information on this, please see REACH-IT Industry User Manual Part 6 – Dossier submission and Data Submission Manual 8 – Business Rules validation, to be found at http://echa.europa.eu/reachit/supp_docs_en.asp

[8] For more information on the 'completeness check' see Section 7.1. of this document.

The hazardous properties of chemicals can be categorised as follows:

- Physicochemical hazards, such as explosivity, oxidising properties and flammability, are caused by the intrinsic physical or chemical properties of the substance.
- Toxicological hazards arise from chemicals causing harmful effects to humans. Toxic effects may be acute or chronic, local or systemic and reversible or irreversible, resulting from oral, dermal or inhalation exposure and are influenced by the toxicokinetic profile of the substance. Specific toxic effects include corrosivity and irritancy to skin, eyes and the respiratory tract. Specific toxic effects include skin and respiratory sensitisation, target organ toxicity, carcinogenicity, mutagenicity and effects on reproduction.
- Environmental hazards relate to ecosystems for the different compartments of air, soil or water, including groundwater and sediment, and hence are influenced by the environmental fate of the chemical and its degradation products.

There are different ways to fulfil the information needs for registration, as discussed in the next sections. As a last resort new studies may have to be conducted.

5.2 STANDARD INFORMATION REQUIREMENTS

Annexes VI to XI specify the information that shall be submitted for registration purposes as part of the 'technical dossier'. This section addresses the information requirements for each[9] registration (Annex VI) and the 'standard information requirements' depending on the tonnage band (Annexes VII–X).[10] Special information requirements apply to certain types of intermediates.

Substances

The general technical, commercial and administrative information needed for all registrations is specified in Annex VI of the REACH Regulation. This includes the following key information:

1) Identity of the registrant(s)
2) Identity of the substance
3) Information on the manufacture and use(s) of the substance
4) Classification and labelling of the substance
5) Guidance on safe use
6) Exposure information for substances in quantities of 1 to 10 tonnes.

It should be noted that the registrant must establish the chemical identity of the substance in the registration dossier. This information shall be adequate to enable each substance to be identified sufficiently. If it is not technically possible, or if it does not appear scientifically necessary, to give information on one or more of the substance identification parameters, the reasons shall be clearly stated.

[9] Except for certain types of intermediates, see later in this section.

[10] Annex XI will be addressed more in detail in the next section.

The standard information on the physicochemical, toxicological and environmental properties required is listed in column 1 of Annexes VII to X of the Regulation. These Annexes also include specific rules on the circumstances in which data may be omitted or when additional studies are triggered (see column 2 of Annexes VII-X). For the lowest tonnage level, the standard requirements are specified in Annex VII, and every time a new tonnage level is reached, the requirements of the corresponding Annex have to be added. For each registration the precise information requirements will differ, according to tonnage, hazard, use and exposure. Note that any additional information that is relevant and available to the registrant must be included in the registration dossier, regardless of the applicable tonnage band.

As a minimum, a dossier should include Annex VI information and in addition the information based on Annexes VII to X as presented in Table 1.

Table 1: Standard information requirements of Annexes VII - X

Substance criteria	Standard Information Requirements
Non-phase-in substances at ≥ 1 tonne per year	Annex VII
Phase-in substances at ≥ 1 tonne per year meeting one or both of the criteria specified in Annex III	Annex VII
Phase-in substances at ≥ 1 tonne per year which do not meet either of the criteria specified in Annex III	Annex VII, section 7 (physicochemical properties of the substance)
Substances at ≥ 10 tonnes per year	Annexes VII and VIII
Substances at ≥ 100 tonnes per year	Annex VII and VIII data and testing proposals for information specified in Annex IX
Substances at ≥ 1,000 tonnes per year	Annex VII and VIII data and testing proposal for information specified in Annexes IX and X

If any of the standard studies required for Annexes VII to X are impossible to conduct for technical reasons they can be omitted, with a justification in the technical dossier to explain this. Testing may in certain cases also be omitted based on exposure assessment, if it can be demonstrated that there is no exposure to humans or the environment (so-called 'substance-tailored exposure-driven testing').[11]

New studies should be conducted according to the standard EU test methods, or equivalent guidelines, such as those from the Organisation for Economic Co-operation and Development (OECD). Toxicology and ecotoxicology studies begun after 1 June 2008 should be GLP[12] compliant, but there is no obligation to have GLP-compliant tests for physicochemical properties.

Note that the registration dossier shall also include an indication as to which of the information submitted relating to the manufacture and use(s), the classification and labelling, study summaries or robust study summaries for Annexes VII to XI or the

[11] See Section 5.3 for further details on this and other 'general rules' for adaptation of the standard testing regime set out in Annexes VII to X.

[12] Good Laboratory Practice provided for in Directive 2004/10/EC (see REACH Article 13 (4)).

Chemical Safety Report (if required) has been reviewed by an assessor chosen by the registrant and having appropriate experience.

Furthermore, registrants are entitled to claim confidentiality in the registration dossier for certain information not to be disclosed on ECHA's website, e.g. degree of purity, identity of impurities and/or additives, tonnage band, study summaries, etc. This request needs to include a justification as to why publication could be harmful for his or any other concerned party's commercial interests.

Intermediates

An intermediate is also a 'substance' in the sense of REACH, with the special nature that it is manufactured for and consumed in or used for chemical processing in order to be transformed into another substance. Therefore intermediates should not be present in the final manufactured substance (except possibly as an impurity).

Different types of intermediates are defined under REACH:[13]

1) Non-isolated intermediates
2) Isolated intermediates
    a) On-site (non transported) isolated intermediates
    b) Transported isolated intermediates

Whereas non-isolated intermediates are completely exempted from the scope of REACH, considerably less information is needed for registration of the two forms of isolated intermediates provided that they are manufactured and used under the 'strictly controlled conditions' described below, otherwise the above standard data requirements apply.

The reduced information requirements for isolated intermediates include:

(a) identity of the registrant(s)
(b) identity of the intermediate
(c) classification of the intermediate
(d) any available existing information on physicochemical, human health or environmental properties of the intermediate
(e) a brief general description of the use
(f) details of the risk management measures applied and – in case of transported isolated intermediates – recommended to the user.

In addition, a registration for a transported isolated intermediate in quantities of more than 1,000 tonnes per year shall include the Annex VII data.

[13] See Article 3 (15) of REACH for the precise definition of the different types of intermediates.

The ‘strictly controlled conditions’ criteria are:[14]

(a) the substance is rigorously contained by technical means during its whole lifecycle including manufacture, purification, cleaning and maintenance of equipment, sampling, analysis, loading and unloading of equipment or vessels, waste disposal or purification and storage;
(b) procedural and control technologies shall be used that minimise emission and any resulting exposure;
(c) only properly trained and authorised personnel handle the substance;
(d) in the case of cleaning and maintenance works, special procedures such as purging and washing are applied before the system is opened and entered;
(e) in cases of accident and where waste is generated, procedural and/or control technologies are used to minimise emissions and the resulting exposure during purification or cleaning and maintenance procedures;
(f) substance-handling procedures are well documented and strictly supervised by the site operator.

Registrants should keep information available to establish that these criteria are met.

It should also be noted that no fee is required for the registration of on-site or transported isolated intermediates in a quantity between 1 and 10 tonnes, provided that they are registered under the REACH provisions applying to these intermediates due to confirmed ‘strictly controlled conditions’ and the registration contains all the information required in Annex VII of REACH.[15]

5.3 NON-STANDARD REGISTRATION DATA

In addition to the specific rules in column 2 of the ‘data Annexes’ of REACH (Annex VII – X), the registrant may ‘adapt’ the standard information requirements and instead provide equivalent information using other data, such as data generated with non-standard tests or by predicting the properties. Provisions for such ‘adaptations’ are given in Annex XI of the Regulation. There is also an option for ‘substance-tailored exposure-driven testing’ for low-exposure substances. In order to comply with the requirements, all adaptations must be adequately justified and documented in the registration dossier. The registrant is responsible for the content of the dossier, i.e. the scientific validity of the information on the properties of the substance.

Existing Studies and Literature Data

The ideal is to have modern GLP-compliant studies conducted according to standard EU methods, but for many substances there may be old studies or published papers which can often provide equivalent information to assess the properties of the substance. The quality of existing studies can vary greatly and their adequacy can be

[14] See Article 18 (4) of REACH for transported isolated intermediates. These criteria can be used as a working basis for on-site isolated intermediates also.

[15] See Article 4 of the Commission Regulation (EC) No 340/2008 of 16 April 2008 (Fee Regulation), also for the applicable fees in cases, where these conditions are not fulfilled.

defined by two basic elements:

- **Reliability**: the inherent quality of a study relating to the test method, performance of the study and the reporting. There is a scoring system to record the assessment of reliability, the so-called Klimisch score:[16]
  1) Reliable without restrictions.
  2) Reliable with restrictions.
  3) Not reliable.
  4) Not assignable.

- **Relevance**: the extent to which a test is appropriate for a particular hazard or risk assessment.

The extent of information provided by the registrant will form the basis for deciding upon the reliability of the data. However, where critical information is not reported (e.g. species tested, substance identity and dosing procedure, etc.) the test data should be considered to be unreliable for the purposes of REACH.

In general, publications in peer-reviewed journals are preferable to those which are not. High quality reviews, summaries or abstract publications may be used as supporting information. If there is no statement on GLP in the studies published on the web, then they should be rather regarded as non-GLP studies.

Handbooks are considered reliable only if they are based on a critical evaluation of peer-reviewed data. If the analysis of bibliographic references is limited only to secondary data sources it is essential to create a weight of evidence approach (see later in this section).

Grouping of Substances and Read-Across

Annex XI of the REACH Regulation gives the possibility of evaluating chemicals by grouping of substances (e.g. in chemical 'categories'). This avoids the need to test every substance for every endpoint. The properties of substances can on a case-by-case basis be predicted from data on structurally-similar chemicals, for which the physicochemical, toxicological and ecotoxicological properties are likely to be similar or follow a regular pattern. The structural similarities may be based on:

- A common functional group (e.g. aldehyde, epoxide, specific metal ion)
- Common precursors or common breakdown products (e.g. the metabolic pathway approach of examining related chemicals such as acid/ester/salt)
- A constant pattern of potency changes across the category (e.g. categories of substances with an incremental and constant change in chain length and a change in properties as a result)
- Common constituents or chemical classes or similar carbon range numbers (e.g. in the case of UVCB[17] substances).

[16] See Klimisch H., Andreae M. and Tillmann U., A Systematic Approach for Evaluating the Quality of Experimental Toxicological and Ecotoxicological Data, in: Regulatory Toxicology and Pharmacology 25, 1-5 (1997).

[17] Substances of Unknown or Variable composition, Complex reaction products or Biological materials.

One of the approaches used to predict properties of substances based on similarity and thus to fill the data gaps is 'read-across'. The properties of a substance are predicted from data on a structurally close analogue which is considered to be similar (on the basis of structural similarity and similar properties and/or activities). The robustness of estimates is expected to be greater when read-across is applied in a chemical 'category' (which includes many substances with measured data), compared to the one-to-one read-across between only two or only a few substances. As many matching physicochemical, toxicological and environmental properties as possible should be used to provide support for read-across of the missing endpoints.

In all cases, the predicted results must meet the requirements of Annex XI of the Regulation and be fully justified in the registration dossier. Note that a simple statement limited to a sentence like 'read across from…' is definitely not sufficient to benefit from read across or grouping, and adequate and reliable documentation of the method applied as described in the appropriate technical guidance must be provided. In fact ECHA will apply the criteria from this guidance when deciding on the acceptability of the approach.

Calculation Methods and Estimation by (Q)SARs

Some properties of chemical substances can be estimated by Structure-Activity Relationships (SARs) or Quantitative Structure-Activity Relationships (QSARs), collectively referred as (Q)SARs. These are theoretical models that can be used to predict in a qualitative or quantitative manner the physicochemical, biological (e.g. toxicological) and environmental properties of substances from a knowledge of their chemical structure.

Information generated by (Q)SARs may in principle be used instead of test data, provided that the conditions specified in Annex XI of REACH are met. The model has to be scientifically valid, applicable to the substance assessed, provide results which are suitable for hazard classification and risk assessment and the method must be adequately documented. There is technical guidance on how to address these conditions and how to adequately document the use of (Q)SARs in the registration dossier. ECHA will again apply the criteria from this guidance when deciding on the acceptability of the approach.

In practice, it is likely that information generated by (Q)SARs is mostly useful as part of a weight of evidence approach, when combined with other information on the property to be assessed.

Weight of Evidence (WoE)

It may be possible to get a view or conclude on an endpoint related to physicochemical properties, toxicity or ecotoxicity of a substance from a weight of evidence, based on the available information by taking into account a combination of different types of data, i.e. test results, non-test data and bringing in a consideration of the type of exposure if this is relevant for the endpoint. The weight of evidence approach is applied where a single source of information is not conclusive but taken together with other information it then becomes possible to draw a conclusion on the endpoint.

Exposure-based Data Waivers

There may be grounds for a data waiver due to low or negligible exposure. According to the 'substance-tailored exposure-driven testing' approach, testing in accordance

with Sections 8.6 and 8.7 of Annex VIII and the 'higher-tier' studies from Annexes IX and X may be omitted, based on the exposure scenario(s) developed in the Chemical Safety Report. In all cases, adequate justification and documentation shall be provided. The justification shall be based on a thorough and rigorous exposure assessment in accordance with section 5 of Annex I and shall meet any one of the following criteria:[18]

(a) the manufacturer or importer demonstrates and documents that all of the following conditions are fulfilled:

  (i) the results of the exposure assessment covering all relevant exposures throughout the life cycle of the substance demonstrate the absence of or no significant exposure in all scenarios of the manufacture and all identified uses as referred to in Annex VI section 3.5;

  (ii) a DNEL[19] or a PNEC[20] can be derived from results of available test data for the substance concerned taking full account of the increased uncertainty resulting from the omission of the information requirement, and that DNEL or PNEC is relevant and appropriate both to the information requirement to be omitted and for risk assessment purposes;

  (iii) the comparison of the derived DNEL or PNEC with the results of the exposure assessment shows that exposures are always well below the derived DNEL or PNEC;

(b) where the substance is not incorporated in an article the manufacturer or importer demonstrates and documents for all relevant scenarios that throughout the life cycle strictly controlled conditions as set out in Article 18(4)(a) to (f) apply;[21]

(c) where the substance is incorporated in an article in which it is permanently embedded in a matrix or otherwise rigorously contained by technical means, it is demonstrated and documented that all of the following conditions are fulfilled:

  (i) the substance is not released during its life cycle;

  (ii) the likelihood that workers or the general public or the environment are exposed to the substance under normal or reasonably foreseeable conditions of use is negligible; and

  (iii) the substance is handled according to the conditions set out in Article 18(4)(a) to (f) during all manufacturing and production stages including the waste management of the substance during these stages.

[18] See Commission Regulation (EC) No 134/2009 of 16 February 2009, to be found at http://echa.europa.eu/reach/legislation_en.asp

[19] Derived No-Effect Level, i.e. levels of exposure to the substance above which humans should not be exposed, see also next section.

[20] Predicted No-Effect Concentration, i.e. the concentration of the substance below which adverse effects in the environmental sphere of concern are not expected to occur, see also next section.

[21] As described in the previous section for intermediates.

5.4 CHEMICAL SAFETY ASSESSMENT

The Chemical Safety Assessment ('CSA') is the instrument to assess the hazards and risks to human health and the environment and to determine how to control them by applying suitable risk management measures. In practice the CSA is an iterative process if the initial assessment forecasts that risks to human health and/or to the environment are not controlled (not under control). The assessment can be refined by obtaining more information on the properties of the substance, improving the exposure assessment or the risk management measures. There may have to be several cycles of successive refinement of the assessment before risks can be demonstrated to be under control.

The CSA is required for all substances subject to registration in quantities of 10 tonnes or more per year per registrant (except for intermediates under strictly controlled conditions). It comprises the following steps:

1) Human health hazard assessment
2) Physicochemical hazard assessment
3) Environmental hazard assessment
4) Persistent, bioaccumulative and toxic (PBT) and very persistent and very bioaccumulative (vPvB) assessment.

The objectives of the human health hazard assessment are to classify the substance, if it meets the criteria for classification as 'dangerous'[22] and to determine derived no-effect levels (DNELs[23]) for workers, consumers and indirect exposure to humans *via* the environment. The DNEL is the exposure level below which it is considered that adverse effects will not occur for a particular route and duration of exposure. DNELs are normally derived from toxicity test results using appropriate 'assessment factors'.

In a similar way, environmental hazard assessment comprises a decision on the classification of a substance as dangerous and a prediction of the no effect concentrations (PNECs[24]) below which adverse environmental effects are not expected to occur for each compartment of the environment.

The objectives of the physicochemical hazard assessment are to determine the classification of the substance and to assess as a minimum the potential effects from explosivity, flammability and oxidising potential.

If the result of the previous steps indicates that the substance meets any criteria for classification as dangerous or is assessed to be a PBT or vPvB, the CSA shall include the following additional steps:

5) Exposure assessment
6) Risk characterisation.

[22] According to Directive 67/548/EEC. Note that due to the entry into force of Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP Regulation) a CLP classification in line with Article 58 (1) of the CLP Regulation has to be provided from 1 December 2010.

[23] See also the explanation given for DNELs in the previous section.

[24] See also the explanation given for PNECs in the previous section.

Exposure assessment consists of determining, quantitatively or qualitatively, the dose / concentrations of the substance to which humans or the environment are or may be exposed. It includes as a first step the generation of exposure scenarios ('ES') for all the identified uses and stages in the life cycle and secondly their use as a basis to estimate the exposures.

An exposure scenario is a set of conditions that describe how a substance (whether on its own, as a component of a formulated mixture or in an article) is manufactured or used during its lifecycle in the EU and how the manufacturer or importer or downstream user controls or recommends controlling exposure of humans and the environment. It must include the appropriate risk management measures and operational conditions that, when properly implemented, ensure that the risks from the uses of the substance are controlled.

Risk characterisation is carried out for each exposure scenario. This involves comparing the DNELs and PNECs with the estimated exposure concentrations to humans and the environment respectively. Risk assessment for hazardous physicochemical properties consists of assessing the likelihood and severity of an adverse effect. If the estimated exposure levels are below the DNELs and PNECs, risks are considered to be under control. If not, iteration of the CSA should be carried out until risks can be demonstrated to be under control.

The CSA is documented in the Chemical Safety Report ('CSR'), which is submitted, together with the technical dossier, to ECHA as part of the registration process. The registrant transmits the relevant information documented in the CSR to the actors further down the supply chain by means of the extended safety data sheet (eSDS).

The following figure provides a final graphical overview of the elements of the CSA:

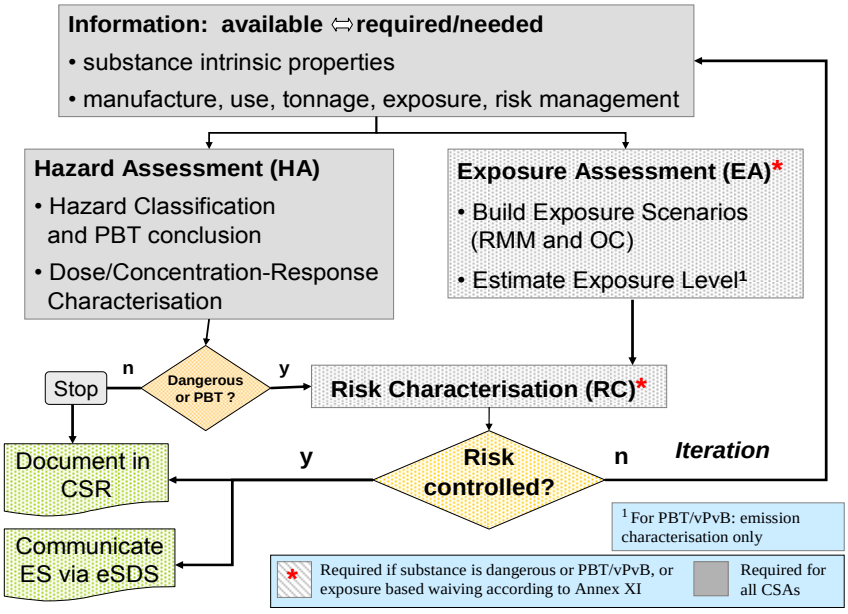

Figure 3: Elements of the Chemical Safety Assessment

6 DOSSIER PREPARATION AND SUBMISSION

The aim of this chapter is to give an overview on how (and by whom) a registration dossier is prepared and eventually submitted to ECHA. The sharing of data and joint submission to ECHA of common parts of registration information by registrants of the same substance is a core principle of the REACH process. Hence, registrants of the same substance are usually required to work closely together and share costs for the information collection and generation (see Section 6.1). To do the latter, four main steps for registration data collection and generation can be applied (see Section 6.2). Finally, registrants have to be familiar with the IT tools provided by ECHA for actual registration (see Section 6.3).

6.1 DATA SHARING, 'SIEFs' AND JOINT REGISTRATION

Different data sharing provisions apply for 'phase-in' and 'non-phase-in' substances.

Phase-in substances

In order to allow the data-sharing scheme to operate for registration of phase-in substances, companies had to make a pre-registration. Pre-registrants for a particular phase-in substance are participants in a Substance Information Exchange Forum (SIEF). In order to initiate SIEF formation, pre-registrants who indicated the same substance identifiers were grouped into REACH-IT into a 'pre-SIEF'. Based on this grouping, companies are then required to have dialogue with their fellow 'pre-SIEF' members in order to identify and form one SIEF for each substance. The main purpose of the SIEF is to facilitate the mandatory data-sharing element of REACH, thereby avoiding the duplication of studies, especially testing on vertebrate animals. If a particular study is not available within the SIEF, participants must reach an agreement to conduct a single study in order to avoid duplicate animal testing.

Following participation in the SIEF, REACH requires one lead registration dossier by a 'lead registrant' for each substance, i.e. with combined information from all the registrants on the properties of the substance. Information unique to the joint registrants is submitted separately to ECHA after the lead registration. There is the possibility to opt out of certain parts of a joint submission only if the cost would be disproportionate, where there would be a breach of confidentiality or if there is a disagreement between registrants on selection of the classification or safety data. Nevertheless, sharing of animal testing is still mandatory, as is sharing of non-animal testing if requested by one potential registrant.

Non-phase-in substances

Potential registrants of non-phase-in substances must make an 'inquiry' to ECHA to find out if the substance has already been registered. If it has, they can use data from substances registered under REACH 12 or more years previously as of 'right' for their new registration. Studies from substances registered less than 12 years before are protected, but the two parties are put into contact with a view to reaching an agreement to share data, and animal studies cannot be repeated. It should be noted that both the potential registrant and the existing registrant are obliged to come to an agreement on the sharing of data involving tests on vertebrate animals. For studies not involving tests on vertebrate animals the same obligation applies for any studies specifically requested by the potential registrant.

6.2 STEPS FOR REGISTRATION DATA COLLECTION AND GENERATION

Registrants can apply the four steps outlined below in order to determine and fulfil the information requirements set out in Annexes VI to XI, depending on tonnage, hazard, use and exposure of the substance to be registered.[25] Note that these steps are not necessarily consecutive but can at certain stages also overlap with each other or change order.

STEP 1 – Gather and share existing information

- Collect existing test and non-test data on the substance, i.e. information possessed by the potential registrant, available from ECHA and from a literature search. The registrant has to make an assessment of the reliability, relevance and adequacy of test data.

- Gathering use, exposure and risk management information to determine the need for further information on properties, as exposure-based data waivers may be applicable.

- Establish whether 'read-across' or membership in a 'chemical category' is possible and collect existing test data on the analogue substances.

- Collect (Q)SAR estimated results for the substance if suitable models are available.

- Use of a weight of evidence approach to fill data gaps for particular endpoints if this is appropriate.

STEP 2 – Consider information needs

The information requirements for the registration are specified in the Annexes VI to XI of the Regulation, as described above.

STEP 3 – Identify information gaps

The available information identified in the first step and the required information in the second step is compared to identify data gaps. It may be necessary to check further for available information, e.g. by an improved literature search. Also at this stage it might be established that a particular test could be waived taking into account exposure-driven considerations. A final set of remaining information gaps can then be identified. Note that the CSA can also indicate that further testing is required, as part of the iterative process in developing a risk assessment.

STEP 4 – Generate new data/propose testing strategy

For each missing endpoint it has to be decided how to generate the necessary information most efficiently. If testing is needed, a first option is to consider if an *in vitro* (i.e. non-animal) test is adequate, as the aim is only to conduct new *in vivo* testing using experimental animals as a last resort. Any 'core' registration data missing from Annex VII and VIII need to be generated for the registration. For the 'higher-tier' tests from Annex IX and X a testing proposal should be submitted.

[25] See above under Section 5.2 and 5.3.

6.3 IT TOOLS FOR REGISTRATION

Registrations under REACH shall be prepared and submitted using IT tools specified by ECHA, namely REACH-IT and IUCLID 5. Essentially, the technical dossier containing all the required information has to be compiled by the registrant in the format of IUCLID 5 and then submitted electronically via REACH-IT to ECHA.

In addition, if a Chemical Safety Assessment is required, the registrant also needs to compile a Chemical Safety Report and submit it together with the technical dossier to ECHA. ECHA is currently also developing an IT tool for the CSA in order to help companies prepare a CSR and exposure scenarios.

If the same substance is manufactured or imported by more than one company, these companies are required to submit certain information together (so-called joint submission of data), and certain information separately.[26]

In practical terms, companies should take the following steps in order to prepare and submit their registrations to ECHA:

1) Sign-up in REACH-IT to create an account for your company.
2) Prepare your registration by creating a technical dossier in IUCLID 5.
3) Consult ECHA's REACH-IT Supporting Documents:[27] It is important to read carefully the Data Submission Manuals, especially Manuals 4 and 5, before preparing your dossier. Also the Industry User Manual for REACH-IT (IUM) Part 6 (Dossier Submission) will help you by providing step-by-step instructions leading you in the process.
4) Submit your registration dossier to ECHA via REACH-IT.

7 REGISTRATION FOLLOW-UP BY ECHA AND REGISTRANT

Once a registration dossier has been submitted, ECHA undertakes a 'completeness check' and – if the registration is complete – assigns a registration number.[28] The 'completeness check' is fundamentally different from the 'compliance check' of registrations. 'Compliance check' and the 'examination of testing proposals' by ECHA are the two pillars of the 'dossier evaluation'[29] procedures under REACH. The dossier evaluation is done subsequent to a successful completeness check and may require the registrant to update his registration dossier in accordance with a decision

[26] See above under Section 6.1.

[27] See under http://echa.europa.eu/reachit/supp_docs_en.asp

[28] Note that in practice the dossier has to pass a virus and XML format check as well as a so-called 'business rules validation' in order to be accepted for the completeness check. For further information on this, please see REACH-IT Industry User Manual Part 6 – Dossier submission and Data Submission Manual 8 – Business Rules validation, to be found at http://echa.europa.eu/reachit/supp_docs_en.asp

[29] The 'substance evaluation' under REACH is not further addressed in this document. For detailed information on this procedure you are advised to consult the ECHA Guidance on dossier and substance evaluation at http://guidance.echa.europa.eu/guidance_en.htm

by ECHA. Apart from that, the registrant has also to take care on his own initiative of updating his registration dossier when needed. This section outlines essentials of all these elements of the 'follow-up' by ECHA and the registrants to a registration submission.

7.1 COMPLETENESS CHECK

As a part of the registration procedure under REACH, all registration dossiers must pass a 'completeness check' by ECHA to ensure that all elements required by the legislation have been provided. However, there is no scientific assessment of the quality or adequacy of the data or of any justifications to omit studies. The registrant is informed of any missing information necessary to complete the dossier, and then has to resubmit the completed dossier to ECHA. Once a dossier is considered complete (i.e. the required information and the appropriate fee has been received) ECHA issues a registration number.

7.2 COMPLIANCE CHECK

After registration, ECHA performs a 'compliance check' for selected dossiers. At least 5% of dossiers from each tonnage band have to be evaluated. Priority for compliance check shall be given, but not exclusively, to dossiers meeting at least one of the following criteria:

- The dossier contains information submitted separately in case of a joint submission (e.g. classification and labelling, study summaries and/or robust study summaries), so-called opt-out from the joint submission
- The dossier for a substance (phase-in and non-phase-in) manufactured or imported in volumes of one tonne or more per year does not meet the full requirements of Annex VII
- The dossier is for a substance listed in the Community rolling action plan (CRAP).[30]

The aim of the compliance check is to verify that the information in the technical dossier complies with the requirements of the Regulation and that any adaptations of the standard information requirements are adequately justified. Also if a CSA is required, then it has to be in accordance with the Regulation and the proposed risk management measures must be adequate.

If ECHA considers that the registration dossier is non-compliant, within 12 months of the start of the compliance check ECHA can prepare a draft decision requiring the registrant to submit the necessary information to bring the dossier into compliance. Adequate time is permitted for performing new studies and to provide the information. The registrant is allowed 30 days to comment on this draft decision. The final decision is then adopted by ECHA if there are no proposals for amendments from the

[30] The Community rolling action plan shall cover a period of three years and shall specify substances to be evaluated each year. Substances shall be included if there are grounds for considering (either on the basis of a dossier evaluation carried out by ECHA or on the basis of any other appropriate source, including information in the registration dossier) that a given substance constitutes a risk to human health or the environment.

national Competent Authorities. If they do make proposals, the registrant is allowed 30 days to respond to these. Then ECHA's Member State Committee (MSC) is involved in adopting the final decision. The registrant can appeal against the final decision of ECHA. The European Commission deals with the process if the MSC does not reach unanimous agreement.

When a final decision is taken, the registrant has to submit the information by the deadline set. In the case of multiple registrants, they have to agree who is going to carry out testing on behalf of all registrants and to share the costs of testing equally.

Alternatively, the registrant may cease the manufacture or import of the substance or the production or import of the article, upon receipt of the draft decision. In such cases, the registrant shall inform ECHA of this fact with the consequence that his registration shall no longer be valid, and no further information may be requested with respect to that substance, unless he submits a new registration. ECHA shall inform the competent authority of the Member State in which the registrant is located.

It should be noted that the registrant is responsible for the information content and the scientific validity and adequacy of the safety data.

7.3 EXAMINATION OF TESTING PROPOSALS

The 'core data' of Annex VII and VIII has to be included in the registration, together with any other available data. If the substance is to be manufactured or imported at ≥ 100 tonnes per year the registrant has to include a testing proposal in the registration dossier for the information listed in Annex IX for all missing data. At ≥ 1,000 tonnes per year the testing proposal has also to include studies listed in Annex X for all missing information requirements.

All testing proposals for these 'higher-tier' studies have to be examined and a draft decision prepared by ECHA within certain timelines presented in Table 2.

Table 2: Timelines for the examination of testing proposals

Testing proposal received	**ECHA to prepare draft decision**
for non-phase-in substances	within 180 days
for phase-in substances	
• by 1 December 2010 in order to fulfil the information requirements in Annexes IX and X	by 1 December 2012
• by 1 June 2013 in order to fulfil the information requirements in Annex IX only	by 1 June 2016
• by 1 June 2018	by 1 June 2022

The main objective of the examination of testing proposals is to investigate whether the information requirements according to REACH are fulfilled. If the proposed studies are appropriate they will increase the knowledge of the dangerous properties of chemicals in order to protect human health and the environment, while at the same time preventing unnecessary animal testing and costs.

Testing proposals involving animal testing are published on the ECHA website to invite third parties to provide available data and hence avoid unnecessary testing.

ECHA makes a draft decision on the testing proposal to define the studies that need to be carried out and deadlines for submission. The procedure for the adoption of this draft decision and options available for the registrant vis-à-vis a draft decision (right to comment; cease manufacture or import) or final decision (submit the required information by the deadline set or lodge an appeal) are the same as mentioned for the compliance check.

7.4 DUTY TO KEEP REGISTRATION INFORMATION UP-TO-DATE

The information submitted in the registration dossier to ECHA will have to be kept up-to-date. It is the responsibility of the registrant to update his registration dossier when needed.

A registrant is required to inform ECHA – on his own initiative – without undue delay about new relevant available information on the registered substance or on his registration dossier (Article 22 (1) of REACH) and therefore to submit an updated version of the registration dossier. Any change in already submitted information such as the registrant's identity should also be submitted in an update of the registration dossier.

In particular, as soon as the volume of a registered substance is reaching a higher tonnage band, the information requirements of the registration dossier change, i.e. at 10, at 100 and at 1000 tonnes per year. The registrant then has to inform ECHA of the change(s) in the quantities as well as the additional information that he would require to comply with the information requirements for the new tonnage level. ECHA shall then inform the registrant without delay of the names and addresses of the previous registrant(s) and of the relevant summaries or robust study summaries, as the case may be, already submitted by them if it concerns substances that have been registered less than 12 years before. Studies involving vertebrate animals shall not be repeated. ECHA shall simultaneously inform the previous registrants of the name and address of the registrant. The available studies shall be shared with the registrant. If several registrants have made an inquiry in respect of the same substance, ECHA shall inform all registrants without delay of the name and address of the other registrants.

Also for substances regarded as registered because a notification according to Directive 67/548/EEC has been submitted (so-called 'NONS'[31]), updating of registration dossiers needs to be performed if the quantity reaches the next tonnage threshold.[32]

An update shall be accompanied by the relevant part of the fee required in accordance with the Fee Regulation.[33]

Once such an update is submitted to ECHA it has to undergo a completeness check within three weeks of the submission date. Manufacture or import may continue if

[31] Notification Of New Substances regulation.

[32] For further details on NONS and their practical handling under REACH you may consult the Questions and Answers for the Registrants of Previously Notified Substances (Release 3) at http://echa.europa.eu/doc/reachit/prev_not_sub_registrants_qa.pdf

[33] See Article 5 of the Commission Regulation (EC) No 340/2008 of 16 April 2008.

there is no indication to the contrary from ECHA within 3 weeks after the submission of the registration update.

8 REFERENCES AND FURTHER INFORMATION

ECHA website: http://echa.europa.eu

ECHA Frequently Asked Questions about REACH:
http://echa.europa.eu/reach/faq_en.asp

ECHA legislation website: http://echa.europa.eu/reach/legislation_en.asp

ECHA guidance website: http://guidance.echa.europa.eu/guidance_en.htm

- Guidance on registration
- Guidance on data sharing
- Guidance for intermediates
- Guidance on dossier and substance evaluation
- Guidance for identification and naming of substances in REACH
- Guidance on information requirements and chemical safety assessment
- Guidance on priority setting for evaluation.

IT tools for registration

- IUCLID 5 website : http://iuclid.echa.europa.eu/
- REACH-IT website: http://echa.europa.eu/reachit_en.asp
- REACH-IT Supporting Documents (Data Submission Manuals and REACH-IT Industry User Manuals): http://echa.europa.eu/reachit/supp_docs_en.asp
- Questions and Answers for the Registrants of Previously Notified Substances (Release 3):
  http://echa.europa.eu/doc/reachit/prev_not_sub_registrants_qa.pdf

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