Minutes of the open session

of the 9th meeting

# of ECHA–NanoMaterials Expert Group (ECHA-NMEG-9)

Time: 16-17 May 2017

Place: ECHA, Margot Wallström conference room

Participants: Representatives from the Member States Competent Authorities (MSCA), European Commission (DG Growth (DG Grow), DG Environment (DG ENV), DG Joint Research Centre (DG JRC)), ECHA-NMEG Accredited Stakeholder Observers (ASO), EFSA and ECHA participated in the meeting.

The participant list is in Annex 1.

Meeting documents: Presentations from the meeting are available on the dedicated CIRCABC site (https://circabc.europa.eu/)

1. Introduction

The 9th meeting of the ECHA NanoMaterial Expert Group (NMEG) was held on 16-17 May 2017. This one and a half day event was mostly an open-session, except for a 1-hour closed-session on the first day.
The purpose of the meeting was to share updates on developments relating to the implementation of REACH, CLP and BPR for nanomaterials since the previous meeting. This included updates on the organisation of the NMEG, the ongoing guidance updates for nanomaterials, the EU Observatory for Nanomaterials (EU-ON), and on nanomaterials under BPR Regulation. The discussions at this meeting focused on the OECD WPMN activities, on illustrative case studies related to registration or to read-across, on the CLP and BPR Regulations and Nanomaterials and the rolling plan 2017-2018 for the NMEG. A closed session (restricted to MSCAs, COM DGs, EFSA and ECHA) was held to discuss the implications of the recent decision from the Board of Appeal on TiO_2 (AP06). A summary of the main discussion points during the closed session was presented in open session for the ASOs at the end of the first day (AP12).

A short overview of the presentations and discussion points in the group per agenda item are given below.

2. Overview of NMEG-9 per agenda item

AP 1. Welcome and introduction

Frank Le Curieux (ECHA) the chair of the NMEG opened the meeting. New participants were introduced to the group. The draft agenda shared with the group in advance of the meeting was agreed.

The provisional dates for the next meetings were announced:

- 2017: 7-8 November
- 2018: 15-16 May and 6-7 November

A reminder was given on the conflict of interest implementation for the NMEG.

AP 2. Follow-up from NMWG-8*

[*NMWG, Nanomaterials Working Group is the original name of this expert group, from 2012 to 2016; the name was changed to NMEG, Nanomaterials Expert Group, in 2017]

Minutes from the 8th meeting: The chair outlined that draft minutes from the last meeting were shared in December 2016. Comments received were taken into account and a revised version was uploaded in the S-CIRCABC (follow-up) folder. Further minor amendments were made based on comments on the revised version. The changes were shown in the meeting to confirm the agreement of NMEG members.

The changes were accepted and two requests were received to further modify the text (for AP 4 and AP 12 were agreed).

The chair explained that the minutes will be made publicly available on the NMEG webpage on ECHA website, and it was agreed to publish the approved minutes once the two changes agreed are implemented.

Survey among NMWG members

A survey was made among the NMWG members in December 2016. It included the usual opinion questions about the organisation of NMWG and a new question to help prepare the NMEG rolling plan, i.e. "name 3 technical deliverables related to the implementation of REACH, CLP and Biocidal Products regulations for nanomaterials that you believe the NMEG should focus on during the next 2 years". Results from this survey were shared with NMEG members before NMEG-9 meeting. Further development of this topic took place under AP3.

Tour de table: The chair outlined that the aim of the tour de table document, distributed before the meeting, was to share relevant information and possibly identify topics for future discussion, but not to discuss the document itself during the plenary. The document was prepared in April /May 2017 and received many contributions.

AP 3. Update on NMEG organisation

The chair gave an update on the NMEG organisation in line with the mandate of this group and the recommendations from an internal audit on ECHA expert groups that resulted on some changes in Q1/2017.

These were summarized as the change in the name for the group, to make a clearer link between ECHA and NMEG work plans, renew experts/representatives for 2017-2018, create a dedicated page on the ECHA website, to list the members and publish the meeting minutes in the NMEG webpage and agree on and communicate a rolling plan.

Then the main results from the question on the rolling plan from the survey were presented and it was announced that the rolling plan would be discussed in a specific agenda point (AP16) at the end of the meeting.

During the discussion it was noted that there is a possible synergy with research projects. ECHA explained that it is in contact with DG Research and with the NanoSafety Cluster to explore how results from research could be taken up to improve the regulation of nanomaterials.

AP 4. Update on Nanomaterial Guidance/consultation process

ECHA gave an update on the status of the ongoing guidance update projects relevant for nanomaterials implementation under REACH.

The consultation process has continued as planned since the last NMWG, however, as a consequence of the decision of the BoA on case A-011-2014, it was decided to publish the Appendix to the guidance on registration (Guidance on nanoforms) as a best practices document. The document has been the subject of extensive consultation with the stakeholders and was sent to CARACAL for information (only) before starting the publication procedure.

The consultation process for all documents has been completed and the documents will be published in May 2017 as originally planned.

In the discussion a question was raised that as the updated OECD TG 412 and 413 were approved during the 29th OECD WNT meeting in April 2017, would the advice from the guidance on lung overload be consistent with the test guidelines. ECHA explained that the information on lung overload in the guidance is explanatory and recommends lung overload measurements, but does not require such measurements .This is consistent with the advice given in the updated OECD TG 412 and 413.

ECHA was requested to share the plans with regard to dissemination of the new guidance on nanomaterials. ECHA explained that the publication of guidance is always announced on the ECHA website and that a News Alert will be published together with the guidance. Moreover, ECHA is planning to have a webinar regarding the nanomaterials guidance later this year.

AP 5. Update on European Union Observatory for Nanomaterials (EUON)

The background for the EUON was outlined. There is a perception of lack of information regarding nanomaterials in the EU and in an impact assessment[1] the EU Commission elaborated 5 different options to improve information availability. Based on the balance of cost and resources it was decided to create an EU wide Observatory for Nanomaterials (EUON). The task to implement the EUON was entrusted to ECHA via a delegation agreement by the Commission.

The Observatory will have its own website which will be launched in June 2017 (https://euon.echa.europa.eu/). During the meeting a mock-up of the observatory website was presented. The observatory is planned to be implemented in three phases (2017, 2018 and 2019). The phases after 2017 will focus on expanding the content (e.g. including information from other legislations) and refining and targeting the information for specific audiences.

In the discussion, the following were noted:

- The importance of stakeholders' involvement to the observatory. A stakeholder dialogue is planned for the end of June 2017.
- The possible integration of existing databases.
- Incorporation of information regarding other legislations outside ECHA's mandate, such as worker protection. The link to other legislations will be made in the second implementation phase.
- The possibility of using the compilation of information on regulations applicable to nanomaterials gathered by the Commission during the study made for the REACH regulatory review for nanomaterials.

[1] http://ec.europa.eu/DocsRoom/documents/23261

AP 6. Implications of recent Board of Appeal decision on TiO_2 (A-011-2014)

[closed session – see separate minutes]

AP 7. Status of test guidelines and guidance documents for their applicability to nanomaterials

An introduction to the agenda point was given by ECHA by reminding the NMEG of previous discussion held within the NMEG and the developments since then. She stressed the importance of having confidence in the applicability of test guidelines and guidance documents to ensure a reliable risk assessment of nanomaterials. Jenny also explained that this meeting would focus on the environmental aspect with two specific presentations which would allow for proposals to be included in the rolling plan for further consideration by the NMEG members.

OECD presented the process to be followed to develop new or revise existing test guidelines at OECD. The presentation also included an overview of the current status of work on the test guidelines (TG) and guidance document (GD) development focusing on the challenges related to their applicability to manufactured nanomaterials and information on how to prioritize when choosing the TGs and GDs to be updated.

The presentation aimed at giving a better understanding of the steps involved when updating TGs and GDs. Also for manufactured nanomaterials the work involves identifying first a need for a TG/GD and then a volunteer lead country to develop a SPSFs (standard project submission forms). The lead country is supported by other interested volunteer countries participating to the discussions, the experimental work and the drafting of text. Throughout the process expert meetings may be held, and as relevant, experimental work, including e.g. round robin testing, may take place. The OECD TGs programme is kept informed about progress and will discuss the TG/GD as well, before approval. It was emphasized that volunteer lead countries are needed to review the TGs based on all new test/research data generated during the last years.

In the discussion the following was noted:

- The difference between TGs and GDs is that TGs are legally binding for countries that have signed up to the OECD Mutual Acceptance of Data agreement, whereas the GDs are not. The latter simply aim at giving tools, e.g. to implement the TG.
- The estimated time needed to go through the whole TG development process varies between 9 months and several years.

AP 8 Recommendations from the ProSafe review of the scientific literature and OECD TG/GD for fate and effects of manufactured nanomaterials

In this presentation, Technical University of Denmark (DTU)) Environment gave an overview of the recommendations derived from the EU project ProSafe's (Promoting the Implementation of Safe by Design) review project of the scientific literature relevant for determining the fate and effects of nanomaterials. This presentation highlighted ongoing projects on OECD GD developments related to fate and effects. The presentation emphasized important aspects like the situation before testing, the potential use of zeta-potential of the testing material and test media considerations. All of these points were highlighted as important. Some specific recommendations to OECD GD for aquatic toxicity testing of nanomaterials were also provided.

In the discussion the following was noted:

- A revision of TG 201 is needed (Freshwater Alga and Cyanobacteria, Growth

Inhibition Test).
- For risk assessment, work with fish and/or a pre-exposition chamber is favoured.
- A battery of test methods is suggested in order to catch the particle effect or the particle uptake in the organisms.
- The dissolution kinetics affects toxic effects and the influence of this parameter should not be quantified solely on the basis of the effect of the dissolved ions.

AP 9. Status and Open issues regarding Nanomaterials OECD TGs and Guidance for environmental endpoints

A representative from an evaluating member state (eMSCA) gave a presentation on the status and on the open issues for the TGs and GDs for environmental endpoints for nanomaterials. There is a new project assessing the adaptation needs for the existing OECD TG 110 regarding nanomaterials and developing either a new nanospecific TG/GD or revise the existing TG. Furthermore, it was reported that developments of the GD on aquatic (and sediment) toxicity testing, the TG on dissolution rate of nanomaterials in aquatic environment, GD on OECD 312 leaching soil column, TG on removal from waste water, GD on dispersion stability and dissolution rate of nanomaterials in the environment are ongoing. The TG on dispersion stability of nanomaterials in simulated environmental media was adopted by WNT in April 2017 (as TG 318). Several open issues and considerations were presented focusing on developing a proposal for the 17th working party on manufactured nanomaterials (WPMN) 9-12 May 2017. Some TGs and GDs were identified as potentially relevant to revise within the endpoints areas of physicochemical properties, effects on biotic systems and environmental fate. Some general views on prioritisation of TGs and GDs were also considered.

In the discussion the following was noted:
- There are technical challenges with the TGs and GDs development.
- It is proposed to prioritise the revision of the bioaccumulation TG 305 (or provide additional guidance in a Guidance Document). Whether to perform a revision or a complete new TG for zeta potential is yet to be decided. In addition, adaptation needs for algal toxicity (TG 201) should be addressed in the OECD GD on aquatic and sediment toxicity testing for Nanomaterials. A need for standards for the transformation was also flagged.

AP 10. How to register a substance containing nanoform(s) in IUCLID 6?

AP 10a. Overview of new SID fields in IUCLID 6

ECHA provided a demo on how the new fields in IUCLID 6 can help reporting and structuring the information on nanomaterials. First it was explained what the "boundary composition record" (BCR) is and how it is linked to the information reported jointly for Annex VII to XI (section 4-13 of the registration dossier). Then, the link between a BCR and a legal entity composition record as well as the link between BCR and a classification and PBT assessment record was explained.

The assessment entity is a new tool that can be used when more than one hazard profile needs to be taken into account in the registration. It helps to directly link the different composition records created in section 1.2 with their physico-chemical/fate/hazard profile. Finally the IUCLID fields for the reporting of nanomaterials and of test materials were presented.

In the discussion, the following was noted:
- With regard to the use of assessment entity, it was flagged that if all hazard profiles are gathered under the same assessment entity some transparency could be lost. It was clarified that it is possible to have different BCR with the same hazard profile (and one reason could be indeed transparency). The assessment entity is a tool and can be used in a flexible way, and the only minimum to be respected is to separate the different hazard profiles.

- The question as to which surface treatment information will be available for dissemination is still under discussion. This information is foreseen to be disseminated, unless claimed confidential by the registrant.

AP 10b. Update registration dossier of calcium carbonate – focus on nano

An example of a real lead registrant dossier (for the $CaCO_3$ registration) was presented. The lead registrant dossier had been submitted originally in 2010 and has been updated taking into consideration the new reporting possibilities in IUCLID 6. It has not yet been submitted via REACH-IT. The lead registrant dossier reports bulk and nanoforms, two different crystalline phases and different surface treatments for the joint registration. It was explained how the lead registrant dossier was structured including the grouping approach taken, the type of justification(s) provided, the assessment entities created and how all this had been reported in IUCLID 6.

In the discussion, the following was noted:

- The possibility of discussion of a real-life example including the reporting in IUCLID was greatly appreciated.
- The use of some coating (surface treatment) agents had been discontinued by some co-registrants as they did not find enough information for an assessment and it was not worthwhile for them to generate these data.
- One of the assessment entities covered one group of surface treatment agents. However, for the hazard assessment for some endpoints, individual treatment agents had been considered separately. It was explained that the specific treatment agent in question was classified for those endpoints and for that reason, data generated by performing the test had been considered instead of using read-across.
- For inhalation toxicity some screening studies had been performed to validate the read-across hypothesis.

AP 11. Nanocomput: Overview, current QSAR landscape, and evaluation of the grouping and read-across recommendations for nanomaterials

An overview of the Nanocomput project was presented. The project:

- systematically reviewed QSAR, QSPR, and compartment models (fate models) for nanomaterials found in the literature. The findings indicated that the QSPR / QSAR model landscape is sparsely populated, especially in the case of models that are directly predictive of regulatory endpoints.
- developped two examples of read-across between different nanoforms (one for nano titania and another one for carbon nanotubes). Both examples used the approach proposed in the ECHA upcoming guidance Appendix to Chapter R.6. The nano titania example, which consisted of read-across of in vitro comet assay endpoint, was presented. A correlation was found allowing to predict that coated nanoforms and nanoforms with a high percentage of impurities do not show *in vitro* genotoxicity. The grouping hypothesis was supported by the use of chemoinformatic tools such as hierarchical clustering, principal component analysis, and random forest. This hypothesis was confirmed, as independent data on the target nanoforms was available in the literature.

In the discussion, the following was noted:

- The difficulty of identifying whether data from different sources correspond to the same nanomaterial. The approach taken to discard data was the one used by ANSES, which followed certain criteria such as discarding data lacking quality control, or having deficient characterisation etc.
- The usefulness of the RAAF and the ECHA upcoming guidance. The RAAF was designed for chemical substances and some adaptations are needed to be applicable to nanomaterials, e.g. similarity between nanomaterials. Based on the detailed analysis carried out by the JRC, the approach proposed in ECHA Guidance seemed to work, but

some iteration or change in the order of some steps (e.g. first collect all data, and then define the hypothesis) may be useful.
- The role of coating (i.e. surface treatment) in the genotoxicity. While in many cases the coating may "protect" against the genotoxicity, it was flagged that in other situations the coating may trigger toxicity (e.g. when the surfaces are charged).
- How to deal with uncertainty. It was explained that in this concrete case, the stability of the dispersion could affect the results. The other source of uncertainty was the variability of physicochemical data, but in this particular case the variability was not very high.
- ECHA expressed its appreciation for the work carried out by the JRC, which provides a detailed illustration of how the computational tools can be applied in the context of ECHA guidance on grouping and read-across.

AP 12. Brief report for ASOs on closed session (Implications of recent Board of Appeal decision on TiO2 - case A-011-2014)

The Chair gave a brief report on the closed session regarding the Board of Appeal (BoA) decisions for nanomaterials).

The latest decision concerned **case A-011-2014, a dossier evaluation case** for TiO_2 were the appellant had made 8 pleas and asked for the decision to be annulled. The Board of appeal annulled the decision focusing on the third plea of the appellant: the Agency acted outside its competence as the requested information on phases, nanoforms and surface treatment of nanoforms is not information required for a registration under Section 2 of Annex VI. However, the decision also stated that if a registrant intends to define a substance broadly (including nanoforms or phases), hazards posed by all possible forms of the substance covered by the substance definition must be addressed in the dossier.

The chair summarized the main issues discussed in the closed session:
- The BoA decision contests a standalone CCH request of SID, but may imply the identification of substance in relation to HH or ENV hazard information requirements.
- It was considered how to request and assess information on hazards in the absence of detailed information on the scope of the dossier and on nanoforms covered. If no detailed data are available in the dossier on the identity of a registered substance, it is difficult to justify or explain why a tested material is representative of the registered substance.
- Various questions are still pending to appraise how to implement this BoA decision.
- Forthcoming BoA decisions on substance evaluation of silicon dioxide could bring clarifications.
- ECHA's experience (e.g. substance evaluation on silver) shows that the availability of data on the scope of the registered substance makes the decision-making more consensual and e.g. helps to better address proportionality.

During discussion in open session, it was asked whether an update of the REACH Annexes will solve these issues. ECHA explained that, in its view, the Annex review is crucial and should improve the situation in terms of dossier evaluation. However, the impact of the Annex review would depend on the clarity of the updated text and also on the timing when these updated text will produce their effect.

AP 13. Nanomaterials under Biocidal Products Regulation: state of play in May 2017

ECHA gave an overview of the current status of the legal framework Biocidal products regulation (BPR) and the specific provisions of nanomaterials under BPR. ECHA outlined that in contrast to the REACH regulation the BPR has e partially implemented the COM recommendation on the definition of nanomaterials, as this definition is mentioned in Article 3(1)(z) of BPR. Moreover, the BPR contains a provision for nanomaterials meaning that an

approval does not cover nanomaterials unless explicitly mentioned. Furthermore, the risks need to be evaluated for a nanomaterial. Currently two nanomaterials have already been approved, while two others have assessments ongoing in the review programme for existing active substances. No specific guidance on data requirements or the assessment of nanomaterials used in biocidal products is currently under development.

In the discussion the following was noted:

- BPR and REACH are different legislations but for both legislations discussion for a specific substance takes place in ECHA, in separate for fora, when prompted.
- To be approved under the BPR, active substances need to be assessed regarding its effectiveness and impact on health and the environment. On the basis of the conclusions of this assessment COM decides whether to approve or not the use of the active substance in biocidal products. For the two nanomaterials already approved, the exposure assessment was done based on exposure to the active substance and not the exposure to the nanoform.
- Active substances that have not been notified under the BPR (and thus have undergone or are undergoing or awaiting evaluation and approval) or are not approved as new active substance(s) cannot use the claim that they are biocides. If doing so they would be considered to be illegally on the market.
- The BPR follows CLP and there is no specific guidance for hazard assessment.
- Several eMSCA stated the need for specific guidance, especially on how to evaluate active substances that are nanomaterials as well as the biocidal products containing nanomaterials. The Biocide team will follow the development regarding the data requirement for nanomaterials after the review of REACH Annexes.

AP 14. GHS work related to nanomaterials

A representative from an eMSCA gave a presentation on activities on nanomaterials within the Globally Harmonized System (GHS) of classification and labelling of chemicals, and how EU delegations can actively contribute towards this exercise. Due to the absence of a harmonized approach the UN GHS work program for 2013-2014 included a "Review the applicability of GHS to nanomaterials" and an informal correspondence group (ICG) was created to establish whether there is a need to amend the GHS to make clear that nanoforms of a substance are within scope of the GHS, to review the classification and labelling criteria for nanomaterials and to review the safety data sheets. It was also highlighted that contributions had been received from rather few UN delegations, that there are no nanomaterial specialist in the delegations at the UN level, and that there is a need for a review taking into account the latest technical improvements.

In the discussion which followed, a question was raised on how surface treatment of 'normal' substances (bulk) is treated in GHS. It was highlighted that the safety data sheet should inform on surface treatment.

AP 15. Environmental classification and GHS nanomaterial work

A representative from another eMSCA gave a presentation on a classification exercise on selected nanomaterials for environmental hazards. In the classification exercise, data on aquatic toxicity, degradation and bioaccumulation was collected from scientific literature, the ECHA database and from OECD WPMN data. In addition, data on identity and characterisation was assessed. From the classification exercise example it was concluded that it was possible to determine tentative aquatic toxicity classifications for the example nanomaterials according to GHS criteria. However, it was emphasised that the data was not quality assessed and therefore no definitive conclusions have been drawn as yet regarding the suitability of the GHS criteria for aquatic toxicity. For degradation it was noted that the current criteria for rapid degradation are poorly applicable to inorganic nanomaterials. For bioaccumulation no data was available. It was also concluded that the current bioaccumulation criteria appear poorly applicable to many nanomaterials as bioconcentration from water (determined using bioconcentration factor) is often not

applicable for nanomaterials. The need for guidance on how to take the specific hazardous properties of nanomaterials into account for classification was raised; however, it was noted that those properties are not yet fully established/agreed upon. Finally, some thoughts for discussion on further GHS work and how NMEG could contribute to this were considered. The member made a proposal on how the NMEG group could contribute to the GHS nanomaterial work by informing about new issues, new information sources and providing input on specific issues. NMEG members were invited to contact the ECHA secretariat to express their interest.

In the discussion on APs 14 and 15 the following was noted:

- All available data was suggested to be used and integrated into further GHS work
- In addition to reliable environmental studies, more human health endpoints, more nanomaterials, and more adverse effects need to be assessed
- Suggestion for a dual approach for ensuring availability of data: updating the TGs and pursuing the search for reliable (also non-guideline) studies.
- Since we are still facing challenges with characterisation issues for nanomaterials within REACH, it would be important to first amend the REACH legal text with regard to nanomaterials and then proceed with changes (if applicable) to the CLP regulation.
- Applicability of GHS classification criteria to nanomaterials, and thus possible needs for update of GHS guidance or criteria, can be different for each hazard class. Therefore a review of each hazard class individually would be needed. Applicability of GHS and CLP to nanomaterials is proposed to be a constant topic for the NMEG group.

AP 16. NMEG rolling plan for 2017-2018

As mentioned under AP 3, a survey was carried out in December 2016. NMEG members were asked, among other issues, to identify technical deliverables for nanomaterials related to the implementation of REACH, CLP and Biocides regulations to be considered in the NMEG rolling plan for 2017 and 2018.

The main items mentioned by NMEG members were presented. Then ECHA explained its priorities for the 2017-2018 period:

- Guidance to implement the nanomaterial definition. ECHA's understanding is that JRC will be developing such guidance and ECHA will welcome presentation of the work in the NMEG once this is possible;
- Guidance to implement REACH revised Annexes for nanomaterials. This work obviously depends on the availability of revised REACH Annexes: when they are published, it will be a priority to consider the need for updated guidance;
- Work on OECD TGs and GDs. An overview on the ECHA priorities for human health and the environment was given.
- Discussion on specific nanomaterial cases, such as registration, dossier and substance evaluation, case examples etc.

The objective is to discuss these priorities (and whether something important is missing from the priorities identified) and agree on a rolling plan, allocate tasks to NMEG members.

In the discussion, the following was noted:

- JRC confirmed that it is developing guidance for the future revised definition, and will present it after agreement of the revised definition.
- The rolling plan with more details (main activities, deliverables and timelines) should be circulated among NMEG members as soon as possible so the consultation can start before the summer period.
- Also for the GHS criteria work (AP 14 and 15), it would be useful if the presenters could provide main activities and deliverables.

- Regarding the OECD work, the OECD procedures should be taken into account (e.g. new proposals for TGs and GDs need to be presented in SPSFs by mid-November each year for discussion in the OECD TGP in April the following year)
- Industry representatives agreed on the principle of sharing some case studies with the group.
- It will be considered if additional work is needed to help on the implementation of the new Guidance published in May 2017.
- Some work on the Ames test should be considered as the OECD WPMN concluded that it is not applicable to nanomaterials. Some work carried out by NMEG members in this area can be shared with the group for further discussion.
- Also the work of the ISO TC 229 should be followed. The committee is discussing a new document on toxicokinetics, led by the Netherlands.

Wrap-up and conclusions

The main aim of the meeting was to set up a rolling plan for the NMEG and the main elements have been discussed in the meeting and ECHA will share the draft rolling plan with more details regarding timelines and deliverables.

The NMEG-9 meeting provided the opportunity to discuss case studies such as the Board of Appeal decision and the registration dossier for $CaCO_3$. ECHA would like to encourage the presentation and discussion of case studies, as they help to better illustrate and understand the reality and detect potential issues regarding the REACH/Guidance implementation.

The Chair expressed his appreciation to the colleagues for their contribution to this 9th NMEG meeting, for the organisation, for the attendance and for the active participation as presenters or in the discussions. The meeting was then closed.

END OF ECHA-NMEG-9 MEETING

Annex I - List of participants of open session of NMEG-9

Surname	First name	Country / Organisation
Alessandrelli	Maria	Italy
Andersen	Sjur	Norway
Asturiol	David	Joint Research Centre
Bleeker	Eric	Netherlands
Boisen	Anne	Denmark
Bonev	Chavdar	Bulgaria
Carlander	David	Nanotechnology Industries Association NiA
Carvalho	Felix	EUROTOX
Cibulskaitė	Živilė	Lithuania
Dobrak	Agnieszka	Belgium
Doome	Roger	IMA-Europe
Dumitru	Claudia	Romania
Einola	Juha	Finland
Ekokoski	Elina	Finland
Esposito	Dania	Italy
Fernandez-Cruz	Maria Luisa	Spain
Gaidukovs	Sergejs	Latvia
Gorrebeeck	Carine	Belgium
Gryspeirt	Celia	IMA-Europe
Hansen	Steffen Foss	EEB
Herzberg	Frank	Germany
Ivask	Angela	Estonia
Jomini	Stéphane	France
Kinzl	Maximilian	Austria
Kobe	Andrej	European Commission
Krop	Hildo	ETUI
Lassus	Matthieu	France
Melbourne	Jodie	PETA International Science Consortium Ltd.
Mendonça	Elsa	Portugal
Moore	Gregory	Sweden
Nahmias	Nahmias	ETRMA
Puolamaa	Maila	European Commission
Rasmussen	Kirsten	Joint Research Centre
Schoonjans	Reinhilde	EFSA
Schwirn	Kathrin	Germany
Serrano Ramon	Blanca	Cefic
Spirlet	Christine	Eurométaux
Vomastkova	Milada	Czech Republic
Aitasalo	Tuomas	ECHA
Constant	Camelia	ECHA
Deydier	Laurence	ECHA
Falck	Ghita	ECHA
Helminen	Ulla	ECHA
Holmqvist	Jenny	ECHA
Jacquet	Cyril	ECHA

Kapanen	Anu	ECHA
Karjalainen	Ari	ECHA
Le Curieux	Frank	ECHA
Lisboa	Patricia	ECHA
Quinn	Bernadette	ECHA
Rodriquez Unamuno	Virginia	ECHA
Sumrein	Abdel	ECHA
Tanarro	Celia	ECHA