NECID Guidance

Nano

Exposure &

Contextual

Information

Database

Version 1.0 – November 2014

Contents

1	G	eneral	information	
	1.1	Inti	roduction3	
	1.2	Ins	tallation of NECID3	
	1.3	Sta	rting NECID6	
	1.4	Lin	kage in database7	
	1.5	Ove	erview of icons and labeling8	
2	Μ	leasure	ement11	
	2.1	Lay	r-out input forms11	
	2.2	Me	asurement series	
	2.	.2.1	Activity	
	2.	.2.2	Premises	
	2.	.2.3	Material	
	2.	.2.4	Sample information	
	2.	.2.5	Import raw data	
3	Pr	rotoco	I (PDF)	
4	Ti	meline	2	
5	D	Data Exchange		
6	E>	Export (Excel)		
7	Ba	asic da	ta Update54	
8	0	vervie	w of print screens	
9	0	vervie	w of tables	

1 General information

1.1 Introduction

For future research in studying exposure to manufactured nanoparticles, agglomerates and aggregates (NOAA), an occupational exposure database is needed. Developing such a database on an international level will enable and facilitate the future sharing of exposure data on NOAA. For this purpose, a PEROSH group led by IFA and TNO developed the NECID database. It supports the user to fulfill the requirements on information gathering for occupational exposure assessment and provides a general overview of results of exposure measurements against nanomaterial in different exposure situations. The exposure data of different research institutes in different countries will be collected and stored in a harmonized way.

The intended user group comprises research institutes and might be extended to third parties. In the project different user-specific rights and legal agreements for the handling and storage of data and the required IT security are addressed – as they play a critical role for a multinational database and the possibility of data sharing. NECID will provide a sustainable source of information for risk management and the development of occupational exposure benchmark levels/limits.

1.2 Installation of NECID

Account and change of user profile

Before NECID can be used the program should be installed on a computer. The first step is to request for an account at IFA. Then a username and password is provided that should be used to login at http://necid.ifa.dguv.de/, see print screen 1.

Institut für Arbeitsschutz o Deutschen Gesetzlichen U	er nfallversicherung
NECID Version	
Login	
User	
Password	
	Login Forgot Pessword

Print Screen 1. Login screen for NECID.

After login you get the NECID welcome screen (print screen 2) where on the left on the screen a button can be found to change the user profile. In the middle information is given how to install NECID on your computer.



Print screen 2. Welcome page NECID. 1: Button to change the user profile. 2: Overview of documents and files to install NECID on your computer.

Print screen 3 presents the input form for the user profile and possibility to change the user profile, to change the question in case you have forgotten your password and a possibility to get a new password. Before you are able to change the password you should change the fields in the form 'Change Question' (see button 2 in print screen 3).

Institut für Arbeitsschutz der Deutschen Gesetzlichen Unfallve	ersicherung
NECID Version	User: Birgit Vanduuren Institute: The Netherlands Organisation for Applied Scientific Research (TNO) Logout
Beck User Profile User Prame E-Mail Firstname astname Comment	Birgit Vanduuren

Print screen 3. Input form 'User profile'. 1 Overview of user profile and possibility to change the user profile. 2. The possibility to change the question in case you have forgotten your password . 3. Possibility to get a new password.

The table below (table 1) gives an overview of the fields that could be changed.

Field name	Explanation	Format
User name	Give the user name	Open text field
E-mail	Give the e-mail adres of the	Open text field
	user	

Table 1. Fields and their explanations to be filled in for 'User profile'.

First name	Give users first name	Open text field
Last name	Give users last name	Open text field
Comment	Field to include additional	Open text field
	information.	

! Important. Please save your entered data by clicking on the save icon. Otherwise, data will not be saved.

The sub form 'Change Question' (print screen 4) should be filled before changing your password.

Institut für Arbeitsschu	nutz der
Deutschen Gesetzliche	hen Unfallversicherung
Back Chang Passwor Passwor Passwor	User: Birgit Vanduuren Institute: The Netherlands Organisation for Applied Scientific Research (TNO) Logout ge Question Answer ord word Question What's your Mother's birthday and firstname? ord Cancel Save

Print screen 4. Subform 'Change question'.

Password Answer

The table below (table 2) gives an overview of the fields that could be changed.

rable 2. Helds and their explanations to be miled in for "enange question answer".			
Field name	Explanation	Format	
Password	Use the password you received	Open text field	
	with your account		
Password Question		Not adjustable	

Table 2. Fields and their explanations to be filled in for 'Change question answer'.

Answer the question

! Important. Please save your entered data by clicking on the save icon. Otherwise, data will not be saved.

Open text field

The sub form 'New Password' (print screen 5) should be filled to change your password.

Institut für Arbe Deutschen Ges	eitsschutz der ietzlichen Unfallversicherung
NECID Version	User: Birgit Vanduuren Institute: The Netherlands Organisation for Applied Scientific Research (TNO) Logout
Back	New Password Password Question What's your Mother's birthday and firstname? Password Answer Password Confirm Password Cancel Bend

Print screen 5. Sub form 'New Password'.

The table (table 3) below gives an overview of the fields that could be changed.

Field name	Explanation	Format
Password Answer	Give the answer you have saved in the sub form 'Change Question'.	Open text field
Password	Give new password	Open text field
Confirm Password	Confirm the new password by including the new password here again.	Open text field

Table 3. Fields and their explanations to be filled in for 'New password'.

! Important. Please save your entered data by clicking on the save icon. Otherwise, data will not be saved.

User rights

There are two types of user profiles: administrators and users.

Installation of NECID

NECID can be driven under the operating systems MS Windows XP, Windows 7 (32 and 64 bit), Windows 8, Windows Server 2003 – 2008 R2. A guide to install NECID on your computer is given on the NECID website: <u>http://necid.ifa.dguv.de/User/ErsteSeite.aspx</u>.

1.3 Starting NECID

After login you will see the following screen (print screen 6).



Print screen 6. Overview of NECID after login.

On the right you are able to choose one of the following actions:

- Measurement: Inclusion of measurement data in NECID
- Protocol (PDF): Creation of PDF files of included measurement data
- Timeline:
- **Data Exchange**: Creation of a database exchange file to copy one or more measurement series to another system
- **Export (Excel)**: Possibility to export data to Excel
- **Basic data Update**: Possibility to update the basic data tables on your local NECID version. Your stored measurement series will not be affected.

On the upper left of the screen you find two tabs: Program and Extra. Clicking on Program gives the opportunity to quit NECID. At the tab Extra you can check if an update is needed, by choosing `Check Update'. By doing so you will see which version you actually are using. Also a help function can be found here.

1.4 Linkage in database

Figure 1 gives an overview of the linkage of information in the NECID database. Different measurements IDs can be linked with one study ID. Subsequently, different premises can be linked with one measurement ID and for each premise information can be linked to one or different locations and workers. Different activities can be linked to different use rates of materials which subsequently can be linked to one or more workers. Finally, the results from different collected samples and time series from different instruments can linked to an activity with a specific use rate.

Risk management measures can be linked to one or more workers. The type of ventilation, used risk management measures and indoor conditions can be linked to one or more locations. Secondary sources can be linked to activities and finally ingredients can be linked to one or more materials.



Figure 1. Overview of linkage of information in the NECID database.

1.5 Overview of icons and labeling

In NECID different icons are used. An overview of these icons is given in table 4.
--

Icon	Function	Description
	New	A new data entry is prepared
	Save	Save the content of the page of the database. If you do not use this button, information might be lost.
×	Delete	Delete the selected entry
5	Discard	Discards to the last saved point
R	Plausibility check	Starts the plausibility check about all fields in the selected measurement series. All required fields without an input will be marked.
?	NECID help	Link to the help file
2	Upload file	Upload dialog to attach a file under the current caption
*	Open a saved file	

Table 4. Description	of the different ico	ns and their function in NECID.

 Image: A start of the start of	Apply	Apply the changes to the list
3	Scroll backwards to the next entry	
٢	Scroll forwards to the next entry	
•	Scroll up or down	Scroll between header entries
	Copy to clipboard	The content of on the selected page is copied to the clipboard
Ē	Paste from clipboard	Paste the last content from the clipboard on the selected page
	Choose activity	Multiple choosing to assign one sample or worker to several activities
_	Collapse	
÷	Expand	
	Plausibility sensed Plausibility is not sensed	
	Not entered	The empty entry has to be filled
>	To go to field	
	Add to used material list	
2	Apply changes to list	
	List tree open completely	
	Collapse	List tree closed completely
\sim	Search	
P	Search below	Find the next hit below in the current search
A	Search above	Find the next hit above in the current search
F	Check	Possibility to select multiple entries
•	The permitted choice	
 Image: A set of the set of the	Apply	Apply the selected entry
×	Close	Leave the window without a change.

The fields in NECID are labeled. The meaning the labeling is:

- Label for a field with normal Font: the input is voluntary.
- Label for a field with **BOLD** Font: the input is compulsory for plausibility check.
- Label for a field with **red BOLD** Font: the input is mandatory for save the data.
- Label for a field which is underlined: With a double click the Help for this field will be shown.

! Important. Please save your entered data by clicking on the save icon at the right ribbon or the check icon at the middle ribbon. Otherwise, data will not be saved.

2 Measurement

2.1 Lay-out input forms

To include data in NECID you have to go to 'Measurement'. After clicking '**Measurement**' you will get the screen 'Measurement series' (print screen 7):

Program Extra		5
Measurement	Premises	- Linkage of activity relationship
Kessurgeneret kerker Activity Activity Activity Study ID	140010E Internal-code	
Material Sample information	۵	4
ENM of interest for this set of measurements		
Measurement campaign		
Date campaign began	Date campaign ended	
Information for measurement		
2	Denied, in progress	
List stancasurement ser	les	
Measurements ID Study ID 140010603	Measurement strategy ENM of interest for this set of measurements Date of transference 11-8-2014	er
40010601 TNO Sh	dy 2 Single-walled carbon nanotubes (SWCNTs) 3-6-2014	
To edit selected row with double-t	ke or return	
E Quit		

Print screen 7. 1: Sitemap, 2: Fill in form, 3: List of entered measurement series, 4: Linkage of activity relationships, 5: Ribbon.

Each input form has the same lay-out. On top of the screen you find a ribbon on the right. On the left you find the sitemap (by clicking on 'Measurement series' it can be scrolled out of the screen), on the right an overview of the linkage of activity relationships and the fill in form (blank) in the center.

Help function

The help function in NECID can be opened in different ways:

- On the right on the ribbon on top of the screen
- By clicking F1
- Under 'Extra' on the upper left site of the screen.
- Also a mouse-over is included for many of the buttons and expressions or abbreviations.

Options on the ribbon

The ribbon on the right can be used to open a new data entry, save or delete data, discards to the last saved point, perform a plausibility check or go to the NECID help.

Sitemap

The sitemap on the right gives an overview of the different input screens. By clicking on the sitemap you can go to the different input screens.

Linkage of activity relationship

The linkage of activity relationship gives an overview of connections to an activity that you have made. By clicking on the activity tree, you can go to the input screens.

Fill in form

In the middle of screen 7 you find the fill in form. New data should be included the fields here.

2.2 Measurement series

To enter new data please click on the "white page" pictogram at the ribbon. Print screen 8 will be opened.

After including all the data in the input fields on the screen 'Measurement' you can start to define all the relevant contextual information of your sampling data, beginning with activity, the premises, the department, the location and task, risk management measures and personal protective equipment and occupational safety skill of the worker present (at the workplace). Finally, information regarding measurement instruments and the results of the measurements should be included.

If your campaign belongs to a research program select a `Study ID' and load up a `Measurement strategy' or enter your own measurement strategy. From the grid lists at bottom a set can be opened with a double click.

Program Extra		
Measurement series	Premises	
Measurement series Measurements ID	Internal-code	Linkage of activity relationship 1
Study ID	•	
Measurement strategy	۵	
ENM of interest for th set of measurements		3
Measurement campaign		
Date campaign began	Date campaign ended	
Information for measurement	<u>a</u>	
Instruction for use of da	a Denied, in progress	
🖥 Quit		

Print screen 8. Input form 'Measurement'. 1: Ribbon to include new forms, delete forms or save information.

The table (table 5) below gives an overview of the fields that have to be filled in:

Field name	Explanation	Format
Measurement ID	Identifier to uniquely identify a	Generated by NECID based on
	set of measurements.	institute and user.
Internal-code	Free field for the linkage to an	Included by user
	internal coding / reference	
	number	
Study ID	Definition	
Measurement strategy	Up load the measurement	
	strategy	
ENM of interest for this set of	Select one or more	Drop-down menu and free text
measurements	nanomaterials form the OECD	field
	list	
Measurement campaign	Give a name for the	Open text field
	measurement campaign. This is	
	for your own use.	
Date campaign began	Give the date of the start of the	Format (DD.MM.YYYY)
	campaign	
Date campaign ended	Give the date of the end of the	Format (DD.MM.YYYY)
	campaign	
Information for measurement	File load up for additional	Download
	documents or important	
	information for measurement	
	interpretation.	
Instruction for use of data	Give approval to whom is	Drop-down menu
	allowed to access and	
	download the data.	

Table 5. Fields and their explanations to be filled in for 'Measurement series'.

! Important. Please save your entered data by clicking on the save icon at the right. Otherwise, data will not be saved.

2.2.1 Activity

Describe the activity or activities that are performed (see print screen 9). Different activities can be during a measurement ID and different measurement IDs can be included in one study. The functions on the ribbon (see print screen 9) can be used to add activities and scroll between the activities. Saved activities are listed below the input fields.

In the input form information to describe the activity or activities should be obtained, e.g. start and stop time, duration, substance used, a detailed description of the activity or activities based on source domain and activity class, distance to source and work pattern.

Please describe the "Work and process" done during the activity and **scroll down** to describe the "Exposure" you could observe during the activity. You can change a known activity by clicking on it in the list beneath the blank.

At the column on the right you can find a list of activities that are linked (take care, it can be scrolled out of the screen). To see the list you have to close the plausibility check.

By double clicking on the activity at the left column you can open a form to fill in secondary sources. This input form needs to be filled in for each activity that was measured within the same measurement series. To enter a new activity please click on the "white page" pictogram at the ribbon.

Program Extra		
Activity	1 Premises	5 X 10 📓 🔹 📃
Measurement series	Activity ID: 0 🕢 🗅 🗸 🖪 👘	Linkage of activity relationship 3
Premises	Description	
	Activity kind @ ENM C No nano activity	
Sample information Import raw data	Description	
	Time start hh/mm/ss Time stop hh/mm/ss Activity hh/mm/ss duration	
	Total activity duration hours	
	Use of ENM	
	Classification	
	Activity code 👂	
	Physical state	
	Work and process	
	Distance source to Working pattern	
	List of activity and Activity code Time start Time sho	
	2	
Quit		

Print screen 9. Input form 'Activity'. 1: Ribbon to scroll between different activities and some other options. 2: Overview of included activities. 3: Ribbon to include new forms, delete forms or save information.

The table below (table 6) gives an overview of the fields that have to be filled in.

Table 6. Fields and their explanations to be filled in for 'Activity'.

Field name	Explanation	Format
Activity kind	Indicate if ENM are handled or	
	a no nano activity is performed	
Description	Give a short description of the	Open text field
	activity	
Time start	Give the time at the start of the	Format (hh/mm/ss)
	activity	
Time stop	Give the time at the end of the	Format (hh/mm/ss)
	activity	
Activity duration	The duration of the activity is	Automatically generated
	automatically generated based	
	of the time start and time stop.	
Total activity duration in shift	Give the total duration of the	Open text field
	activity in one shift.	
Use of ENM	Indicate if the activity is	Drop-down menu
	performed on a commercial or	
	non-commercial scale and if	
	the activity is production or	
	down-stream-use of the ENM	

Activity code	Chose an activity code. By	Drop-down menu. Choosing an
	clicking on the magnifier you	activity code will automatically
	open a coding list for the	fill some other fields
	activity class By clicking on the	The some other news.
	(1' icon you will come to the	
	+ Icon you will come to the	
	source domain and at last to	
	the specific activity class.	
	Please be as specific as	
	possible. See print screen 10	
	for more information.	
Loading type	Only asked for if relevant for	Drop-down menu
	activity	
Drop height	Only asked for if relevant for	Drop-down menu
	activity	
Agitation	Only asked for if relevant for	Drop-down menu
	activity. Give the level of	
	agitation:	
	-iviedian:	
	-Low:	
Spray technique	Only asked for if relevant for	Drop-down menu
	activity. Give the spray	
	technique:	
	-Air-pressurized spraying:	
	-Airless or air-assisted airless	
	spraying:	
	-Techniques with (verv) good	
	transfer efficiencies:	
Spray orientation	Only asked for if relevant for	Drop-down menu
	activity	
Blasting technique	Only asked for if relevant for	Dron-down menu
Shooting teerinique	activity	
Distance source to worker	Give the distance between the	Dron-down menu
Distance source to worker	worker and the source of	Drop-down mend
	worker and the source of	
Automation level	Only asked for if relevant for	Drop-down menu
	activity. Give the level of	
	automation:	
	-Remote working:	
	-Automatic:	
	-Semi automatic:	
	-Manual with restriction:	
	-Manual without restriction:	
Working pattern	Only asked for if relevant for	Drop-down menu
	activity. Indicate if the work is	
	performed:	
	Automated:	
	Manually:	
	Discontinuous regular	
	(interruptions).	
	Discontinuous unregular	
	Discontinuous unregular	

	(interruptions):	
Process temperature	Give the temperature in the	Open text field (only numbers)
	room where the	
	activity/process takes place	
Process temperature	Give the unit in which the	Drop-down menu
	temperature is expressed	
Exposure pattern	Give the exposure pattern:	Drop-down menu
	-Continuous:	
	-Intermittent:	
	-Occasional:	
Exposure situation	Only asked for if relevant for	Drop-down menu
	activity. Give the exposure	
	situation:	
	-None:	
	-Normal:	
	-Post positive:	
	-Intended exposure:	
	-Worst case:	
	-Malfunction/incidence:	
	-Testing facility:	
Remarks	Field to include more	Open text field
	information if needed	
	regarding the performed	
	activity.	

! Important. Please save your entered data by clicking on the save icon at the right. Otherwise, data will not be saved.

ACTIVITY CLASS	manual first stream use of EMA		x
	1a 🗄 🔎 🃌 🃌	? 🗸	×
Code 0	source domain 0 Activity class		
Titel	No activity		¢
Physical state			÷
Definition	No specific activity observed.		÷
Example activity	E. g. production is stopped, overnight measurement, measurement during lunch break.		÷
	ive emission during the production phase (synthesis) r of bulk manufactured nanomaterial powders adiates or application of ready-to-use products ı fracturing / abrasion of MNO-enabled products		

Print screen 10. By clicking on the magnifier behind 'Activity code' in print screen 9 you open a coding list for the different source domains. By clicking on the '+' icon you will come to the more specific activity classes. Please be as specific as possible. After selecting an activity the input fields will be automatically filled.

2.2.1.1 Second source

For each described activity, one or more secondary sources of exposure can be described in the form 'Second source' (see print screen 11). Different secondary sources can be described for one study and one or more secondary sources can be linked to one or more of the described activities. The type of source, place of the source and the distance from the source to the measurement devices should be included in the form.

The functions on the ribbon (see print screen 11) can be used to add secondary sources and scroll between the different secondary sources. Saved secondary sources are listed below the input fields for the different activities. Use the upward or downward arrows at the ribbon to select an activity and then on the "white page" pictogram at the ribbon.

Program Extra Second source			₽ 1	6	П X Ю 18 0
Measurement series Arthury	Activity Emptying big bags	1 Second source ID	: 0 🔾 🔾 🗋		Linkage of activity relationship 3
Atting Concert aways Promises Material Sample Information Report raw data	Secondary source type Place of the secondary source Distance source to measurement device Remarks	Pace of the secondary source	Second Work Pattern Distance source to metaconom device		••••••••••••••••••••••••••••••••••••
Quit	<u> </u>				

Print screen 11. Input form 'Second source'. 1; Ribbon to scroll between different secondary sources and some other options. 2: Overview of included secondary sources. 3 Ribbon to include new forms, delete forms or save information.

The table below (table 7) gives an overview of the fields that have to be filled in.

Field name	ield name Explanation	
Secondary source type	Indicate the type of secondary source:	Drop-down menu
	-Machine	
	-Worker	
	-Electro motor (drill machine,)	
	-Diesel engine (fork lifter, truck,)	
	-Gas engine (fork lifter, generator,)	
	-Sprays (spraying, high pressure cleaner,	
	atomize, humidifier,)	
	-Condensate (solvents,)	
	-Heater (radiant heater,)	
	-Metal processing (welding, grinding,)	
	-Open flame processes	
	-Other hot processes (plastic welding, foil	

Table 7. Fields and their explanations to be filled in for 'Second source'.

	shrinking, hot air gun,)	
	-Other activity at the same time with	
	ENM	
	-Other activity at the same time without	
	ENM	
Place of the secondary	Indicate if the secondary source is:	Drop-down menu
source	-Inside the workroom	
	-Outside the workroom	
	-Outdoor	
Distance source to	Give the distance from the source to the	Drop-down menu
measurement device	measurement device.	
Second work pattern	Indicate if the work is performed:	Drop-down menu
	-Continuous	
	-Discontinuous regular	
	-Discontinuous irregular	
	-Only manual	
Remarks	Field to include more information if	Open text field
	needed regarding the secondary source	
	in relation to the measurement devices	
	or the performed activity.	

! Important. Please save your entered data by clicking on the save icon at the right ribbon. Otherwise, data will not be saved.

2.2.2 Premises

For each measurement set the details of one or more premises should be described (see print screen 12).

Information regarding the premises like general information (e.g. name, place, country), premises size and branch code needs to be filled in for each premises where the measurements took place within the same measurement series. To enter a new premises please click on the "white page" pictogram at the ribbon and give the premises an ID number and a name or select a known premises from the list beneath the blank.

Premises			Premises	C	■ ■ X 10 ■ ●
Measurement series	Premises ID				Linkage of activity relationship
⊖+ Activity ↓ Second source	Premises name		Confide compan	ntiality regarding ny information	
Premises Material	Acronym			•	(3) Activity (\$1082;\$0.45:48;00)
Sample information Import raw data	Department name				
	City / Town				
	Country	Netherlands	•		
	Premises size	No of workers – Category	•		
	Total number of workers exposed	Total number of workers			
	Detailed process description			* *	
	Branch-code	Number of shift per		Ŷ.	
	Remarks	h day		*	
				×	
	List of premises				
	Premises ID Premises nam	ne City / Town	Branch-code Manufacture of food produc	ts	\triangleright
	1				
Quit	× 🖂				

Print screen 12. Input form 'Premises'. 1, Overview of included premises. 2; Ribbon to include new forms, delete forms or save information.

The table below (table 8) gives an overview of the fields that have to be filled in.

Field name	Explanation	Format
Premises ID	Give an ID to the premises	Open text field (only
		numbers)
Premises name	Give the name of the premises	Open text field
Confidentiality	Give approval to whom is allowed to access and	Drop-down menu
regarding company	download the data.	
information		
Acronym	Include an acronym for the premises in case of	Open text field
	confidentiality issues.	
Department name	Give a name to the department where the	Open text field
	measurements are performed.	
City/town	Enter the city where the premises is located.	Open text field
Country	Enter the country where the premises is located.	Drop-down menu
Premise size	Number of workers in the premise.	Open text field
No of workers	This field is automatically filled depending on	Drop-down menu,
category	'Premises size'	or automatically
		filled
Total number of	Give the total number of workers exposed to	Open text field
workers exposed	nanomaterials	
Total number of	This field is automatically filled depending on 'Total	Drop-down menu,
workers	number of workers exposed'	or automatically
		filled
Detailed process	Give an in depth description of the process the	Open text field
description	measurement is performed.	
Branch-code	Please enter a branch-code. By clicking on the	Drop-down menu
	magnifier you open a coding list of the Industrial	
	Classification system NACE industries. At the	
	beginning you see the several industry divisions. By	

Table 8. Fields and their explanations to be filled in for 'Premises'.

	clicking on the plus icon you will come to the major group, the industry group and at least to the specific	
	industry. Please be as specific as possible. The NACE –	
	Code is the EU classification of economic activities:	
	http://europa.eu.int/eur-	
	lex/lex/JOHtml.do?uri=OJ:L:2006:393:SOM:EN:HTML	
	See print screen 13.	
Shift duration	Give the duration of the shift.	Open text field (only numbers)
Number of shift per	Give the number of shift performed per day.	Open text field (only
day		numbers)
Remarks	Field to include additional information if needed	Open text field
	regarding the premise.	

! Important. Please save your entered data by clicking on the save icon at the right ribbon. Otherwise, data will not be saved.

ıym	Available in NECID database	-
rtme	SVZ_NACE2	
Tow	Code Titel	
itry	A AGRICULTURE, FORESTRY AND FISHING B MINING AND QUARRYING C MANUFACTURING	
ses	D ELECTRICITY, GAS, STEAM AND AIR CONDITIONING SUPPLY E "WATER SUPPLY; SEWERAGE, WASTE MANAGEMENT AND REMEDIATION ACTIVITIES" E CONSTRUCTION	
huml sed	G "WHOLESALE AND RETAIL TRADE; REPAIR OF MOTOR VEHICLES AND MOTORCYCLES" H TRANSPORTATION AND STORAGE LACCOMMODATION AND FOOD SERVICE ACTIVITIES	
ed p iptio	JINFORMATION AND COMMUNICATION K FINANCIAL AND INSURANCE ACTIVITIES IFAL ESTATE ACTIVITIES	
<u>ch-c</u> dura	M PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES N ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES O "PUBLIC ADMINISTRATION AND DEFENCE: COMPULSORY SOCIAL SECURITY"	
ırks	P EDUCATION Q HUMAN HEALTH AND SOCIAL WORK ACTIVITIES R ARTS, ENTERTAINMENT AND RECREATION S OTHER SERVICE ACTIVITIES	
pren		
s ID	Premises name City / Town Branch-code	

Print screen 13. By clicking on the magnifier behind 'Branche code' in print screen 12 you open a coding list of the Industrial Classification system NACE industries. At the beginning you see the several industry divisions. By clicking on the plus icon you will come to the major group, the industry group and at least to the specific industry. Please be as specific as possible. The NACE – Code is the EU classification of economic activities: http://europa.eu.int/eur-lex/JOHtml.do?uri=OJ:L:2006:393:SOM:EN:HTML

2.2.2.1 Location

For each premise one or more locations can be described (see print screen 14).

Information about for example the type of the location, room size the number of workers and the general housekeeping should be included for each location where measurements took place. For one premise different locations can be defined simply by clicking on the "white page" pictogram at the ribbon again. To enter a new location please click on the "white page" pictogram at the ribbon again and give the location a name or select a known location from the list beneath the blank.

Program Cons				-		
Location		1	Premises none		🖥 🗙 🖄 🔯 🔹	
Measurement series ↔ Activity	Location ID: 2	001/11			Linkage of activity relationship	3
Second source	Location name					
Premises Location	Description of the workplace			A V		
+ Wotker	Location type					
- Material	Room length	m Room width	m Room height m			
Sample information Import raw data	Room volume	• m ³				
	Description of the activities/processes			A		
	Location drawing	<u>a</u>				
	Pictures	<u>ð</u>				
	No. of workers present	No. of involved workers				
	General housekeeping			•		
	Remarks			A W		
				2		
	List of locations cocation ID: Location type	Room volume Location name				
		Схс				
Quit						

Print screen 14. Input form 'Locations'. 1; Ribbon to scroll between different locations and some other options. 2: Overview of included locations. 3 Ribbon to include new forms, delete forms or save information.

The table below (table 9) gives an overview of the fields that have to be filled in.

Field name	Explanation	Format
Location name	Give a name for the location	Open text field
Description of the	Give a general description of the location	Open text field
workplace	and the different activities performed at	
	that location	
Location type	Indicate if the location is:	Drop-down menu
	- Workroom indoor: Both the source and	
	the worker are located indoors. The	
	indoor environment should be enclosed	
	by walls on each side and a roof on top. A	
	cabin or a room should be treated as an	
	indoor environment.	
	-Area indoor: Both the source and the	
	worker are located indoors. The indoor	
	environment should be enclosed by walls	
	on each side and a roof on top. A garage	
	or production hal should be treated as an	
	workroom indoor.	
	-Area outdoor: Both the source and the	
	worker are located outdoors. The	

Table 9. Fields and their explanations to be filled in for 'Locations'.

	outdoor environment could be enclosed	
	by one or two walls and/or a roof on top.	
	A carport or production hall should be	
	treated as an indoor environment.	
Room length	This field is optional	Open text field (only numbers)
Room width	This field is optional	Open text field (only numbers)
Room height	This field is optional	Open text field (only numbers)
Room volume	This field can automatically be filled	Automatically filled, open
	based on room length, width and height,	text field (only numbers)
	a number can be included, or a drop-	or drop-down menu
	down menu can be used	
Description of the	Give an in depth description of the	Open text field
activities/processes	activities or processes that took place	
	during the measurement at this location	
Location drawing	Here you can (one by one) upload a	Download
	sketch or drawing of the location	
	including the position of used devices,	
	risk managements measures, position of	
	the worker etc.	
Pictures	You can (one by one) upload pictures of	Download
	the location.	
No. of workers present	Indicate the total number of workers	Open text field (only
	present at the location during the	numbers)
	measurement	
No. of involved workers	Indicate the number of workers that were	Open text field (only
	involved in the ENM handling or	numbers)
	processing during the measurement	
General housekeeping	Indicate the level of general	Drop-down menu
	housekeeping and especially consider	
	cleaning practices and contamination of	
	surfaces with dust:	
	-Poor: e.g. no specific cleaning or use of	
	non-appropriate methods like	
	pressurized air	
	-Average:	
	-General good housekeeping practices:	
	e.g. daily cleaning using appropriate	
	methods (e.g. vacuum), preventive	
	maintenance of machinery and control	
	measures	
	-Demonstrable and effective	
	housekeeping practices:	
	-Process fully enclosed:	
	The default is set at no specific cleaning	
	practices, process not fully enclosed.	
Remarks	Field to include any additional remarks or	Open text field
	information about location.	

! Important. Please save your entered data by clicking on the save icon at the right ribbon. Otherwise, data will not be saved.

2.2.2.1.1 RMM

For each location in a premises one or more risk management measures (RMMs) can be described. First select a location (see print screen 15 (button 1)) and subsequently include information regarding the RMMs. RMMs can be linked to one or more activities.

In the input form 'RMM' the opportunity to include an activity is given. The user is then redirected to the input form 'Activity'. To enter a risk management measure (RMM) please click on the "white page" pictogram at the ribbon or select a known RMM from the list beneath the blank. Please define the start time and stop time the RMM were applied.

In the input form there are 3 sub forms that should be completed: Ventilation (print screen 16), Local control (print screen 17) and Indoor condition (print screen 18). Information regarding ventilation, e.g. efficiency rate, number of air changes per hour and level of aggregation should be included in the sub form 'Ventilation'. In the sub form 'Local control' information about the type of control that is used and some details about the control should be included. Finally information like humidity, temperature, air pressure and air velocity can be included in the sub form 'Indoor climate'.

Program Extra		1.5	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	
RMM		Premises	2	🖥 X 🗠 📓 🔹 💈
Measurement series Activity	Location Cxc 1	1 0 RMM-ID: 0 🔾 🔾 🗸		Linkage to accompromotion p
Control source Forendessurce Forendess Control source Montrol Controls Contrels Controls Contrels Contrels Controls	Activity Time start hh/mm Ventilation Local control indoor condition General ventilation Efficiency of room ventilation Air changes Segregation Air velocity at the opening of room ventilation Remarks List of Semm Extreme Location Ventilation Vent	per hour	Create new activity	4
Quit				

Print screen 15. Input form 'RMM'. 1; Ribbon to scroll between different locations. 2: Ribbon to scroll between different RMMs and some other options. 3 Ribbon to include new forms, delete forms or save information. 4: Possibility to include additional activities. 5: Sub forms 'Ventilation', 'Local control' and 'Indoor condition'. 6: Overview of include RMM.

The table below (table 10) gives an overview of the fields that have to be filled in as general information that is the same for all sub forms.

Table 10. Fields and their explanations to be filled in for 'RMM'.

Field name	Explanation	Format
Activity	If an additional activity should be included then the user can used button 4 from print screen 15.	Drop-down menu
Time start	This field can automatically be filled based information from the input form 'Activity'. It is possible to change the time manually.	Automatically filled or open text field (only numbers) format (hh/mm)
Time stop	This field can automatically be filled based information from the input form 'Activity'. It is possible to change the time manually.	Automatically filled or open text field (only numbers) format (hh/mm)

! Important. Please save your entered data by clicking on the save icon at the right ribbon. Otherwise, data will not be saved.

Then some specific information is asked for the different sub forms. Print screen 16 presents sub form 'Ventilation'.

RMM	Premises none	🖥 🗙 🗠 📓 🛛
Measurement series	Location 1 CRMM-ID: 0 G G L V E B	Linkage of activity relationship
Second source	Activity Create new activity	
Prendes Lestino Wolve Wolve Wolve Sample Information buyert zan das	Time start h/mm Time stop hh/mm Ventilation Local control [hodor condition] Image: Second condition Image: Second condition General ventilation Image: Second condition Image: Second condition Image: Second condition General ventilation Image: Second condition Image: Second condition Image: Second condition Segregation Image: Second condition Image: Second condition Image: Second condition Air velocity at the opening of room, ventilation Image: Second condition Image: Second condition Remarks Image: Second condition Image: Second condition Image: Second condition	
Quit		

Print screen 16. Sub form RMM – Ventilation. 1: List of RMM.

The table below (table 11) gives an overview of the fields that have to be filled for RMM – sub form 'Ventilation'.

Table 11. Fields and their explanations to be filled in for RMM – sub form 'Ventilation'.

Field name	Explanation	Format
General ventilation	Indicate the type of general	Drop-down menu
	ventilation:	
	-none ventilation	

	-natural ventilation-doors or	
	windows open	
	-natural ventilation-doors or	
	windows closed	
	-natural ventilation-outdoor	
	working	
	-mechanical ventilation-	
	incoming and outgoing air	
	-mechanical ventilation-only	
	incoming air	
	-mechanical ventilation-only	
	outgoing air	
Efficiency of room ventilation	Indicate the level of efficiency:	Dron-down menu
	-Poor	
	-Average	
	-High	
Air changes	Give the number of air changes	Open text field (only numbers)
	ner hour	open text held (only humbers)
Filter	Only asked for if mechanical	Yes / no option
	ventilation is selected Indicate	
	if a filter is used in the	
	mechanical ventilation system	
Recirculating air	Only asked for if mechanical	Yes / no ontion
	ventilation is selected Indicate	
	if the air is recirculated	
Filter group	Only asked for if mechanical	Drop-down menu
	ventilation is selected and filter	Brop down menu
	selected as 'yes' Indicate the	
	type of filter:	
	-E-Dust spot efficiency filters	
	-G=Arrestance filters	
	-H=HFPA filters	
	-II=III PA filters	
Filter class	Only asked for if mechanical	Drop-down menu
	ventilation is selected and filter	Brop down mend
	selected as 'yes' Indicate the	
	class of filter that is used. The	
	filters that can be selected	
	depends of type of filter	
	selected	
Segregation	Indicate the level of	Drop-down menu
	segregation which is the level	
	of isolation of the emission	
	source from the worker	
	-None segregation	
	-Partial segregation without	
	ventilation	
	-Partial segregation with	
	ventilation	
	-Complete segregation without	
	exhaust ventilation	

	-Complete segregation with exhaust ventilation and no air circulation	
Air velocity at the opening of room ventilation	Give the air velocity in m/s at the opening of the room ventilation.	Open text field (only numbers)
Remarks	Field to include additional information regarding ventilation.	Open text field

! Important. Please save your entered data by clicking on the save icon at the right ribbon. Otherwise, data will not be saved.

Print screen 17 presents sub form 'Local control'.

RMM		📑 🗙 🗠 📓 😐
Measurement series	Location Cxc 1 🗘 RMM-ID: 0 📀 🕥 🖿 🗸 🖻	Linkage of activity relationship
Second source	Activity	activity
Premises	Time start hh/mm Time stop hh/mm Verslation Local control Indoor condition	
→ Worker	Used Control ·	
Sangle information Import raw data	Definition	
	Remarks	
<	Index Code RMM	
	List of EMM Star Premise Location Ventilation Start Stop	
Quit		

Print screen 17. Sub form RMM – Local control. 1: Buttons to add or delete a local control. 2: Overview of saved local controls 3: List of RMM.

The table below (table 12) gives an overview of the fields that have to be filled for RMM – sub form 'Local control'.

Table 12. Fields and their	explanations to be	filled in for RMM -	sub form 'Local control'.
----------------------------	--------------------	---------------------	---------------------------

Field name	Explanation	Format
Used control	Indicate the RMM that is used:	Drop-down menu
	0 No localized controls	
	1 Containment – no extraction	
	1.1 Low level containment	
	1.2 Medium level containment	
	1.3 High level containment	
	2 Local ventilation systems (LEV)	
	2.1 Receiving hoods	
	2.1.1 Canopy hood	
	2.1.2 Other receiving hoods	

	2.2 Capturing hoods	
	2.2.1 Fixed capturing hood	
	2.2.2 Movable capturing hood	
	2.2.3 On-tool extraction	
	2.3 Enclosing hoods	
	2 3 1 Fume curboard	
	2.3.2 Horizontal / downward laminar flow	
	booth	
	2.2.2 other enclosing heads	
	2.3.5 Other Enclosing hours	
	2.4 Other LEV systems	
	4 Suppression techniques	
	4.1 Wetting at the point of release	
	4.2 Knock-down suppression	
	5 Glove bags and glove boxes	
	5.1 Glove bag	
	5.1.1 Glove bag (non-ventilated)	
	5.1.2 Glove bag (ventilated or kept under	
	negative pressure)	
	5.2 Glove box	
	5.2.1 Low-specification glove box	
	5.2.2 Medium-specification glove box	
	5.2.3 High-specification glove box	
Definition	After selecting a RMM a description and a	
	picture of the RMM is given automatically	
Filter	Only asked for if RMM 2. 2.1. 2.1.1. 2.1.2.	Yes / no option
	2.2. 2.2.1. 2.2.2. 2.2.3. 2.3. 2.3.1. 2.3.2	
	2.3.3. 2.4. 5.1.2. 5.2. 5.2.1. 5.2.2 or 5.2.3 is	
	selected. Indicate if a filter is used.	
Recirculating air	Only asked for if RMM 2, 2, 1, 2, 1, 1, 2, 1, 2,	Yes / no option
	222212222232323231232	
	2332451252525252152200000000000000000000000	
	selected Indicate if the air is recirculated	
Filtor group	Only asked for if PMM 2, 2,1, 2,1,1, 2,1,2	Drop down monu
		Drop-down mend
	2.2, 2.2.1, 2.2.2, 2.2.3, 2.3, 2.3.1, 2.3.2	
	2.5.5, 2.4, 5.1.2, 5.2, 5.2.1, 5.2.2 01 5.2.5 IS	
	Selected. Indicate the type of filter:	
	-F=Dust spot enciency inters	
	-H=HEPA filters	
	-U=ULPA filters	
Filter class	Only asked for if RMM 2, 2.1, 2.1.1, 2.1.2,	Drop-down menu
	2.2, 2.2.1, 2.2.2, 2.2.3, 2.3, 2.3.1, 2.3.2	
	2.3.3, 2.4, 5.1.2, 5.2, 5.2.1, 5.2.2 or 5.2.3 is	
	selected. Indicate the class of filter that is	
	used. Class of filter that can be selected	
	depends of type of filter selected.	
Efficiency of this	Only asked for if RMM 2, 2.1, 2.1.1, 2.1.2,	Drop-down menu
ventilation	2.2, 2.2.1, 2.2.2, 2.2.3, 2.3, 2.3, 1, 2.3.2	
	2.3.3, 2.4, 5.1.2, 5.2, 5.2.1, 5.2.2 or 5.2.3 is	
	selected. Indicate the efficiency of the	
	ventilation:	

	-poor	
	-mealum	
	-nign	
Air velocity at the	Only asked for if RMM 2, 2.1, 2.1.1, 2.1.2,	Open text field (numbers
opening of the machine	2.2, 2.2.1, 2.2.2, 2.2.3, 2.3, 2.3.1, 2.3.2	only)
ventilation	2.3.3, 2.4, 5.1.2, 5.2, 5.2.1, 5.2.2 or 5.2.3 is	
	selected. Give the air velocity in m/s at the	
	opening of the machine ventilation.	
Volume flow	Only asked for if RMM 2, 2.1, 2.1.1, 2.1.2,	Open text field (numbers
	2.2, 2.2.1, 2.2.2, 2.2.3, 2.3, 2.3.1, 2.3.2	only
	2.3.3, 2.4, 5.1.2, 5.2, 5.2.1, 5.2.2 or 5.2.3 is	
	selected. Give the volume flow of the local	
	control, in the next field the unit should be	
	indicated.	
Volume flow	Only asked for if RMM 2, 2.1, 2.1.1, 2.1.2,	Drop-down menu
	2.2, 2.2.1, 2.2.2, 2.2.3, 2.3, 2.3.1, 2.3.2	
	2.3.3, 2.4, 5.1.2, 5.2, 5.2.1, 5.2.2 or 5.2.3 is	
	selected. Indicate the unit in which the	
	volume flow is expressed.	
Remarks	Field to include additional information	Open text field
	regarding local control.	

! Important. Please save your entered data by clicking on the save icon at the right ribbon. Otherwise, data will not be saved.

Print screen 18 presents sub form 'Indoor conditions'.

RMM	Premises none	🖩 🗙 🗠 📓 🛛
Measurement series	Location 1 DRMM-ID: 0 😋 🕥 🖿 🗸 🖻 🗎	Linkage of activity relationship
Second source	Activity Create new activity	
	Time start hh/mm Time stop hh/mm Ventilation Local control Indoor condition	
Material Sample information	Relative humidity % Air velocity at the m/s	
Import raw data	Airflow direction • Temperature °C •	
	Air pressure hPa	
	Remarks to indoor climate	
	Index Premise Location Ventilation Start Stop	
Quit		

Print screen 18. Sub form RMM – Indoor conditions. 1: List of RMM.

The table below (table 13) gives an overview of the fields that have to be filled for RMM – sub form 'Indoor conditions'.

Field name	Explanation	Format
Relative humidity	Give the average humidity in the working environment	Open text field (numbers only)
Air velocity at the working spot	Give the average air velocity in m/s.	Open text field (numbers only)
Airflow direction	Indicate the most dominant airflow direction with regard on source and worker.	Drop-down menu
Temperature	Give the temperature in the working environment	Open text field (numbers only)
Temperature	Indicate if temperature is given in degrees celcius or kelvin	Drop-down menu
Air pressure	Give the air pressure in the working environment	Open text field (numbers only)
Remarks to indoor climate	Field to include additional information regarding the indoor climate.	Open text field

Table 13. Fields and their explanations to be filled in for RMM – sub form 'Indoor conditions'.

! Important. Please save your entered data by clicking on the save icon at the right ribbon. Otherwise, data will not be saved.

2.2.2.2 Worker

For each premise information for one or more workers can be included (see print screen 19). Please describe the job code and the level of training of the worker in the use of PPE en RPE. Subsequently more detailed information about the used PPE and RPE can be included (paragraph 2.2.2.2.1).

Worker		1	Premises none	🖩 🗙 🗠 📓 😐
Measurement series Activity	Worker ID: 1 🥥 🥥			Linkage of activity relationship
Second source	Job title			
+ Location	Worker Number			
H++ Worker	ISCO job code 🔊		×	
Material	Trained to PPE	,	•	
Sample information Import raw data	Briefed on risks	C No		
	Shaven ?	C No. C Non-appli	cable	
	Trained to wear RPE C Yes	C No C Non-appli	cable	
	Trained to store RPE	C No C Non-appli	cable	
	Trained to maintain RPE C Yes	C No C Non-appli	cable	
	Remarks		А 	
	List of workers	lob title	1SCO inh code	
		Job lile	1300 Job code	>
Quit				

Print screen 19. Input form 'worker'. 1: Ribbon to scroll between different workers and some other options. 2: List of workers.

The table below (table 14) gives an overview of the fields that have to be filled for 'Worker'.

Field name	Explanation	Format
Job title	Give a description of the job	Open text field
	title of the worker	
Worker Number	Give a number to the worker	Open text field (numbers only)
ISCO job title	Please select a ISCO job title. By	Drop-down menu
	clicking on the magnifier	
	behind 'ISCO Job code' you will	
	open a coding list form SVZ-	
	ISCO, see print screen 20.	
	Please be as specific as	
	possible.	
Trained to PPE	Indicate how trained and	Drop-down menu
	experienced a worker is:	
	-trained and experienced	
	-trained and unexperienced	
	-untrained and experienced	
	-untrained and unexperienced	
Briefed on risks	Indicate if the worker is briefed	Yes / no option
	on the nano specific risks	
Shaven?	Indicate if the worker is clean	Yes / no option
	shaven in case of the use of a	
	tight fitting face-piece	
Trained to wear RPE	Indicate of the worker is	Yes / no / non-applicable
	trained how to use the	option
	respiratory protective	
	equipment (RPE) correctly.	
Trained to store RPE	Indicate of the worker is	Yes / no / non-applicable
	trained how to store the	option
	respiratory protective	
	equipment (RPE) correctly.	
Trained to maintain RPE	Indicate of the worker is	Yes / no / non-applicable
	trained how to maintain the	option
	respiratory protective	
	equipment (RPE) correctly.	
Remarks	Field to include additional	Open text field
	information regarding the	
	worker.	

Table 14. Fields and their explanations to be filled in for 'Worker'.

! Important. Please save your entered data by clicking on the save icon at the right ribbon. Otherwise, data will not be saved.

SVZ_ISCO		_
1	14 🗄 🔎 🏓 🍂	🗸 🖉
Code	Titel	
Definition		A
include tasks		÷
include occu		÷
exclude occupations		¢
Notes		4
O Armed forces Armed forces Armed forces Armed forces Professionals A Clerical suppo 5 Service and sa 6 Skilled agricul 7 Craft and relat 8 Plant and mac 9 Elementary oc	ccupations d associate professionals t workers es workers raal, forestry and fishery workers d trades workers d trades workers ine operators, and assemblers upations	

Print screen 20. By clicking on the magnifier behind 'ISCO Job code' in print screen 19 you open a coding list form SVZ-ISCO. At the beginning you see major divisions. By clicking on the plus icons you will come to more detailed descriptions. Please be as specific as possible.

2.2.2.1 Expos and PPE

For each individual worker information regarding the use of PPE can be included (see print screen 21). This worker can be linked to one or more activities.

Program Extra Expos.and PPE	1	
E Measurement series	1 Exp.ID: 3 @ @ 프 / 5 18 명	3 Linkage of activity relationship
→ Second source Activity		Create new activity
Uccation Uccation Work start Remarks	hh/mm Work stop hh/mm Working time hh/mm	
Exposiand PPE PPE / RPE		
→ Material Separation / Pers → Sample information enclosure → Import rav data Type of RPE	onal None	
RPE Model	tion2	
Other PPE	C Yes C No C Non-applicable	
Type of coverais	None •	
Type of gloves	None •	
Remarks on PPE		1
		2
	des ID Made start Made start Ture of DDE	
	Ken LD VVOIK Stant VVOIK Stop Type of RPE	
2 2	13.01.00 13:14:00 None	
E Quit		
		Seekers 0%

Print screen 21. Input form 'Expos and PPE'. 1: Ribbon to scroll between different workers and the activities for each worker and some other options. 2: List of workers and the use of PPE for each activity. 3: Possibility to include additional activities.

The table below (table 15) gives an overview of the fields that have to be filled in:

Field name	Explanation	Format
Activity	Indicate the activity the worker is performing.	Drop-down menu
	These activities are included in the input form	
	'Activity'. If an additional activity should be	
	included then the user can use button 3 from	
	print screen 21.	
Work start	The field is automatically filled based on the	Automatically filled or
	activity selected. However, the user is able to	open text field
	adapt/fill in the time manually.	(numbers only)
Work stop	The field is automatically filled based on the	Automatically filled or
	activity selected. However, the user is able to	open text field
	adapt/fill in the time manually.	(numbers only)
Working time	The field is automatically filled based on the start	Automatically filled or
	and stop time of the work	open text field
		(numbers only)
Remarks	Open text field to include additional information	Open text field
	regarding the working time	
Separation/personal	Indicate the level of separation/personal	Drop-down menu
enclosure	enclosure:	
	-None separation	
	-Partial separation without ventilation	
	-Partial separation with ventilation	
	-Complete separation without ventilation	
	-Complete separation with ventilation	
Type of RPE	Select the type of RPE that is used:	Drop-down menu
	-None (this is the default in case no information is	
	available)	
	-Respirator/Filtering Face Piece (FFP1)	
	-Respirator/Filtering Face Piece (FFP2) -	
	Respirator/Filtering Face Piece (FFP3)	
	-Respirator/half mask, particle filter (FMP1 or P1)	
	-Respirator/half mask, particle filter (FMP2 or P2)	
	-Respirator/half mask, particle filter (FMP3 or P3)	
	-Respirator/Full face mask, particle filter (P1)	
	-Respirator/Full face mask, particle filter (P2)	
	-Respirator/Full face mask, particle filter (P3)	
	-Respirator/powered(fan assisted mask)(TMTP)	
	-Respirator/powered(fan-assisted mask)(TM2P)	
	-Respirator/powered(fan assisted haad)(TU1D)	
	-Respirator/powered(fan assisted hood)(THIP)	
	-Respirator/powered(fan-assisted hood)(TH2P)	
	-Respirator/powered(lan-assisted hood)(InsP)	
	(LDH1)	
	-Breathing apparatus/constant flow airline BA	
	(LDH2,LDM1,LDM2 or half mask)	
	-Breathing apparatus/constant flow airline BA	
	(LDH3,LDM3, hood or full mask)	

Table 15. Fields and their explanations to be filled in for input form 'Expos and PPE'.

	•	
	-Breathing apparatus/constant flow airline BA	
	(suit)	
	-Breathing apparatus/continiuous flow airline(BA,	
	1A, 1B)	
	-Breathing apparatus/continiuous flow airline(BA,	
	2A, 2B)	
	-Breathing apparatus/continiuous flow airline(BA,	
	3A, 3B)	
	-Breathing apparatus/continiuous flow airline(BA,	
	4A, 4B)	
	-Breathing apparatus/half mask/Demand valve	
	BA (Airline or self-contained)	
	-Breathing apparatus/full face mask/ Demand	
	valve BA (Airline or self-contained), with positi	
	-Breathing apparatus/full face mask/ Demand	
	valve BA (Airline or self-contained), without po	
	-Other, specify	
RPE model	Use this field if the option 'Other: specify' is	Open text field
	selected in the previous drop-down menu	
Face-piece fit testing	Indicate if the wearer of a tight-fitting face-piece	Yes / No / non-
	has undergone face-piece fit testing	applicable option
Other PPE	Indicate if another PPE is used with a respirator	Yes / No / non-
	or a breathing apparatus.	applicable option
Goggles	Only asked for is guestion 'Other PPE' is	Drop-down menu
	answered with 'ves'.	
	Indicate the type of goggles that is used:	
	-None	
	-Eve-protectors, spectacles	
	-Goggles, type 4 against dusts	
	-Goggles, type 5 against gases, fumes, aerosols	
	-Eve-shield attached to industrial helmet	
Does the wearer use	Only asked for is question 'Other PPE' is	Yes / No option
optic spectacles	answered with 'ves'. Indicate if the wearer uses	
	optic spectacles.	
Face shield	Only asked for is question 'Other PPF' is	Yes / No option
	answered with 'ves'. Indicate if the wearer uses a	
	face shield.	
Hearing protection	Only asked for is question 'Other PPF' is	Drop-down menu
	answered with 'ves'. Indicate if the wearer uses:	
	-None	
	-Hearing protection, ear plugs	
	-Hearing protection, ear muffs	
	-Far muffs attached to industrial helmet	
	-Eve-shield attached to industrial helmet	
Helmet	Only asked for is question 'Other PPF' is	Yes / No option
	answered with 'yes' Indicate if the worker wears	
	a helmet	
Type of coverall	Indicate the type of coverall:	Drop-down menu
	-None	Drop do withicitu
	-None protective work wear	
	-Coverall (Chemical type 1)	

	-Coverall (Chemical type 2)	
	-Coverall (Chemical type 3)	
	-Coverall (Chemical type 4)	
	-Coverall (Chemical type 5)	
	-Coverall (Chemical type 6)	
	-Coverall (heat and flame)	
	-Coverall (mechanical)	
	-Coverall (heat and flame)	
	-other: specify	
Type of gloves	Indicate the type of gloves:	Drop-down menu
Type of gloves	Indicate the type of gloves: -None	Drop-down menu
Type of gloves	Indicate the type of gloves: -None -Disposable gloves	Drop-down menu
Type of gloves	Indicate the type of gloves: -None -Disposable gloves -Gloves (Chemical)	Drop-down menu
Type of gloves	Indicate the type of gloves: -None -Disposable gloves -Gloves (Chemical) -Gloves (Mechanical)	Drop-down menu
Type of gloves	Indicate the type of gloves: -None -Disposable gloves -Gloves (Chemical) -Gloves (Mechanical) -Gloves (Heat and flame)	Drop-down menu
Type of gloves	Indicate the type of gloves: -None -Disposable gloves -Gloves (Chemical) -Gloves (Mechanical) -Gloves (Heat and flame) -Other: specify	Drop-down menu
Type of gloves Remarks on PPE	Indicate the type of gloves: -None -Disposable gloves -Gloves (Chemical) -Gloves (Mechanical) -Gloves (Heat and flame) -Other: specify Field to include additional information regarding	Drop-down menu

! Important. Please save your entered data by clicking on the save icon at the right ribbon. Otherwise, data will not be saved.

2.2.3 Material

For each material (print screen 22) and the ingredients (print screen 23) of materials information should be included in NECID.

Program Extra Timeline						1
Material			Premises sfg		2	(🗠 🛃 💡
Measurement series	Material ID:	1 😧 🕤 🌔 🗸 👔		Add	ingredient	Linkage of activity relationship
È→ Activity → Second source	Material Information		(pure nano materia Confidential of material informatior	l) 	•	₽
Premises → Location	Nano material Product name	r yes ⊂ no	Purity of material OECD	i e yes ⊂ no	-	
⊕→ Worker ⊖→ Material	Product form	-]	1		
Material used rate Sample information	Version code Kind of density	-	Product trade name			
→ Import raw data	Density		Ī			
	Molecular mass	g/m	BET		•	
	Particle size Coating	C Yes, Coating No	Volume specific surface area Doping	C Yes, Doping ⓒ No	n²/m²	
	Remarks		_			
	Handled Material during	g the measurement process		3	_	
	L.	Material [1] example [2] example	1 I ingredient	\mathbf{i}		
Quit		(3) example (4) example 2	2 Ingreuient 1			

Print screen 22. Input form 'Material'. 1: Ribbon to scroll between different materials and some other options. 2: Button to include ingredients, linked to the selected material. 3: Overview of included materials and ingredients.

The table below (table 16) gives an overview of the fields that have to be filled in.

Table 16. Fields and their explanations to be filled in for input form 'Material'.

Field name	Explanation	Format
Confidential of material	Indicate the confidentiality of the	Drop-down menu
	material:	
	-Free for NECID	
	-Only categorized material	
	information free for NECID	
	-Confidential (only for institute)	
Nano material	Indicate if the material handled is a	Yes / No option
	nano material. In case 'No' is selected,	
	some questions will disappear as they	
	are not relevant in that case.	
Purity of material	Indicate if a pure or raw material is	Yes / No option
	used or a material containing different	
	ingredients.	
Product name	Give the common substance or	Open text field
	product name.	
OECD	Indicate the material handled based	Drop-down menu
	on the OECD list.	
Product form	Indicate the form of the product:	Drop-down menu
	- liquid	
	-powder	
	-solid object	
	-fibers	
	-paste	
Version code	Give the version code of the product.	Open text field
Product trade name	Give the name of the product as it is	Open text field
	traded	
Kind of density	Select a category of density:	Drop-down menu
	-Bulk	
	-Elemental	
	-Agglomerate	
Density	Give the density of the material.	Open text field (numbers
	2	only)
Density	Indicate if the density is in g/cm ³ or	Drop-down menu
	kg/m³	
Molecular mass	Give the molecular mass of the	Open text field (numbers
	product.	only)
BET	Give the Brunauer-Emmett-Teller(BET)	Open text field (numbers
	surface area.	only)
BET	Indicate the unit in which the BET is	Drop-down menu
	expressed.	
Particle size	Give the initial particle size of the	Open text field (numbers
	product	only)
Volume specific surface	Give the Volume specific surface area.	Open text field (numbers
area		only)
Coating	Indicate if the product is coated.	Yes / No option
Doping	Indicate if the product is doped.	Yes / No option
Remarks	Field to include additional information	Open text field
	regarding the used material.	
Viscosity	Only asked for if for 'Product form' the	Drop-down menu

	answer 'liquid' or 'Paste' is selected.	
	Indicate the viscosity:	
	-Low viscosity	
	-Moderate viscosity	
	-High viscosity	
Dustiness	Only asked for if for 'Product form' the	Drop-down menu
	answer 'Powder', 'Solid object' or	
	'fibers' is selected. Indicate the	
	dustiness:	
	-Firm ganules: For example, firm	
	polymer granules, granules covered	
	with a layer of wax, bound fibres, such	
	as in cotton. No dust emission without	
	intentional breakage of the product	
	-Granules, flakes or pellet: Granules or	
	flakes that may fall apart and crumble.	
	For example, washing powder, sugar	
	or fertilizer	
	-Coarse dust: A dust cloud is formed.	
	but settles quickly due to gravity. For	
	example, sand, coarse carbon black.	
	calcium stearate, unbound fibres	
	-Fine dust: A dust cloud is formed that	
	is clearly visible for some time. For	
	example talcum powder flour	
	-Extremely fine and light powder: A	
	visible dust cloud remains airborne for	
	a long time	
Moisture content	Only asked for if for 'Product form' the	Drop-down menu
	answer 'Powder' or 'Solid object' is	
	selected. Indicate the moisture	
	content:	
	-Dry product (<5% moisture content)	
	-5-10% moisture content	
	->10% moisture content	
Measured dustiness	Only asked for if for 'Product form' the	Drop-down menu
system	answer 'Powder'. 'Solid object' or	
	'fibers' is selected. Indicate which	
	dustiness system is used to measure	
	the dustiness:	
	-rotating drum	
	-continuous drop	
Measured dustiness	Only asked for if for 'Product form' the	Open text field (numbers
	answer 'Powder'. 'Solid object' or	only)
	'fibers' is selected. Give the measured	,
	dustiness.	
Measured dustiness	Only asked for if for 'Product form' the	Drop-down menu
	answer 'Powder'. 'Solid object' or	
	'fibers' is selected. Indicate which unit	
	is used to express the dustiness.	
	-mg/kg	
L	סיי /סיי	

! Important. Please save your entered data for each individual material and ingredient by clicking on the save icon at the right ribbon. Otherwise, data will not be saved.

Material		Premises stg	
	Material ID: 2 🕞 🕤 🄎 🗸 🗎		Linkage of activity relationship
Second source	material meniadon (ngreateria)		
→ Premises ↔ Location ↔ Worker	Nano material region of the second se	Purity of material 🤅 yes C no	
Material used rate Sample information Import raw data	Version code Concentration	CAS	
	Molecular mass g / m Particle size nm Coating C Yes, Coating C No	DI BET Volume specific surface area Doping C Yes, Doping C No	V /m²
	Remarks Handled Material during the measurement process Material (11) example (2) example (3) example (4) example	1 1 2	
Quit			

Print screen 23. Input form 'Material' sub form 'Ingredients'. 1: R_____ n to scroll between different ingredients and some other options. 2: Overview of included materials and ingredients.

The table below (table 17) gives an overview of the fields that have to be filled in:

Field name	Explanation	Format
Nano material	Indicate if the ingredient is a	Yes / No option
	nano material. In case 'No' is	
	selected, some questions will	
	disappear as they are not	
	relevant in that case.	
Purity of material	Indicate if a pure or raw	Yes / No option
	ingredient is used or a material	
	containing different	
	ingredients.	
Product name	Give the common substance or	Open text field
	product name.	
Version code	Give the version code of the	Open text field
	product.	
CAS	Give the Chemical Abstracts	Format, only numbers
	Service (CAS)-number	
Concentration	Give the concentration of this	Open text field (numbers only)
	ingredient in the product	
Concentration	Indicate which unit is used to	Drop-down menu
	express the concentration:	
	-%mass	
	-%vol	
Molecular mass	Give the molecular mass of the	Open text field (numbers only)

Table 17. Fields and their explanations to be filled in for input sub form 'Ingredients'.

	product in g/mol.	
BET	Give the Brunauer-Emmett-	Open text field (numbers only)
	Teller(BET) surface area.	
BET	Indicate the unit in which the	Drop-down menu
	BET is expressed.	
Particle size	Give the initial particle size of	Open text field (numbers only)
	the ingredient.	
Volume specific surface area	Give the Volume specific	Open text field (numbers only)
	surface area.	
Coating	Indicate if the product is	Yes / No option
	coated.	
Doping	Indicate if the product is	Yes / No option
	doped.	
Remarks	Field to include additional	Open text field
	information regarding the used	
	ingredient.	

! Important. Please save your entered data for each individual material and ingredient by clicking on the save icon at the right ribbon. Otherwise, data will not be saved.

2.2.3.1 Material used rate

For each activity the used material and use rate should be described, see print screen 24. Already included activities are linked with already included materials. Subsequently, the amount and use rate should be filled in.

Material used rate	1	Premises none	🔚 🗙 K 📓 🔍
E Measurement series	Used Rate Set: 0 🔾 🔾		4 Linkage of activity relationship
Activity Second source	Activity	Create	new activity
⊖+ Premises	Choose material		
PAMM	Productname	Product ID	
Exposund PPE	Product form	Product type	
Material Meterial used rate	Nano material	Count of ingredients	
Sample information Import raw data			
	Enter Amount and Rate		
	Used as 💽 💽 Used amount	During choosen activity	2
•	Add to used material List	Apply changes to list X Delete used material in List	
	List of used material List of used material Product ID P	roduct form Product type Count of Used	
	material	ingredients amount	
			3
Quit	,		

Print screen 24. Input form 'Material used rate'. 1: Ribbon to scroll between different use rates. 2: Ribbon to add, delete and change information for the used materials. 3: Overview of included used materials. 4: Possibility to include additional activities.

The table below (table 18) gives an overview of the fields that have to be filled in:

Table 18. Fields and their explanations to be filled in for input form 'Material used rate'.

Field name	Explanation	Format
Activity	Indicate the activity the worker is performing. These activities are included in the input form 'Activity'. If an additional activity should be included then the user can use button 4 from print	Drop-down menu
Productname	Select the product used during the activity. The products presented in the list are the products included in the input form 'Material'.	Drop-down menu
Product ID	Automatically filled based on input form 'Material'	
Product form	Automatically filled based on input form 'Material'	
Product type	Automatically filled based on input form 'Material'	
Nano material	Automatically filled based on input form 'Material'	
Count of ingredients	Automatically filled based on input form 'Material'	
Used as	 Indicate if the amount of material that is used is the: -Input: Amount of material going into the system. -Output: Amount of material going out of the system. -Handled material: Amount of material actually used. 	Drop-down menu
Used amount	Give the amount of product that is used.	Open text field (numbers only)
During choosen activity	Give the unit of the used amount: -mg: milligram -g: gram -kg : kilogram -t: ton -ml: milliliter -l: liter -m ³ : cubic meter	Drop-down menu

! Important. Please save your entered data by clicking on the save icon at the right ribbon. Otherwise, data will not be saved.

2.2.4 Sample information

The forms 'Sample informaton', 'Sample link' and 'Analytical results' can be used to include data from off-line measurements to NECID. For each sample information about the measurement location, used instruments and measurement time should be included in the form 'Sample

information', see print screen 25. If more than one instrument should be included, then different forms should be completed.

	sample ID:	• • • • • •	Premises non	ie	Linkage of activity relationship
Allandy Concerned seature Concerned Weeker Concerned Weeker Concerned Weeker Concerned Weeker Concerned Concer	Measuring point Name Assignment Assignment Original sampling ID Sampling start Sampling start Sampling start Serial No device Date Collection media Sample or blank Description Sampling situation	hh/mn/ss Sampling stop Personal C State P 12 06 2014 P Field sample C Bulk sample ampling ID Measure Point	hh/mm/ss St Shift or Task Device code	ampling timehh/mm/ss	

Print screen 25. Input form 'Sample information'. 1: Ribbon to scroll between samples and some other options. 2: Overview of included samples.

The table below (table 19) gives an overview of the fields that have to be filled in:

Field name	Explanation	Format
Measuring point name	Give a name to the point where one	Open text field and drop-down
	or more measurements are	menu.
	performed of samples are collected	
Original sampling ID	Free text field to include the	Open text field
	original sampling ID	
Sampling start	Starting date (DD.MM.YYYY) and	Open text field (only numbers)
	time (HH.MM.SS) of the sampling	format (hh/mm/ss)
Sampling stop	Ending date (DD.MM.YYYY) and	Open text field (only numbers)
	time (HH.MM.SS) of the sampling	format (hh/mm/ss)
Sampling time	Total time of the sampling,	Automatically filled
	automatically filled (HH.MM.SS).	
Sampling specification	Indicate if the sampling is personal	Personal / Static option
	or static.	
Shift or Task	Indicate if the sampling is shift-	Task / Shift option
	based or task-based.	
Device ID	Click on the magnifying glass button	Drop-down menu
	and a list of devices is given, see	
	print screen 26. The devices are	
	also presented in a drop-down	
	menu. Select the device that is	
	used.	
Device ID	The ID of the device is presented	Automatically filled
	based on the selected device from	
	the list of the institute.	

Table 19. Fields and their explanations to be filled in for input form 'Sample information.

Serial No device	The serial number of the device is presented based on the selected	Automatically filled
	device from the list of the institute.	
Device code	The device code is presented based	Automatically filled
	on the selected device from the list	
	of the institute.	
Date	Give the date of the measurement.	Open text field (only numbers)
		format (hh/mm/ss)
Collection media	Click on the magnifying glass button	Drop-down menu
	and a list of collection media is	
	given, see print screen 27. The	
	collection media are also presented	
	in a drop-down menu. Select the	
	collection media that is used.	
Eg. Manufacturer,	Only asked for when relevant. Give	Open text field
Catalogue number, batch	the Manufacturer, Catalogue	
number	number and batch number.	
Collector Remarks	Field to include additional	Open text field
	information regarding the collector.	
Sample or blank	Indicate what type of sample is	Field sample / Bulk sample /
	collected:	Field blank / Labor blank option
	-Field sample	
	-Bulk sample	
	-Field blank	
	-Labor blank	
Sampling situation	Indicate if the sample is collected:	Drop-down menu
	-Random	
	-Representative	
	-Compliance	
Sampling situation	Field to include additional	Open text field
	information regarding the sampling	
	situation.	
Volume flow rate	Give the volume flow rate during	Open text field (numbers only)
	sampling	
Volume flow rate	Give the unit in which the volume	Drop-down menu
	flow rate is expressed:	
	-l/min	
	-m³/H	
Time interval	Give the logging time/sampling	Open text field (only numbers)
	interval of the device	format (hh/mm/ss)
Average interval	Give the device average logging	Open text field (only numbers)
	time	format (hh/mm/ss)
Preseperator used	Indicate if an impactor or	Yes / No option
	preseparator is used during	
	sampling.	
Preseperator used	Open text field to include additional	Open text field.
	information regarding the	
	preseparator used.	
Dilution used	Indicate if the sampled air is	Yes / No option
	diluted.	
Dilution ratio	Only asked for if for 'Dilution used'	Open text field

	the answer 'yes' is selected. Give	
	the dilution ratio	
Dilution ratio denominator	Only asked for if for 'Dilution used'	Open text field
	the answer 'yes' is selected. Give	
	the dilution ratio denominator	
Air velocity	Give the air velocity at the	Open text field (numbers only)
	measuring point	
Remarks	Open text field to include additional	Open text field
	information regarding the sampling	

! Important. Please save your entered data by clicking on the save icon at the right ribbon. Otherwise, data will not be saved.

Sterial No device Internal Name Device 10018 09-ESC2 / Model 3000 09-ESC2 TSI, Scarming Mobilty Partice Sizer Spectometer Model 3930AL 10018 09-ESC2 / Model 3000 No 2 TSI, Scarming Mobilty Partice Sizer Spectometer Model 3930AL 10018 09-ESC2 / Model 3000 No 3 APS Aerosol Partice Sizer 3321 10016 09/DSS TSI CPC 3022A 0907/032 TSI CPC 3022A 10017 9H03-004-1024-0301 310003007 Philips Aerasense NanoTracer 10019 31070115 / 3321 31070115 Matter, LQ1	. E					2
vice ID Serial No device Internal Name Device 10011 89-ESC2 / Model 3000 No 2 TSI, Scanning Mobility Particle Size Spectometer Model 3030NL 10018 89-ESC2 / Model 3000 No 2 TSI, Scanning Mobility Particle Size Spectometer Model 3030NL 10018 89-ESC2 / Model 3000 No 2 TSI, Scanning Mobility Particle Size Spectometer Model 3030NL 10018 89-ESC2 / Model 3000 No 3 APS Aerosol Particle Sizer 3321 10018 89-ESC2 / Model 3020 PSI Particle Sizer 3321 Sige Size Size Size Size Size Size Size Siz						-
Serial No device Internal Name Device 10013 95:95:02 TSI, Scanning Mobility Particle Sizer Spectrameter Model 39:030. 10014 95:95:27, Model 30:00 No 2 TSI, Scanning Mobility Particle Sizer Spectrameter Model 39:030. 10015 83:96:0497 33:1 No 3 APS Aerosol Particle Sizer 33:1 10016 83:96:0497 33:1 No 3 APS Aerosol Particle Sizer 33:1 10026 99:90:982 TSI CPC 30:22 59:97:682 TSI CPC 20:22 10015 83:96:040-10:24:03:0 3109:03:07 Philips Aerasene NanoTracer 10015 93:00:04:10:24:03:0 3109:03:07 Philips Aerasene NanoTracer 10019 31070115 / 33:21 31070115 Matter, LQ1						
10018 99+65C2 T01, Samman Mobility Particle Sizer Spectrometer Model 39:094. 10014 89+65C2 / Model 3080 No 2 TSI, Scamman Mobility Particle Sizer Spectrometer Model 39:094. 10018 89+66V47 / 3321 3960-497 Aerosol Particle Sizer 3231 10018 10018 89:96V47 / 3321 No 3 APS Aerosol Particle Sizer 3231 10018 10020 999:9852 TSI CPC 30:22A 10017 SH03:004-10:24-0340 31000306 10019 5H03:004-10:24-0340 31000306 Philips Aerasense NanoTracer 10019 10019 5H03:004-10:24-0330 31000307 Philips Aerasense NanoTracer 10019 10019 31070115 / 3321 31070115 Matter, LQ1 10019	Device ID Serial No dev	rice 1	Internal Name	Device		
10014 89-85C2 / Model 3080 No 2 TSI, Scaming Mobility Particle Sizer Spectrometer Model 3930NL 10015 8360497 / 3321 No 3 APS Aerosol Particle Sizer 3321 10016 8360497 / 3321 No 3 APS Aerosol Particle Sizer 3321 10016 8360497 / 3321 No 3 APS Aerosol Particle Sizer 3321 10026 99970582 TSI CPC 3022A TSI CPC 3022A 10017 910306 Philips Aerasense NanoTracer 10018 910304-1024-0330 31090307 Philips Aerasense NanoTracer 10019 31070115 / 3321 31070115 Metter, LQ1	10013 89-ESC2 / M		89-ESC2	TSI, Scanning Mobility Particle Sizer Spectormeter Model 3936NL		
10015 83960497 / 3321 83960497 Aerosol Partide Sizer 3321 10016 83960497 / 3321 N 3 APS Aerosol Partide Sizer 3321 10021 5970582 TSI CPC 3022A 50970582 TSI CPC 3022A 10017 5H03-004-1024-030 31990306 Philps Aerosense NanOTracer 10019 5H07-004-1024-030 31090307 Philps Aerosense NanOTracer 10019 31070115 / 3321 31070115 Matter, LQ1	10014 89-ESC2 / Mc	odel 3080 1	No 2	TSI, Scanning Mobility Particle Sizer Spectormeter Model 3936NL		
10016 63986497 / 3321 No 3 APS Aerosol Partide Sizer 3321 10020 59970582 TSI CPC 3022A 50970582 TSI CPC 3022A 10017 5403-004-10244034 31090306 Philps Aerasente Nan0Tracer 10018 5403-004-102440330 31090307 Philps Aerasente Nan0Tracer 10019 31070115 / 3321 31070115 Matter, LQ1	10015 83960497 / 3	3321 8	83960497	Aerosol Particle Sizer 3321		
10020 59970582 TSI CPC 3022a 59970582 TSI CPC 3022A 59970582 10017 5H03-004-1024-0300 31090306 Philips Aerasene NanOTracer 10018 SH03-004-1024-0330 31090307 Philips Aerasene NanOTracer 10019 31070115 / 3321 31070115 Matter, LQ1	10016 83960497 / 3	3321	No 3 APS	Aerosol Particle Sizer 3321		
10017 SH03-004-1024-0340 31090306 Philips Aerasense NamoTracer 10018 SH03-004-1024-0330 31090307 Philips Aerasense NamoTracer 10019 31070115 / 3321 31070115 Matter, LQ1	10020 50970582 TS	SI CPC 3022a	50970582	TSI CPC 3022A		
10018 SH03-004-1024-0320 31090307 Philps Aerasense NamoTracer 10019 31070115 / 3321 31070115 Matter, LQ1	10017 SH03-004-10	024-0340	31090306	Philips Aerasense NanoTracer		
10019 31070115 / 3321 31070115 Matter, LQ1	10018 SH03-004-10	024-0330	31090307	Philips Aerasense NanoTracer		
suche rzeige Kompletttext 04.44.44 05.55.55	10019 31070115 /	3321	31070115	Matter, LQ1		
tauche zzeige Kompletttext 04.44.405.55.55						
tsuche Izeige Kompletttext 04:44:4005:55:55						
suche zzeige Kompletttext 04:44:405:55:55						
tsuche Izeige Kompletttext 04:44:405:55:55						
tsuche rzeige Kompletttext 04:44:44 05:55:55						
tsuche Izzeige Kompletttext 04:44:44 05:55:55						
tsuche nzeige Kompletttext 04:44:44 05:55:55						
tsuche nzeige Kompletttext 04:44:44 05:55:55						
tsuche nzeige Kompletttext 04.44.44 05.55.55						
nzeige Kompletttext						
nzeige Kompletttext 04:44:44 05:55:55						
nzeige Kompletttext 04:44:44 05:55:55						
nzeige Kompletttext						
Isuche Izeige Kompletttext 04-44-44 05-55-55						
nzeige Kompletttext 04:44:44 05:55:55						
nzeige Kompletttext						
Isuche Inzeige Kompletttext 04:44:44 05:55:55						
tsuche nzeige Kompletttext 04:44:44 05:55:55						
suche						
04:44:44 05:55:55	Taytaucha					
D2496 Kompletttext	Textadore					
04:44:44 05:55:55	Anzeige Kompletttext					
04:44:44 05:55:55						
					04:44:44 05:55:55	1

Print screen 26. By clicking on the magnifier behind 'Device ID' you open a list of devices used in your institute.



Print screen 27. By clicking on the magnifier behind 'Collection media' you open a list of collection media.

2.2.4.1 Sample link

For each sample information about the function of the measurement and the distance of the sampling point to source, worker and ventilation should be included in the form 'Sample link', see print screen 28.

Program Extra							
Sample link				Premise	snone	1	🖩 🗙 🗠 📓 🛛
Measurement series	ausia	1 🌷	Sample link	1 😋 🗿 🗋 .	 Z 		Linkage of activity relationship
Second source	Activity				•	Create new activity	
	Sampling start Activity start	04.44.44 hh/mm/ss	Sampling stop Activity stop	05.55.55 hh/mm/ss			
Exposiant PPC	Information of distance	es					
Material used rate Sample information	Measuring point ID	sdfadf					
Sample link Analytical results	Function of measure to activity		٠				
Import raw data	Distance source to measurement device		٠				
	Distance worker to measurement device		٠				
	Distance ventilation to measurement device		٠				
	<u>Near / far field</u>	C Near field C Fa	field				
						1	
	List of Sample				2		
	Index County Original same	bling ID Function of measure activity	ure to Near / far field	Sampling start Sa	mpany		
Quit							

Print screen 28. Input form 'Sample link'. 1: Ribbon to scroll between samples and some other options. 2: Overview of included samples.

The table below (table 20) gives an overview of the fields that have to be filled in in input form 'Sampling link':

Field name	Explanation	Format
Sample information	Select one of the included samples	Drop-down option in ribbon. See print screen 28 number 1.
Activity	Select the activity for which the sample is collected.	Drop-down option
Sampling start	Automatically the start time of the sampling is given based on included information about the sampling.	Automatically filled
Sampling stop	Automatically the stop time of the sampling is given based on included information about the sampling.	Automatically filled
Activity start	Automatically the start time of the activity is given based on included information about the activity.	Automatically filled
Activity stop	Automatically the start time of the sampling is given based on included information about the activity.	Automatically filled
Measuring point ID	Automatically filled based on the ID included in the Sample information.	Automatically filled
Function of measure to activity	Indicate the function of the sampling in connection to the activity. Select the type of air that is measured: -Main -Incoming air -Background -Second source	Drop-down menu
Distance source to measurement device	Indicate the distance from the measurement device (end of tube) to the source. Distance in meters.	Drop-down menu
Distance worker to measurement device	Indicate the distance from the measurement device (end of tube) to the worker. Distance in meters.	Drop-down menu
Distance ventilation to measurement device	Indicate the distance from the measurement device (end of tube) to the ventilation. Distance in meters.	Drop-down menu
Near / far field	Indicate if the measurement is performed in the near field or the far field.	Near field / Far field option

					-				
Tahle 20	Fields and	their eyn	lanations t	n he	filled in	for in	nut form	ʻSamnle	link'
10010 20.	ricius unu	псп слр	iuniutions t		mea m	101 111	pution	Jumpic	

! Important. Please save your entered data by clicking on the save icon at the right ribbon. Otherwise, data will not be saved.

2.2.4.2 Analytical results

Subsequently, to each sample the results from the analysis can be linked, see print screen 29 and 30.



Print screen 29. Input form 'Analytical results'. 1: Ribbon to scroll between samples. 2: Button to include measurement results. 3: Icon to upload measurement data.

First the user should select a 'Sample information' under button 1. Subsequently the user should click on 'Add VDE'. The input form below (print screen 30) will be presented. Select all relevant information regarding analyzed elements, chemical compounds, dust fraction, fibers, particles and type of analyse technique in the input form. Subsequently, this information is automatically presented in the input form 'Analytical results', see print screen 31. Table 21 will give the information an user should include in input form 'Analytical results'.

reginon 📥 Add VDE					
Value descriptio	n				
	14 19 🔎 🏓	^			🗸 🗴
n Titel	Silicium oxide		*	Analyse tech description	nichnique for all selected value
Help-Info			<u>^</u>	Search by shor	t title
	, 				*
Elements					·
⊞ Single elen	nents			Short title	Titel
Chemical com	ponds			ICP-MS	Inductively coupled plasma mass spectrometr
	componds			GC-MS	Gas chromatography-mass spectrometry (GC
Al compon	ds			RAMAN	Raman spectroscopy
Si compon	ds			LIBS	Laser-induced breakdown spectroscopy
	2] Silicium oxide			TEM	Transmission electron microscopy (TEM)
I Ti compone	ds			STEM	Scanning transmission electron microscope (ST
⊞ F Fe com	ponds			SEM	Scanning electron microscope (SEM)
E Zinc composition	onds			REM	Reflection electron microscope (REM)
	Other componds			GA	Gravimetric analysis
Dust fraction				TGA	Thermogravimetric analysis
- Total du	st			EDX	Energy-dispersive X-ray spectroscopy (EDS, E
Respiral	ble dust			EELS	Electron energy loss spectroscopy (EELS)
E Fibers				WDS	Wavelength-dispersive X-ray spectroscopy (V
😟 WHO - fibe	rs			XMCD	X-ray magnetic circular dichroism (XMCD)
. Tubes				_	
□ Particle					
Primary pa	rticles				
⊕ Agglomera	te				
Composite					
Other					

Print screen 30. Overview of elements, chemical compounds, dust fraction, fibers, particles and type of analyse technique of which a selection could be made.

Program Extra				
Analytical results		1	Premises none	🖥 🗙 🗠 📓 🛛
Beasurement series	Sample Information	. 1		Linkage of activity relationship
Second source	÷		+ Add VDE	
Cocation Cocat	1 [Al] Aluminium	 Nano compound proven, quantitative result mg / m³ 	C Nano comound not proven, qualitative us	3
Expos.and PPE Material	Detection limit	mg/m ³	Labor	
Material used rate	Analyst technichnique 🔎 REM	Reflection electron microscope (REM)	
Sample Ink	Remarke	• •		
Analytical results Import raw data				
	4			
Quit	Results			
]

Print screen 31. Input form 'Sample link'. 1: Ribbon to scroll between samples. 2: Button to include measurement results. 3: Input fields for measurement data. 4: Icon to upload measurement data.

The table below (table 21) gives an overview of the fields that have to be filled in.

Field name	Explanation	Format
Add VDE	Open VDE and select all relevant	Pick list
	information regarding analyzed	
	elements, chemical compounds, dust	
	fraction, fibers, particles and type of	
	analyse technique in the input form	

Table 21. Fields and their explanations to be filled in for input form 'Analytical results'.

	(see print screen 30).	
Nano compound proven,	Indicate if the results are quantitative or	Two answer option
quantitative result / Nano	qualitative.	
compound not proven,		
qualitative result		
Value	Only asked for if for 'Nano compound	Open text field (numbers
	proven, quantitative result' is selected.	only)
	Give the measured concentration.	
value	Only asked for if for 'Nano compound	Drop-down menu
	proven, quantitative result' is selected.	
	Select the unit in which the	
	concentration is expressed:	
	-mg/m ³	
	$-\mu g/m^3$	
	-ng/m ³	
	$-g/m^3$	
	-%	
SD	Only asked for if for 'Nano compound	Open text field (numbers
	proven, quantitative result' is selected.	only)
	Give the Standard deviation.	
Detection limit	Only asked for if for 'Nano compound	Open text field (numbers
	proven, quantitative result' is selected.	only)
	Give the detection limit of the analytical	
	, technique.	
Detection limit	Only asked for if for 'Nano compound	Drop-down menu
	proven, quantitative result' is selected.	
	Select the unit of the detection limit:	
	-mg/m ³	
	$-\mu g/m^3$	
	-ng/m ³	
	-g/m ³	
	-%	
Labor	Only asked for if for 'Nano compound	
	proven, quantitative result' is selected.	
Existence of likelihood	Only asked for if for 'Nano compound	5-answer option
	not proven, gualitative result' is	'
	selected. Indicate the likelihood of	
	exposure to nano material:	
	-Very likely	
	-Likely	
	-Doubtful	
	-Unlikely	
	-No indication	
Qualitative value	Only asked for if for 'Nano compound	Open text field (numbers
	not proven, qualitative result' is	only)
	selected. Give a qualitative value.	
Qualitative value	Only asked for if for 'Nano compound	Drop-down menu
	not proven, qualitative result' is	
	selected. Select the unit of the	
	gualitative value:	
	· mg/m ³	

	-μg/m ³ -ng/m ³ -g/m ³ -%	
Analyse technique	Click on the magnifying glass button and analytical techniques is presented, see print screen 32. Select the analytical technique that is used.	Pick list
Remarks	Open text field to include additional information regarding the performed analysis.	Open text field
Results	Possibility to link raw data to a sample by uploading the raw data	Not applicable

! Important. Please save your entered data by clicking on the save icon at the right ribbon. Otherwise, data will not be saved.



Print screen 32. Overview of analytical techniques. Use this screen to select the used technique.

2.2.5 Import raw data

Finally, raw data can be uploaded for the used online measurement instruments, see print screen 33. Print screen 33 gives an example of how the input form looks like in case in sample information the use of a SMPS and APS is indicated. It is possible to upload data or delete data and to set values for the raw data file.



Print screen 33. Example of input form 'Import raw data' in case in sample information the use of a SMPS and APS is indicated. 1. Possibility to upload data or delete data. 2. Button to set the values for the raw dataset.

3 Protocol (PDF)

Function to make a PDF file of the selected measurement studies.

4 Timeline

5 Data Exchange

Function to import and export data included in NECID.

6 Export (Excel)

Function to export the included data in NECID to Excel

7 Basic data Update

Function to perform an update of the basic data table.

8 Overview of print screens

Print screen 1. Login screen for NECID.

Print screen 2. Welcome page NECID. 1. Button to change the user profile. 2. Documents and files to install NECID on your computer.

Print screen 3. Input form 'User profile'. 1 Overview of user profile and possibility to change the user profile. 2. The possibility to change the question in case you have forgotten your password . 3. Possibility to get a new password.

Print screen 4. Subform 'Change question'.

Print screen 5. Sub form 'New Password'.

Print screen 6. Overview of NECID after login.

Print screen 7. 1: Sitemap, 2: Fill in form, 3: List of entered measurement series, 4: Linkage of activity relationships, 5: Ribbon.

Print screen 8. Input form 'Measurement'. 1: Ribbon to include new forms, delete forms or save information.

Print screen 9. Input form 'Activity'. 1: Ribbon to scroll between different activities and some other options. 2: Overview of included activities. 3: Ribbon to include new forms, delete forms or save information.

Print screen 10. By clicking on the magnifier behind 'Activity code' in print screen 9 you open a coding list for the different source domains. By clicking on the '+' icon you will come to the more specific activity classes. Please be as specific as possible. After selecting an activity the input fields will be automatically filled.

Print screen 11. Input form 'Second source'. 1; Ribbon to scroll between different secondary sources and some other options. 2: Overview of included secondary sources. 3 Ribbon to include new forms, delete forms or save information.

Print screen 12. Input form 'Premises'. 1, Overview of included premises. 2; Ribbon to include new forms, delete forms or save information.

Print screen 13. By clicking on the magnifier behind 'Branche code' in print screen 12 you open a coding list of the Industrial Classification system NACE industries. At the beginning you see the several industry divisions. By clicking on the plus icon you will come to the major group, the industry group and at least to the specific industry. Please be as specific as possible. The NACE – Code is the EU classification of economic activities: http://europa.eu.int/eur-lex/IOHtml.do?uri=OJ:L:2006:393:SOM:EN:HTML

Print screen 14. Input form 'Locations'. 1; Ribbon to scroll between different locations and some other options. 2: Overview of included locations. 3 Ribbon to include new forms, delete forms or save information.

Print screen 15. Input form 'RMM'. 1; Ribbon to scroll between different locations. 2: Ribbon to scroll between different RMMs and some other options. 3 Ribbon to include new forms, delete forms or save information. 4: Possibility to include additional activities. 5: Sub forms 'Ventilation', 'Local control' and 'Indoor condition'. 6: Overview of included RMM

Print screen 16. Sub form RMM – Ventilation. 1: List of RMM.

Print screen 17. Sub form RMM – Local control. 1: Buttons to add or delete a local control. 2: Overview of saved local controls 3: List of RMM.

Print screen 18. Sub form RMM – Indoor conditions. 1: List of RMM.

Print screen 19. Input form 'worker'. 1: Ribbon to scroll between different workers and some other options. 2: List of workers.

Print screen 20. By clicking on the magnifier behind 'ISCO Job code' in print screen 19 you open a coding list form SVZ-ISCO. At the beginning you see major divisions. By clicking on the plus icons you will come to more detailed descriptions. Please be as specific as possible.

Print screen 21. Input form 'Expos and PPE'. 1: Ribbon to scroll between different workers and the activities for each worker and some other options. 2: List of workers and the use of PPE for each activity. 3: Possibility to include additional activities.

Print screen 22. Input form 'Material'. 1: Ribbon to scroll between different materials and some other options. 2: Button to include ingredients, linked to the selected material. 3: Overview of included materials and ingredients.

Print screen 23. Input form 'Material' sub form 'Ingredients'. 1: Ribbon to scroll between different ingredients and some other options. 2: Overview of included materials and ingredients.

Print screen 24. Input form 'Material used rate'. 1: Ribbon to scroll between different use rates. 2: Ribbon to add, delete and change information for the used materials. 3: Overview of included used materials. 4: Possibility to include additional activities.

Print screen 25. Input form 'Sample information'. 1: Ribbon to scroll between samples and some other options. 2: Overview of included samples.

Print screen 26. By clicking on the magnifier behind 'Device ID' you open a list of devices used in your institute.

Print screen 27. By clicking on the magnifier behind 'Collection media' you open a list of collection media.

Print screen 28. Input form 'Sample link'. 1: Ribbon to scroll between samples and some other options. 2: Overview of included samples.

Print screen 29. Input form 'Analytical results'. 1: Ribbon to scroll between samples. 2: Button to include measurement results. 3: Icon to upload measurement data.

Print screen 30. Overview of elements, chemical compounds, dust fraction, fibers, particles and type of analyse technique of which a selection could be made.

Print screen 31. Input form 'Sample link'. 1: Ribbon to scroll between samples. 2: Button to include measurement results. 3: Input fields for measurement data. 4: Icon to upload measurement data.

Print screen 32. Overview of analytical techniques. Use this screen to select the used technique.

Print screen 33. Example of input form 'Import raw data' in case in sample information the use of a SMPS and APS is indicated. 1. Possibility to upload data or delete data. 2. Button to set the values for the raw dataset.

9 Overview of tables

Table 1. Fields and their explanations to be filled in for 'User profile'. Table 2. Fields and their explanations to be filled in for 'Change question answer'. Table 3. Fields and their explanations to be filled in for 'New password'. Table 4. Description of the different icons and their function in NECID. Table 5. Fields and their explanations to be filled in for 'Measurement series'. Table 6. Fields and their explanations to be filled in for 'Activity'. Table 7. Fields and their explanations to be filled in for 'Second source'. Table 8. Fields and their explanations to be filled in for 'Premises'. Table 9. Fields and their explanations to be filled in for 'Locations'. Table 10. Fields and their explanations to be filled in for 'RMM'. Table 11. Fields and their explanations to be filled in for RMM – sub form 'Ventilation'. Table 12. Fields and their explanations to be filled in for RMM – sub form 'Local control'. Table 13. Fields and their explanations to be filled in for RMM – sub form 'Indoor conditions'. Table 14. Fields and their explanations to be filled in for 'Worker'. Table 15. Fields and their explanations to be filled in for input form 'Expos and PPE'. Table 16. Fields and their explanations to be filled in for input form 'Material'. Table 17. Fields and their explanations to be filled in for input sub form 'Ingredients'. Table 18. Fields and their explanations to be filled in for input form 'Material used rate'. Table 19. Fields and their explanations to be filled in for input form 'Sample information. Table 20. Fields and their explanations to be filled in for input form 'Sample link'. Table 21. Fields and their explanations to be filled in for input form 'Analytical results'.