



FACET Packaging Training Manual

“Instructions and Exercises for FACET software”

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1 Document Metadata

Document Title : FACET Packaging Training Manual
Instructions and Exercises for FACET Software

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Date : 05 December 2013

Version Number : 1.0

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2 Objectives

2.1 Introduction

This manual sets out to provide detailed instructions to explain the functioning of the Flavourings, Additives, and food Contact materials, Exposure Task (FACET) software. This software was the end result of the 7th Framework EU funded FACET project which involved the creation of a food chemical exposure surveillance system, which covers representative regions of the EU, to meet the needs of the EU regulatory authorities in the protection of consumer health.

The manual provides step by step instructions, using screenshots from the software, for each of the assessment types available in FACET. The manual also serves to highlight the capabilities of FACET

2.2 Outline Structure of this Manual

Each subsection of Section 3 considers a particular Assessment Type and provides instructions, aided by screenshots from the software, to complete the assessment. Also, each subsection finishes with exercises appropriate to the content of that subsection.

3 Programme Details

This section provides instructions, using screenshots from the FACET software, to aid the user in the execution of the various assessment types available in FACET.

3.1 Running a Basic Packaging Assessment

To run a basic packaging assessment requires the user to initially select the “Create New Assessment” option. This is described in Figure 3-1 below.

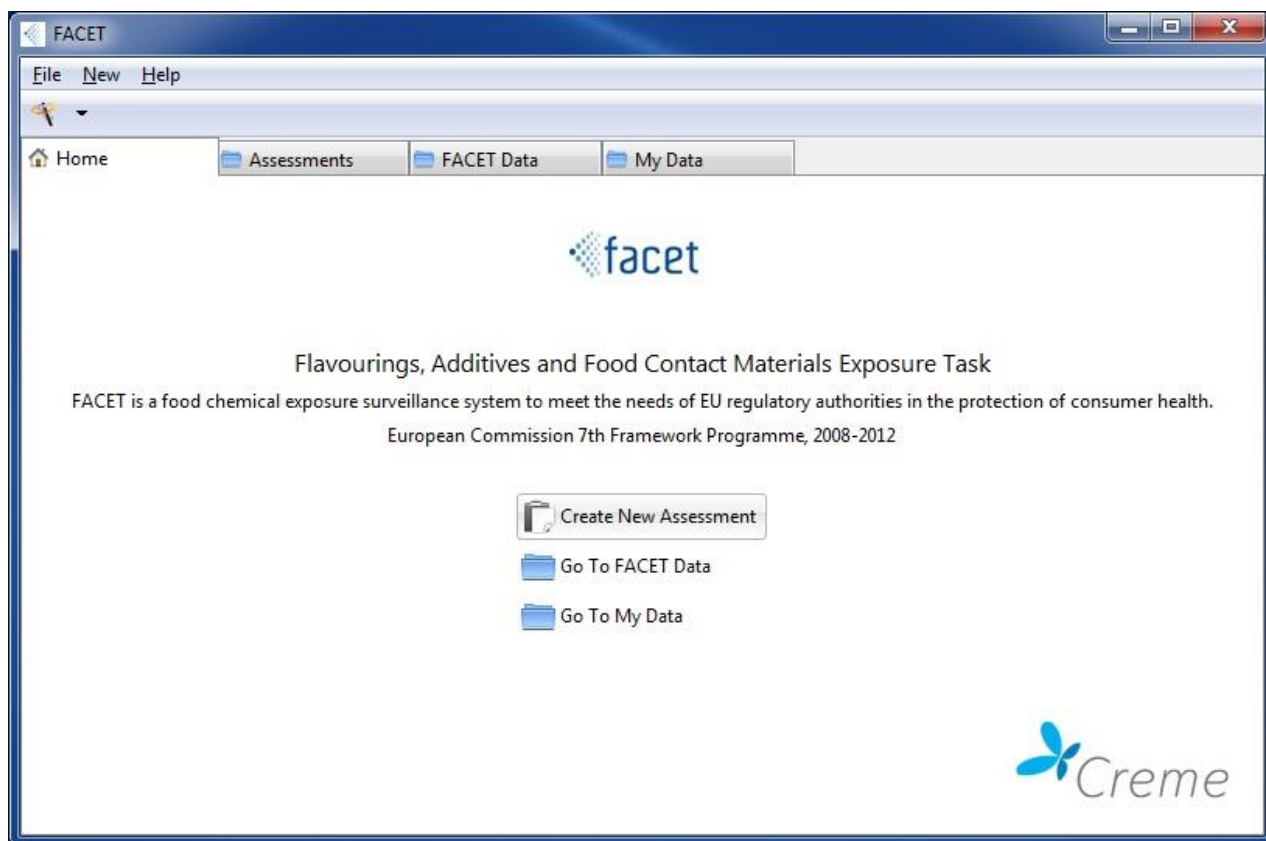


Figure 3-1: Create New Assessment

The user now has the option to select the particular assessment type they are interested in. In our case, we would like to run a Packaging Assessment and for this reason, we select the “Packaging Assessment” option, as shown in Figure 3-2 below.

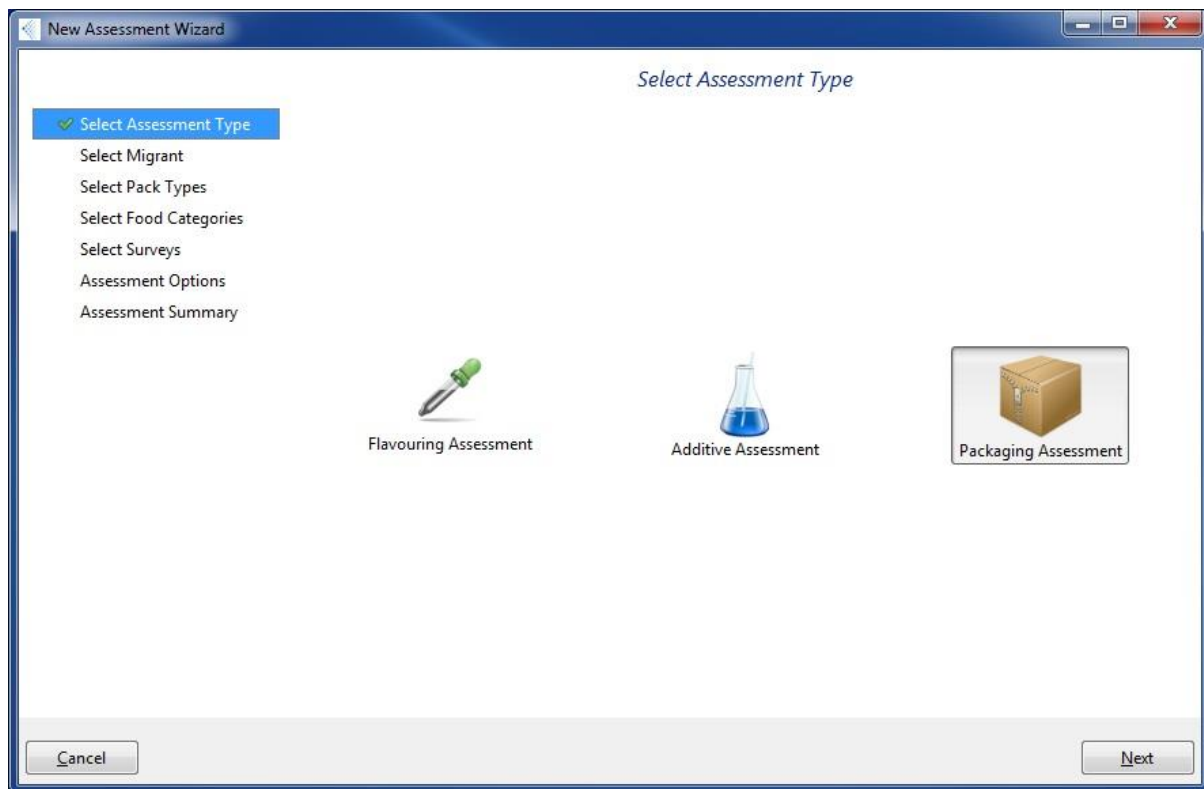


Figure 3-2: Selection of Assessment Type

Once the user selects the “Packaging Assessment” type, and clicked the “Next” button”, the next step requires them to select a migrant/substance the user would like to calculate an exposure to from different foods and pack types.

There are two options at this stage – the first option allows the user to avail of pre-installed concentration data for the substance while the second option allows the user to enter their own concentration data. For this run, we choose the “Use pre-installed FACET data” option and then select the substance BPA (FACET ID = 1084) as shown in Figure 3-3.

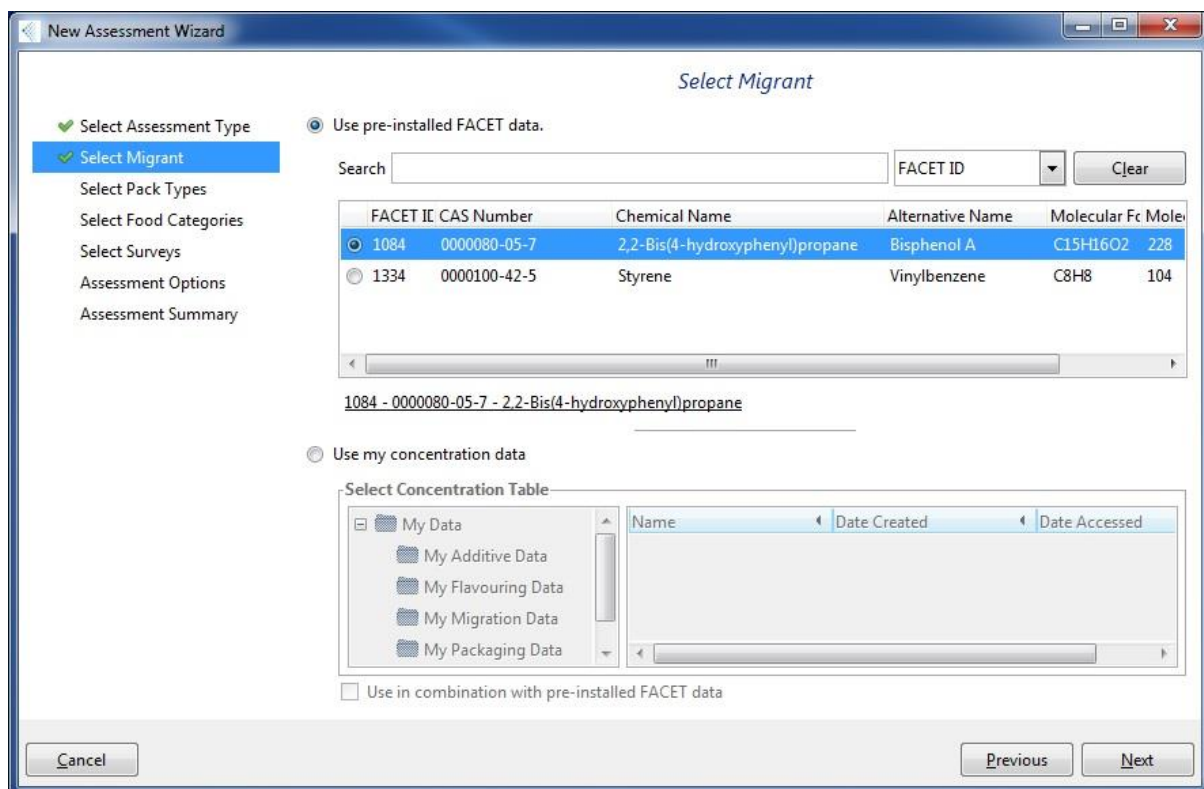


Figure 3-3: Selection of Substance

Once the substance is selected, and the “Next” button” is clicked, the user selects the “Pack Types” of interest. This step is described in Figure 3-4.

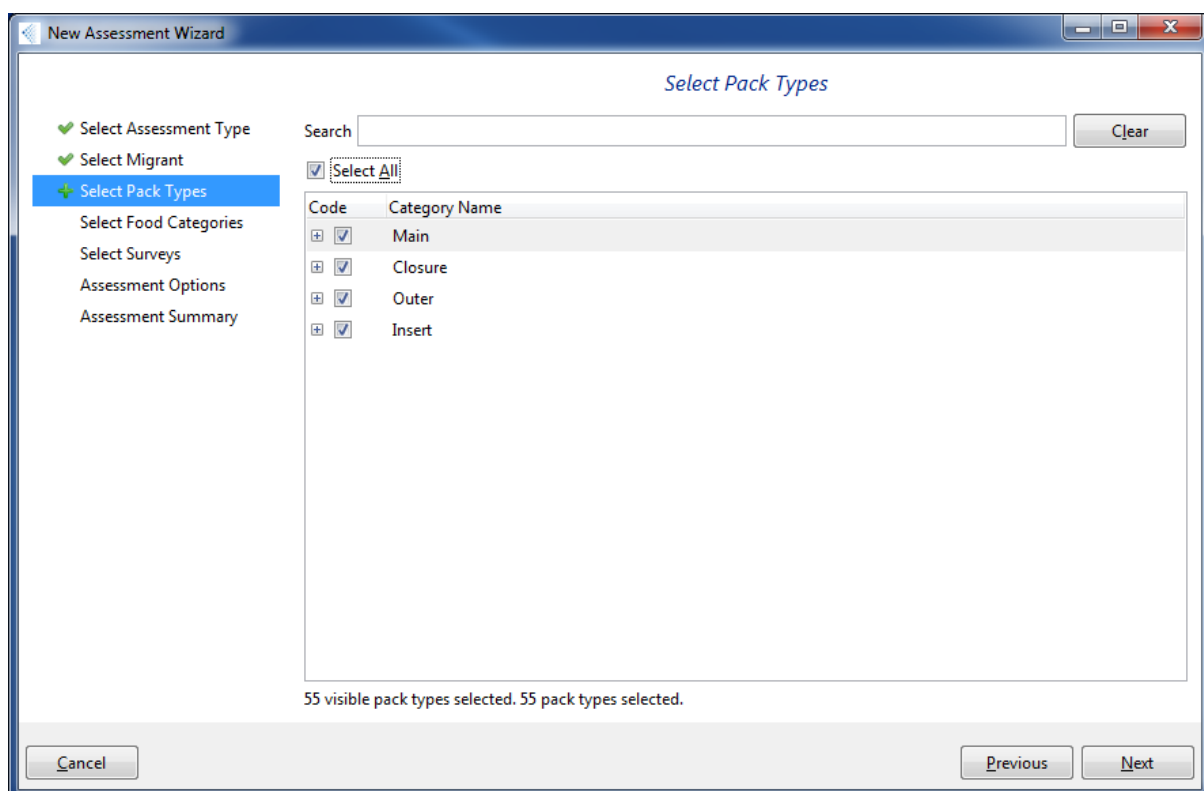


Figure 3-4: Selection of Pack Types

As well as the selection of pack types, the user also has the option to choose particular foods for the exposure assessment. This is illustrated in Figure 3-5. As with the previous steps it is required to click the “Next” button to advance to the next step.

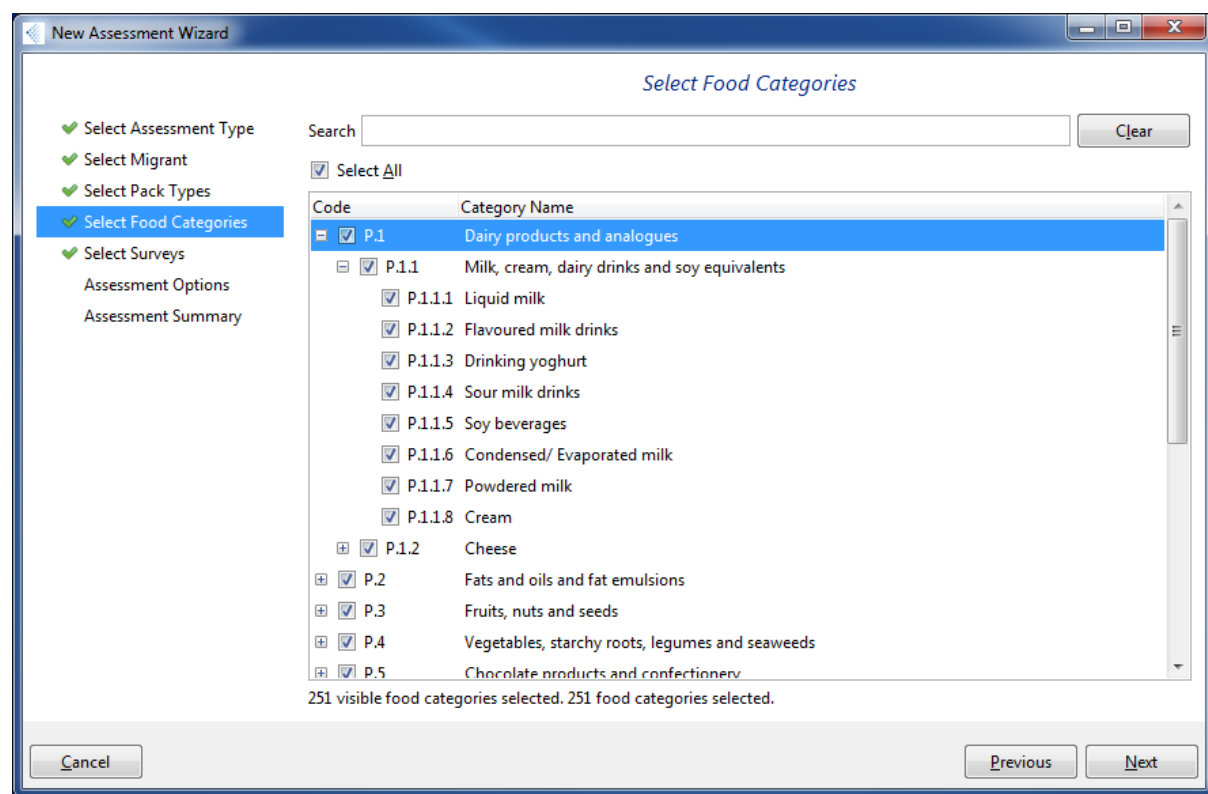


Figure 3-5: Selection of Foods

There are fifteen consumer surveys available to use in FACET. By selecting a particular survey, the software returns the exposure to the chosen substance for the population represented in the survey. In this case we select the “UK NDNS 2000 19-64” survey, as shown in Figure 3-6. This survey concentrates on people in the age group 19-64 in the UK.

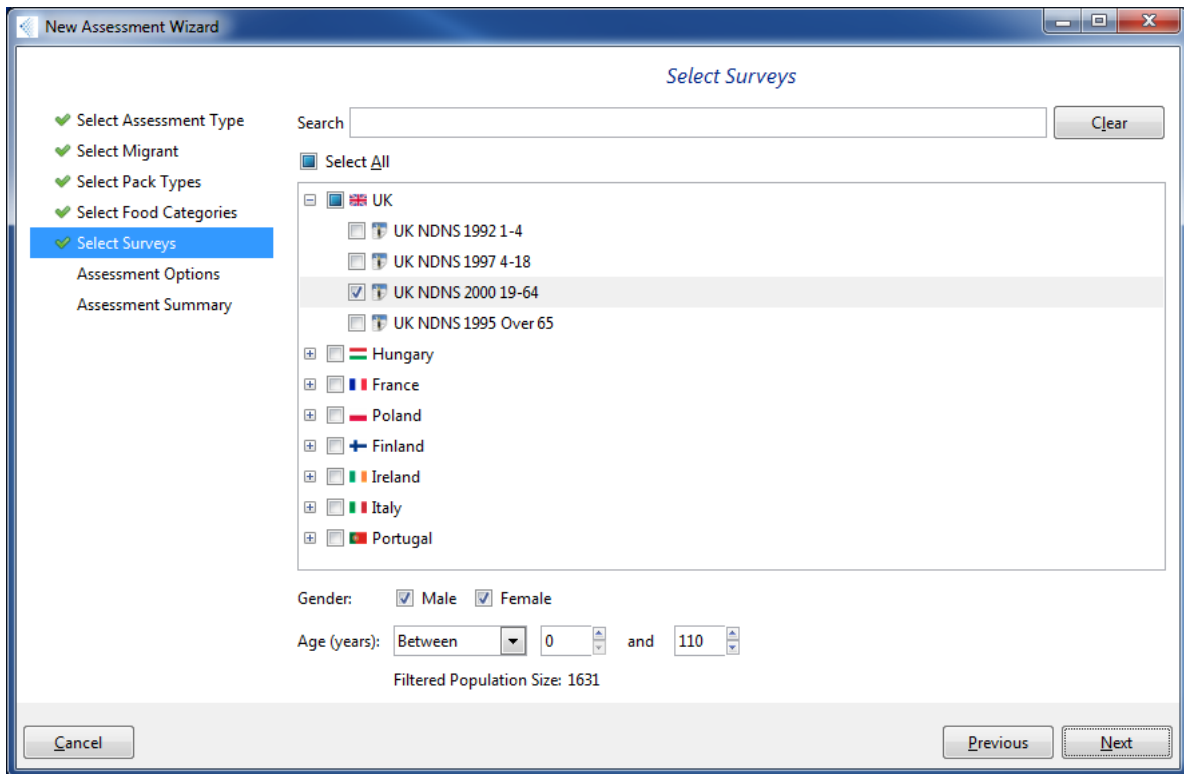


Figure 3-6: Selection of Survey

After the user has clicked “Next”, the user is now presented with various “Assessment Options”, as illustrated in Figure 3-7. These include the option to name the assessment, whether to assess using “consumer loyalty”, and the option to exclude homegrown or restaurant foods. These options are explained as part of this example.

There are other options to “Use SetOff” and more advanced options. These are described and used at a later stage in the training.

Figure 3-7: Selecting Options

One of the options mentioned above is giving a name to the assessment. When the user has completed many assessments, it is useful to have an assessment name that highlights the important information encoded in the assessment. To name an assessment requires the user to click the “Choose” button shown in Figure 3-7. This opens a window, as shown in Figure 3-8, where the user enters the appropriate assessment name and then clicks “Save”. In this instance, name the assessment “Substance: 1084 – Survey: UK_19-64”

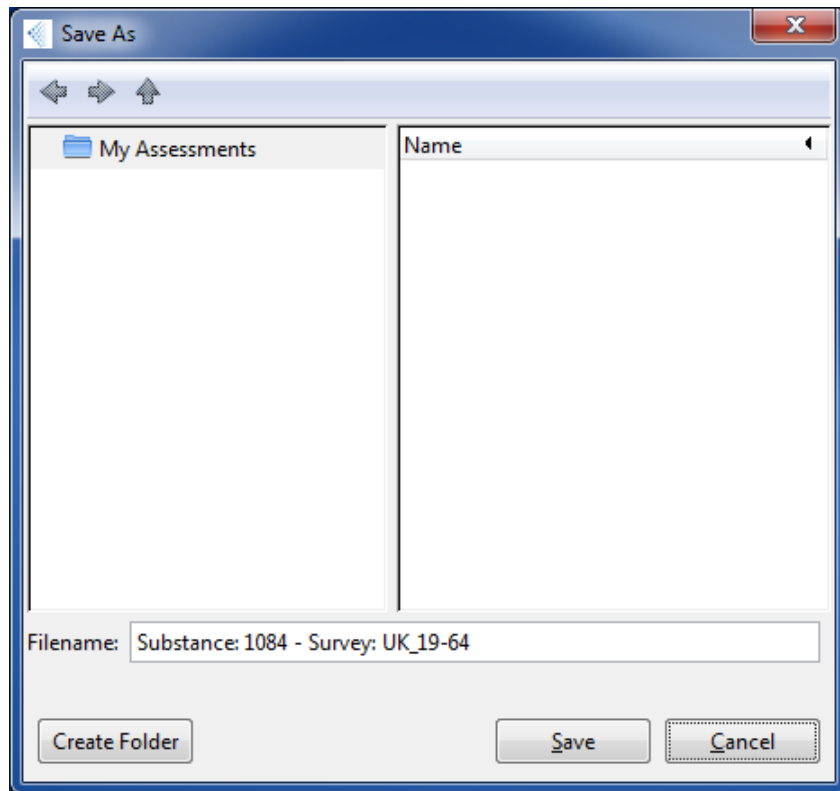


Figure 3-8: Naming the Assessment

Once a name has been given to the assessment, the name is shown in the “Assessment Options” window, as illustrated in Figure 3-9. Also, select “Without consumer loyalty” and tick the “Exclude homegrown/homemade foods” and “Exclude restaurant/ canteen foods” boxes. Again, the user needs to click the “Next” button.

New Assessment Wizard

Assessment Options

- ✓ Select Assessment Type
- ✓ Select Migrant
- ✓ Select Pack Types
- ✓ Select Food Categories
- ✓ Select Surveys
- ✓ Assessment Options**
- Assessment Summary

Assessment location: /Assessments/My Assessments/Substance: 1084 - Survey: UK_19-64 Choose

Description:

Assess using:

☐ With consumer loyalty

☒ Without consumer loyalty

☐ Use SetOff

Exclude homegrown/homemade foods: ☒

Exclude restaurant/canteen foods: ☒

[Advanced Options](#)

Cancel Previous Next

Figure 3-9: Checking Assessment Name

At this stage an “Assessment Summary” is provided. This is shown in Figure 3-10. If the user is happy with the details of the summary, the “Run” button is selected. This produces a window telling the user, as shown in Figure 3-11, that the assessment has been submitted. Click “OK”.

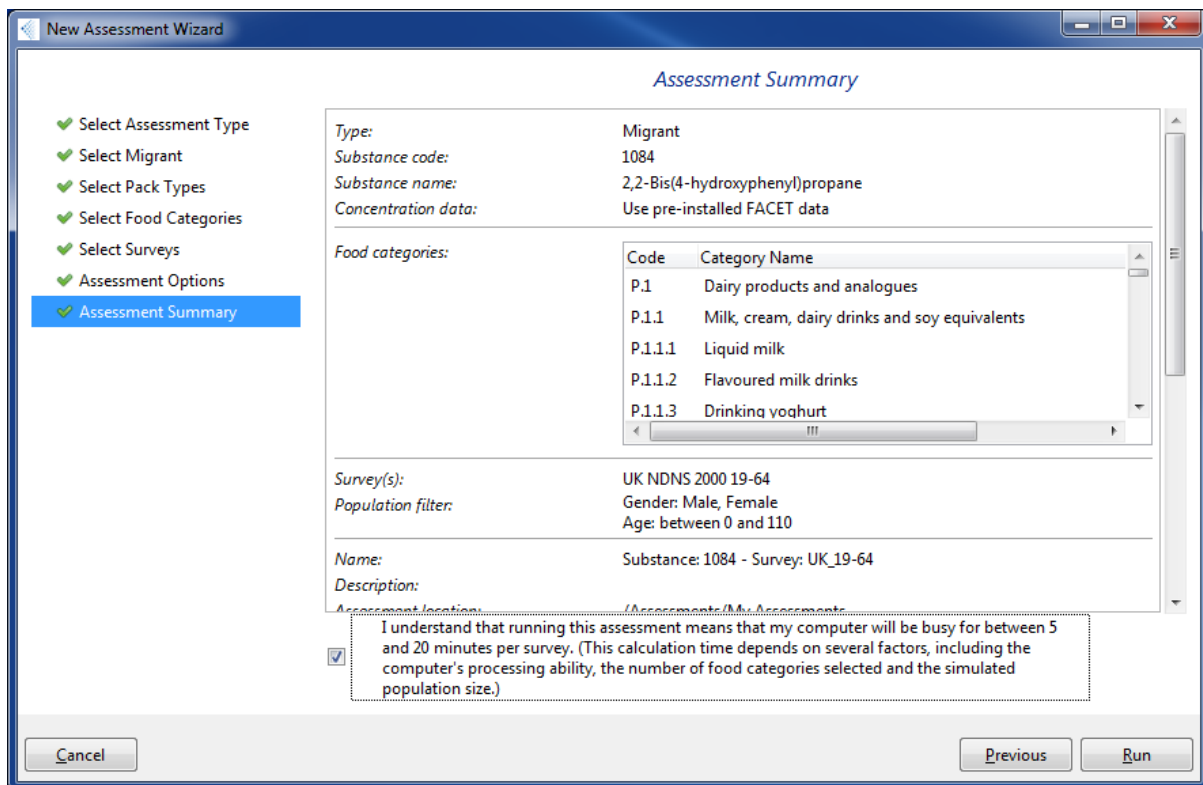


Figure 3-10: Summary of Assessment Before Run

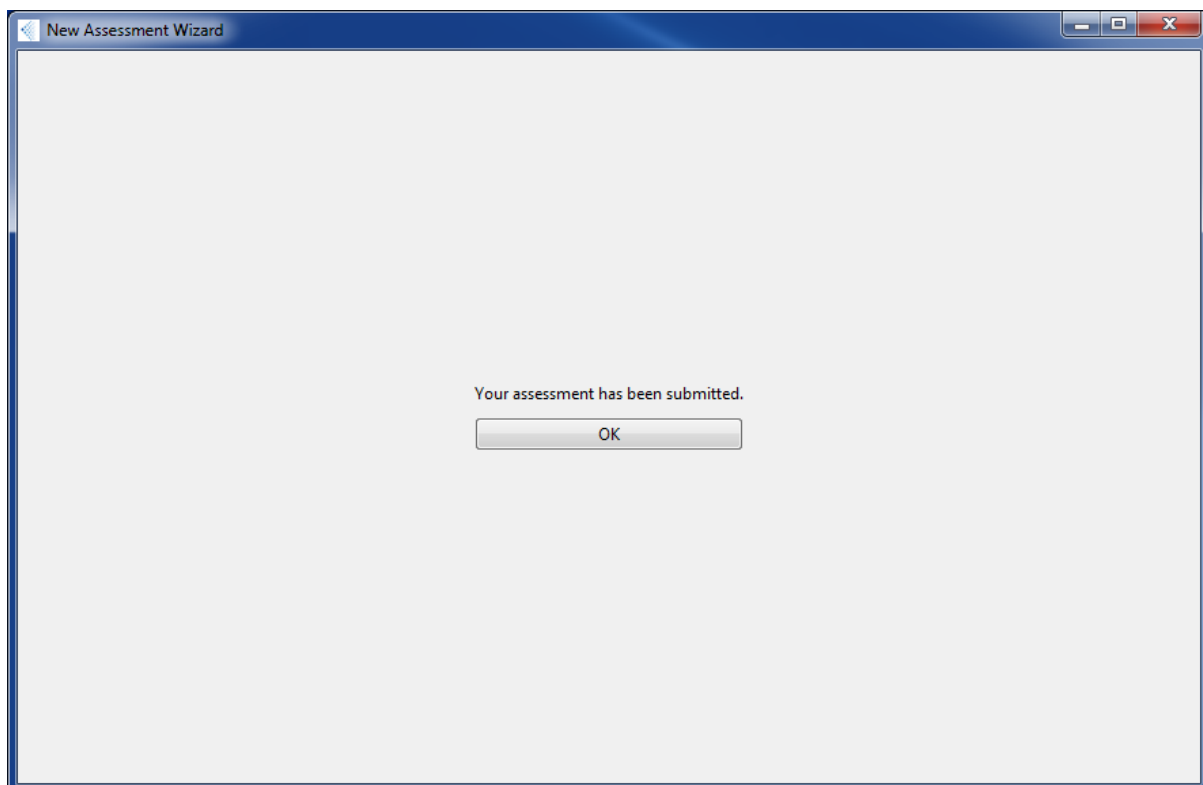


Figure 3-11: Assessment Submitted

The user should at this stage select “Assessments” and then “My Assessments” as is shown in Figure 3-12. Once the “Initialising” stage has finished, the assessment moves into the “Progress” stage. A progress bar is illustrated to inform the user of the percentage completion of the assessment. This is illustrated in Figure 3-13.

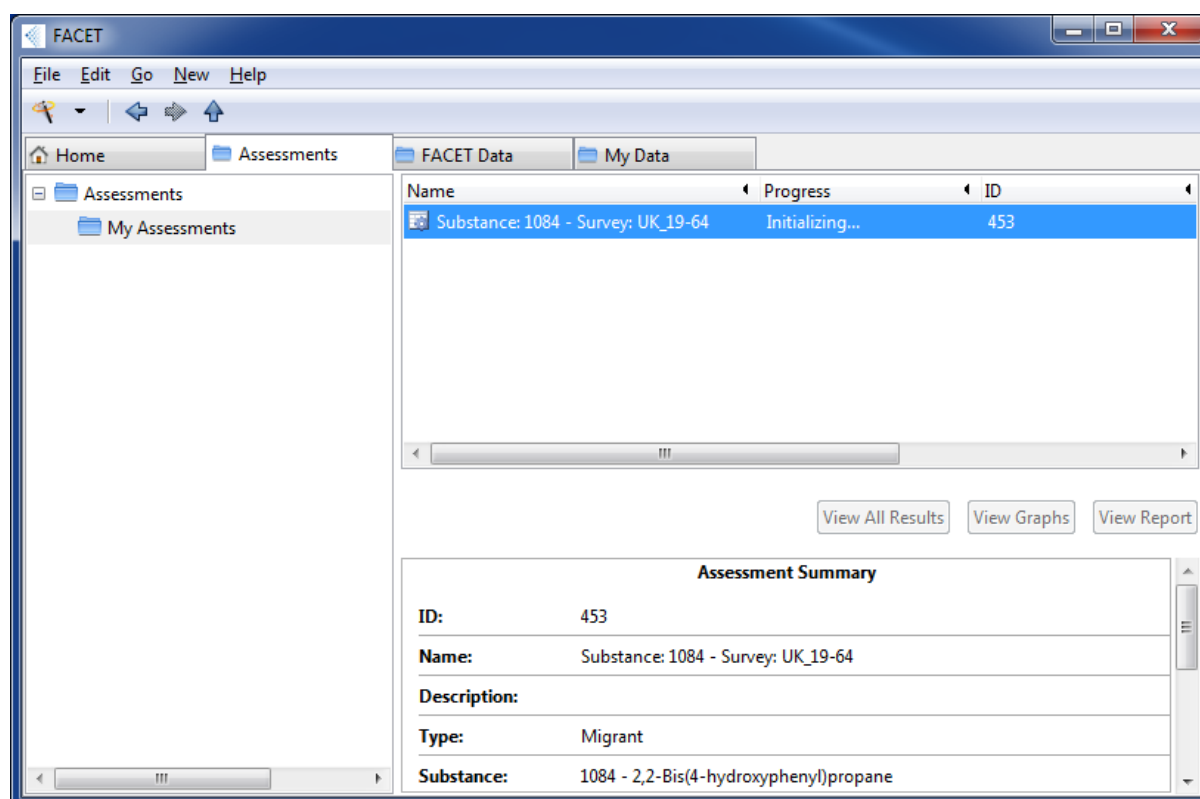


Figure 3-12: Assessment Initialising

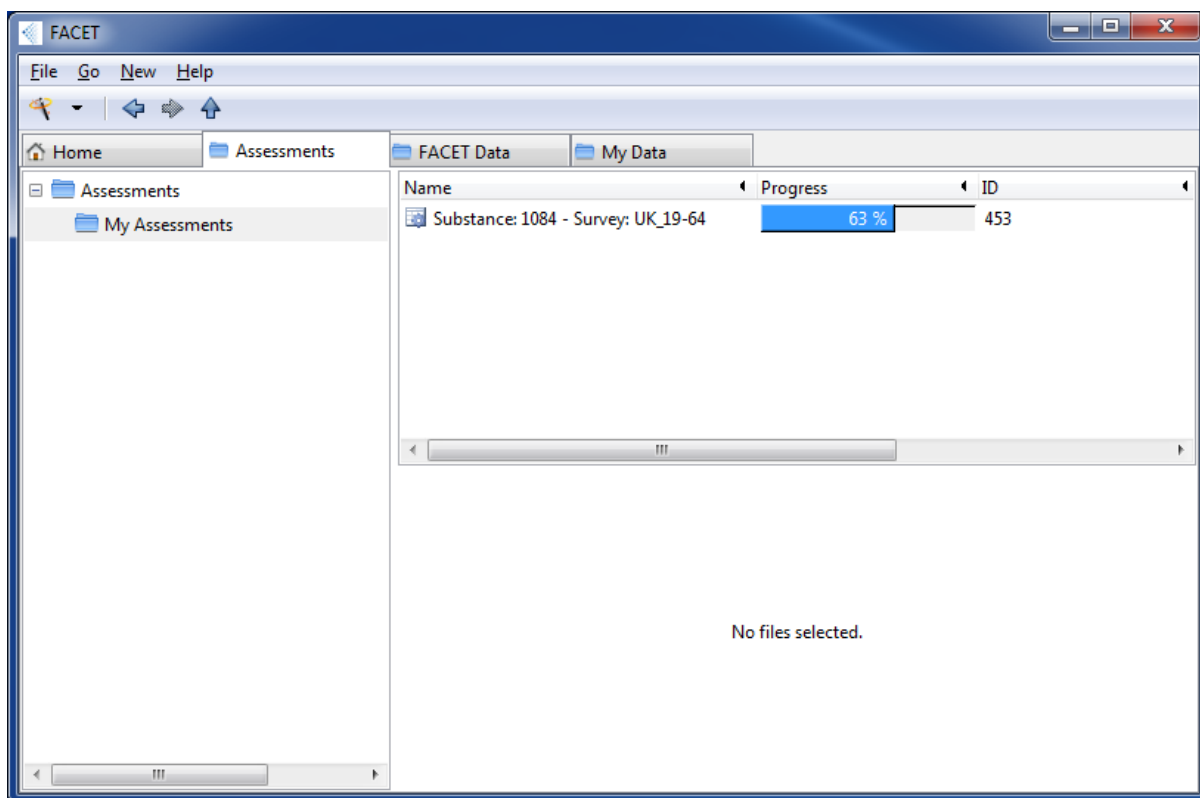


Figure 3-13: Assessment in Progress

Once the assessment completes, the user is informed of this with Progress set to “Complete”. This is shown in Figure 3-14.

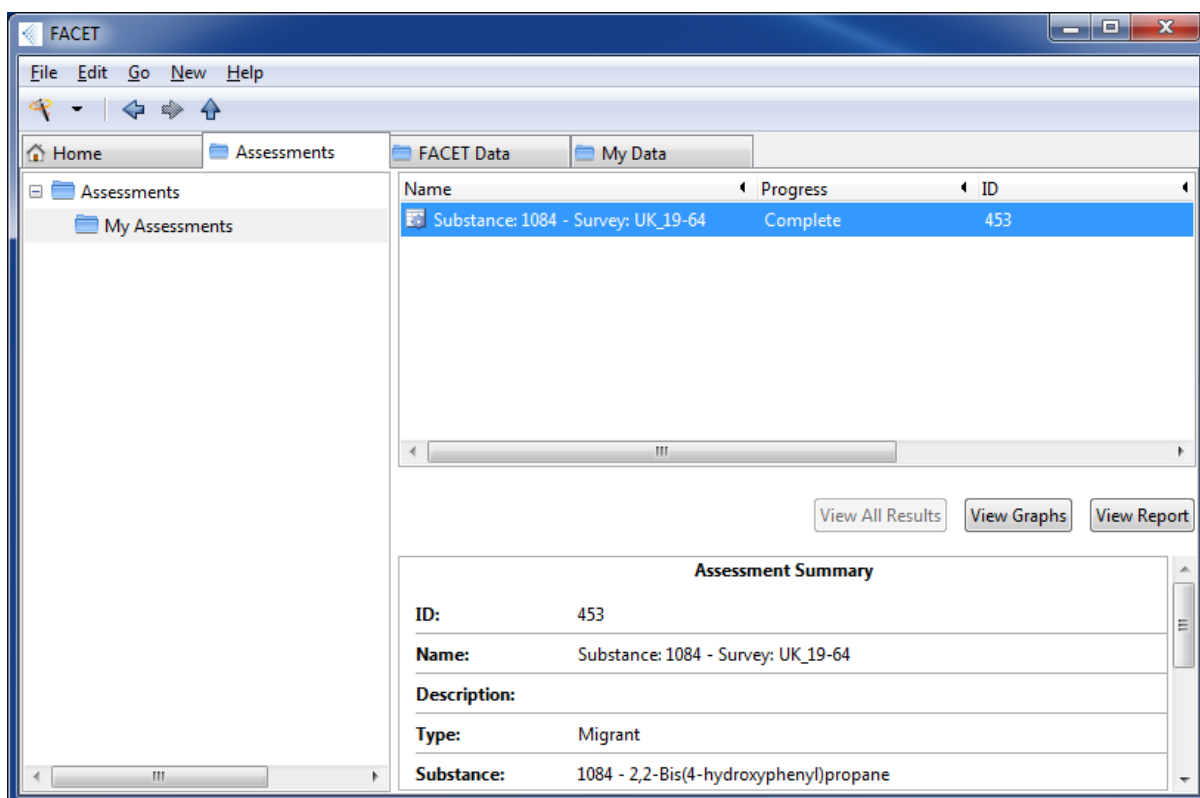


Figure 3-14: Assessment Complete

Once the assessment completes, the user can now access the results of the assessment. Before viewing the results (in Section 3.2), another useful option in the software can be explained. That is, the renaming of a table. To rename a table, the user initially selects the table, and then right clicks the mouse as illustrated in Figure 3-15. This gives the option to “Rename” or indeed “Delete” an assessment. To rename the assessment, select the “Rename” option. This has the effect of opening a pop-up window as shown in Figure 3-16.

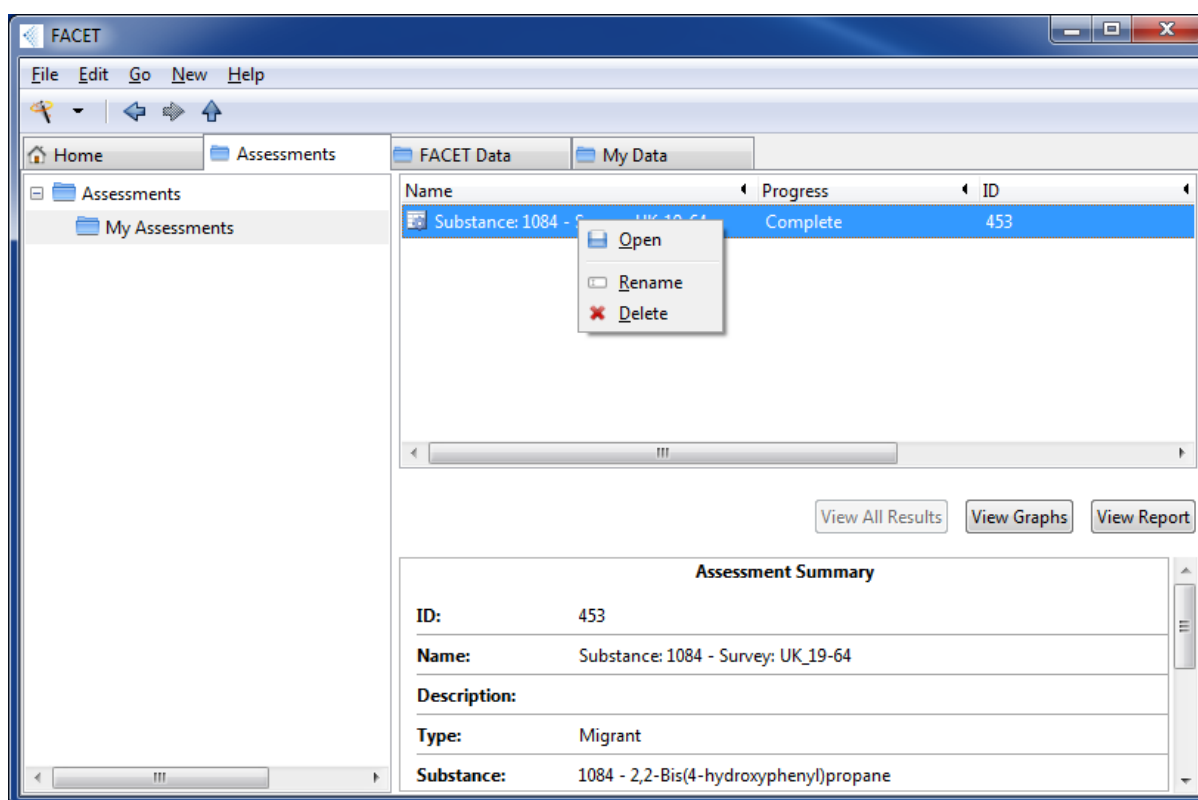


Figure 3-15: Rename Table

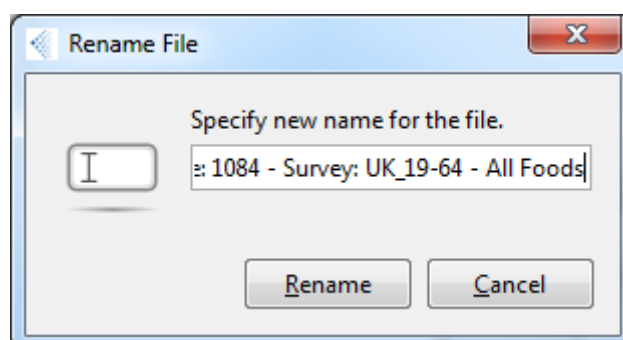


Figure 3-16: Renaming Table

At this stage the user can view the table and confirm its new name. This is shown in Figure 3-17.

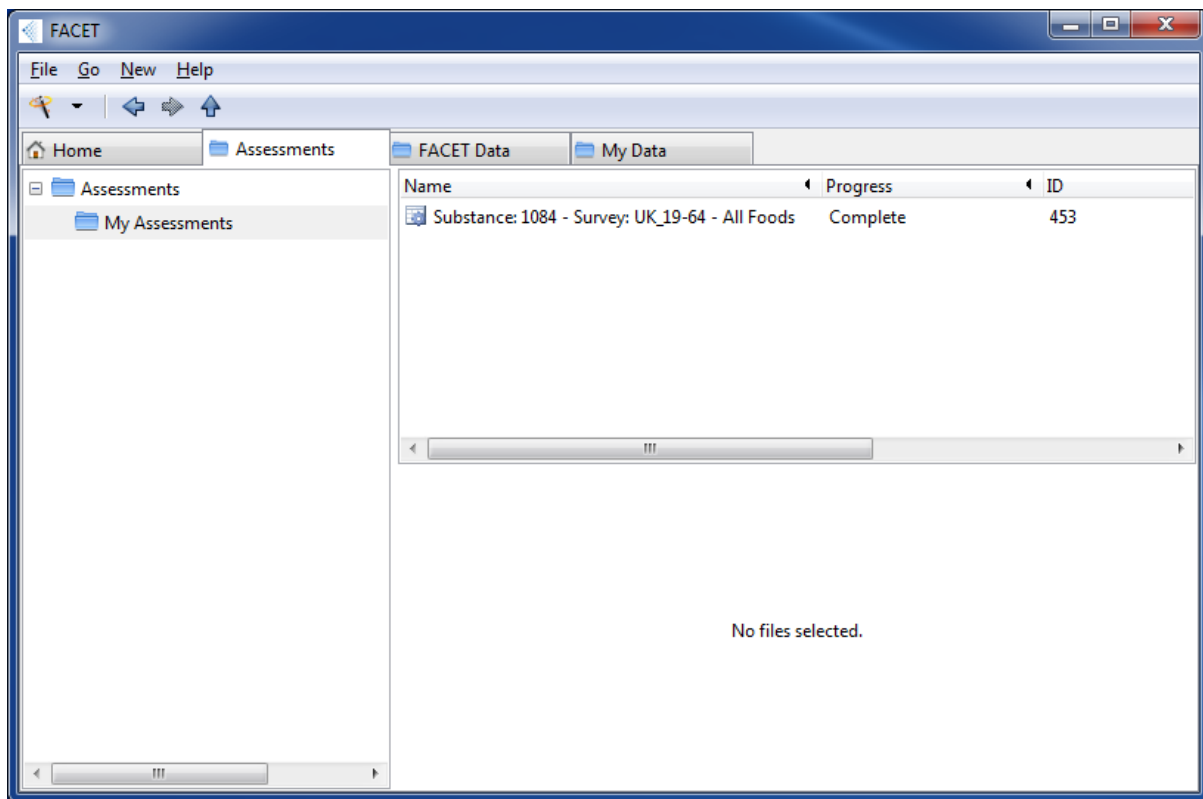


Figure 3-17: Table After Renaming

3.1.1 Exercises

Exercises for Basic Packaging Assessment

- (i) Run a Packaging Assessment satisfying the following criteria
 - a. Substance: 1084
 - b. Pack Types: All Pack Types
 - c. Foods: P.15 Alcoholic Beverages and P.18 Composite Foods
 - d. Survey: UK 19-64
 - e. Select Males between the ages of 20 and 25
 - f. Assessment Name: Substance: 1084 – Survey: UK_19-64 – Packs: [P.15, P.18] – Foods: All – Loyal: Yes
 - g. Select “With consumer loyalty”

- (ii) Run a Packaging Assessment satisfying the following criteria
 - a. Substance: 1334
 - b. Pack Types: Main = Plastic Tray/ Pot/ Tub/ Cup
 Closure = Sealed Lidding/ membrane, Plastic snap on lidding
 Exclude Outer and Insert components
 - c. Foods: P.17.1.1 Spoonable yoghurt
 - d. Survey: UK 19-64
 - e. Males and Females between 0 and 110
 - f. Assessment Name: Substance: 1334 – Survey: UK_19-64 – Packs: [Main, Closure] –
 Foods: P.17.1.1 – Loyal: No
 - g. Select “Without consumer loyalty”

3.2 Examining Results

Once the assessment has completed, the user can access the results of the assessment. This can be done in two ways: “View Graphs” and “View Report” as shown in Figure 3-18.

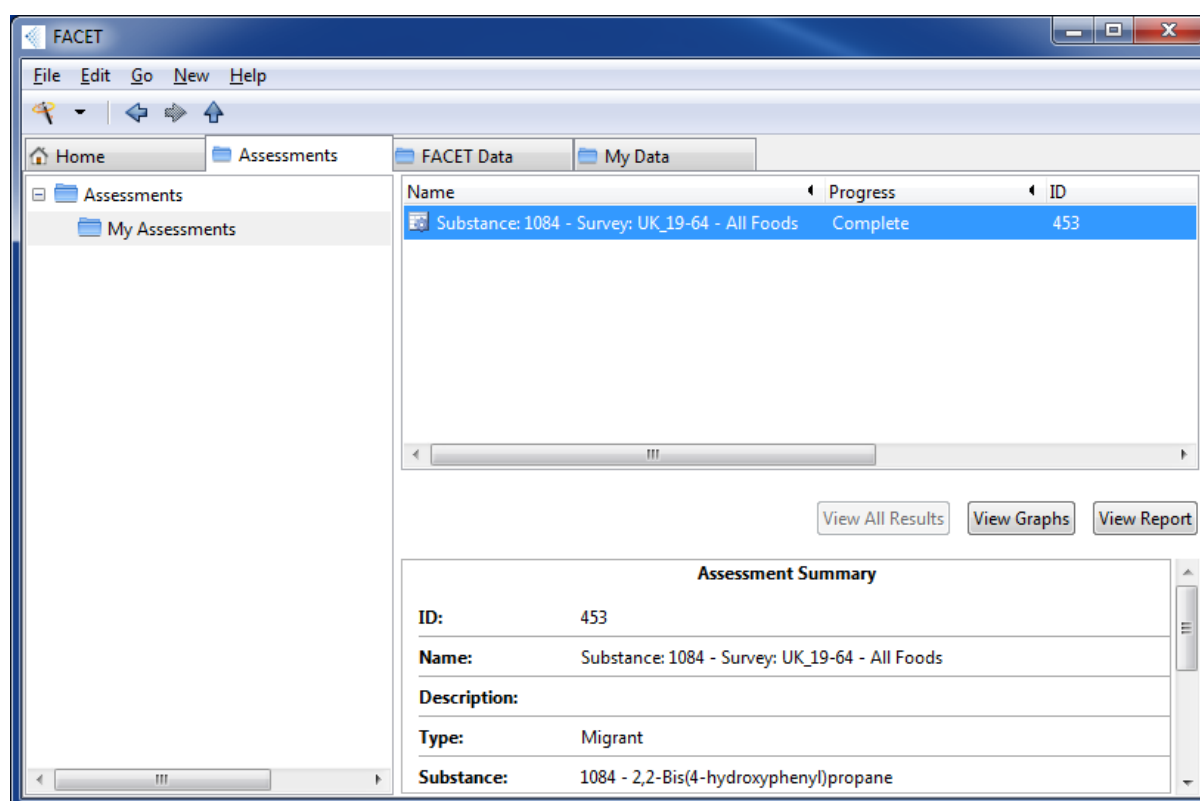


Figure 3-18: Viewing Results

If the user selects the “View Report” option then a report is displayed. For this example, the report is shown in Figure 3-19 and Figure 3-20.

Assessment Report - Substance: 1084 - Survey: UK_19-64 - All Foods

Export

facet

Assessment Report

WARNING: Reconstituted foods are excluded from food packaging assessments

| | |
|-----------------------------------|------------------------------------|
| Assessment ID: | 453 |
| Name: | Substance: 1084 - Survey: UK_19-64 |
| Survey: | UK NDNS 2000 19-64 |
| Description: | |
| Time Taken (mins): | 12 |
| Type: | Migrant |
| Concentration Type: | CUSTOM |
| Consumer Loyalty: | No Consumer Loyalty Chosen |
| Substance Code: | 1084 |
| Substance Name: | 2,2-Bis(4-hydroxyphenyl)propane |
| SetOff: | Without |
| Simulated Population Size: | 1631 |
| Gender Filter: | Males and females |
| Age Filter: | Between 0 and 110 |
| Submitted: | 2 Sep 2013 15:41 |
| Software Version: | 2.0.0 |

Figure 3-19: Assessment Report (Inputs)

Assessment Report - Substance: 1084 - Survey: UK_19-64 - All Foods

Export

2,2-Bis(4-hydroxyphenyl)propane - All Pack Types - Exposure, Absolute, Total Population (mg/d)

| Food Category | Count* | Mean | P90 | P95 |
|---|--------|-------------------------|------------------------|------------------------|
| P.11 - Sweeteners and honey | 1631 | 5.284e-6 ± 9.25e-7 | 0 ± 0 | 0.00001318 ± 4.415e-6 |
| P.12 - Salt, spices, herbs, sauces and soups | 1631 | 0.0007093 ± 0.00005179 | 0.002255 ± 0.0002317 | 0.00413 ± 0.0002657 |
| P.3 - Fruits, nuts and seeds | 1631 | 0.0002468 ± 0.00003093 | 0.0003959 ± 0.00004906 | 0.001168 ± 0.0001488 |
| P.4 - Vegetables, starchy roots, legumes and seaweeds | 1631 | 0.0007235 ± 0.00004303 | 0.002111 ± 0.000148 | 0.003436 ± 0.0002091 |
| P.10 - Eggs and egg products | 1631 | 0 ± 0 | 0 ± 0 | 0 ± 0 |
| P.6 - Cereals and cereal products | 1631 | 0 ± 0 | 0 ± 0 | 0 ± 0 |
| P.5 - Chocolate products and confectionery | 1631 | 0 ± 0 | 0 ± 0 | 0 ± 0 |
| P.13 - Nutritional foodstuffs | 1631 | 0 ± 0 | 0 ± 0 | 0 ± 0 |
| P.8 - Meat and meat products | 1631 | 0.00008011 ± 0.00001327 | 0 ± 0 | 0.0002916 ± 0.00008437 |
| P.14 - Non-alcoholic beverages (except dairy beverages) | 1631 | 0.001704 ± 0.0001067 | 0.005382 ± 0.0006895 | 0.01004 ± 0.0008584 |
| P.16 - Ready-to-eat savouries | 1631 | 0 ± 0 | 0 ± 0 | 0 ± 0 |

Figure 3-20: Assessment Report (Statistics)

The report itself can be exported to a .csv file by clicking the “Export” button at the top left of the report as shown in Figure 3-21.

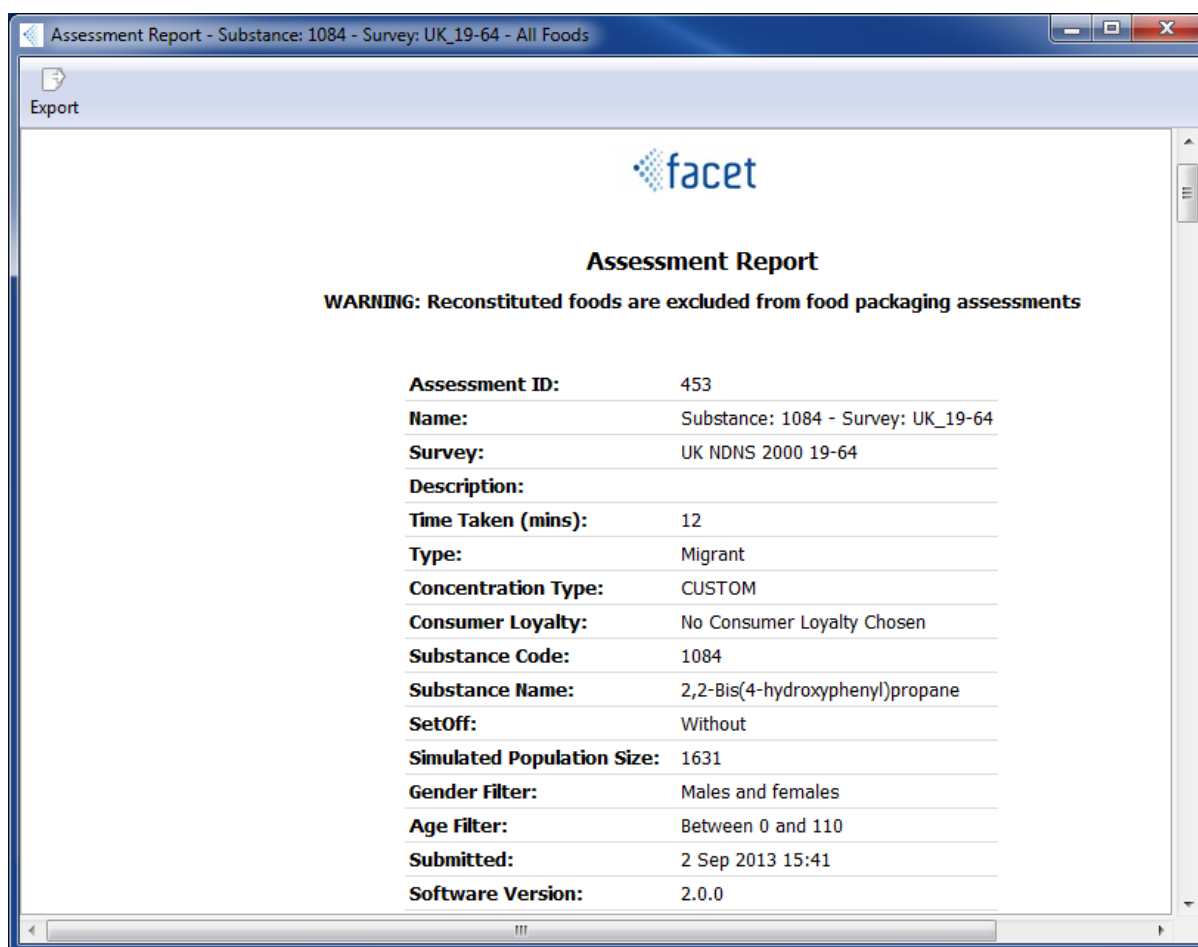


Figure 3-21: Exporting the Report

As well as viewing the numerical data outputted from the assessment, another option is to view graphs arising from the data. This is possible by clicking the "View Graphs" button as illustrated in Figure 3-22.

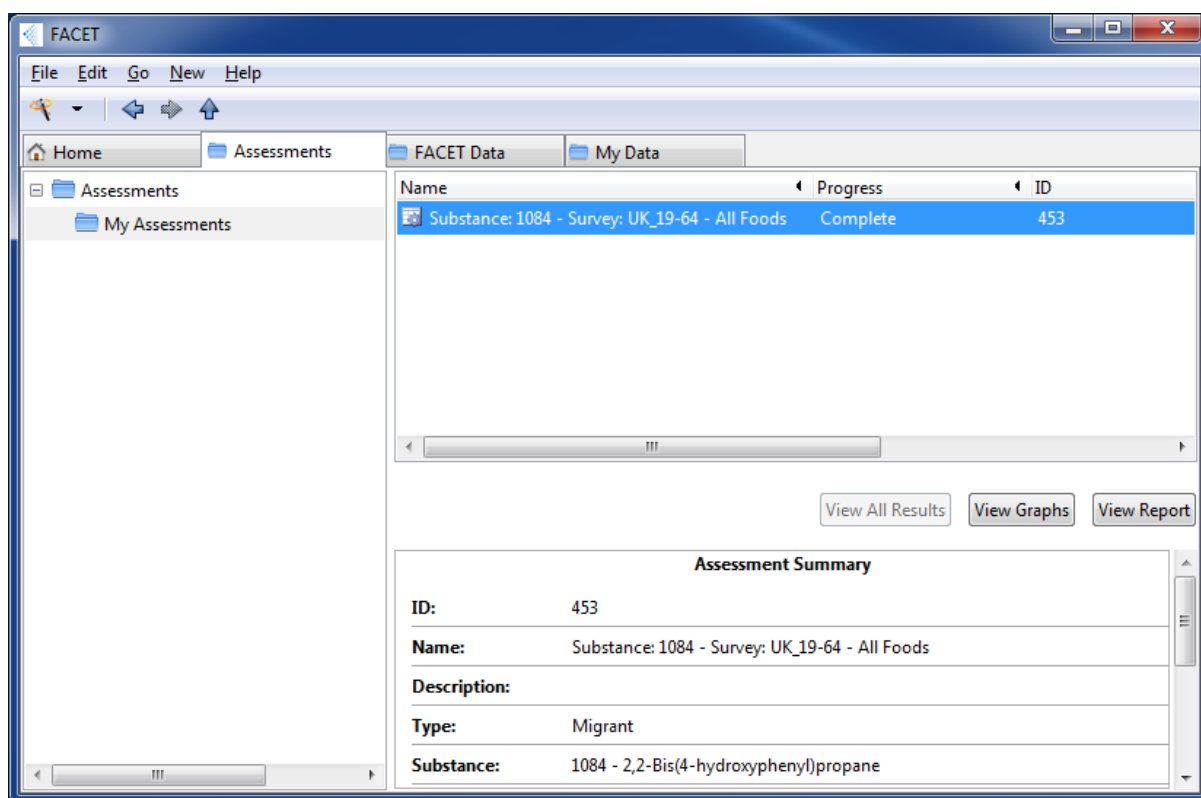


Figure 3-22: View Graphs

The graphs can be viewed “By Pack Type” or “By Food Category”. Initially the “By Pack Type” option is described.

Selecting the “By Pack Type” option displays two bar charts as well as the numerical statistical data arising from the assessment. This is shown in Figure 3-23. The first bar chart illustrates the mean chemical exposure to the chosen substance (i.e. BPA) for “Total Population” while the second bar chart shows the chemical exposure to BPA for “Food Consumers”.

There are further options to filter the data placed under the bar charts. For example, instead of displaying the data for the “Per unit body weight” Intake Type, the user can select “Absolute”. This has the effect of changing the data to match the appropriate Intake Type (i.e. Absolute) as well as re-graphing the bar charts to match the updated data. This is shown in Figure 3-24.

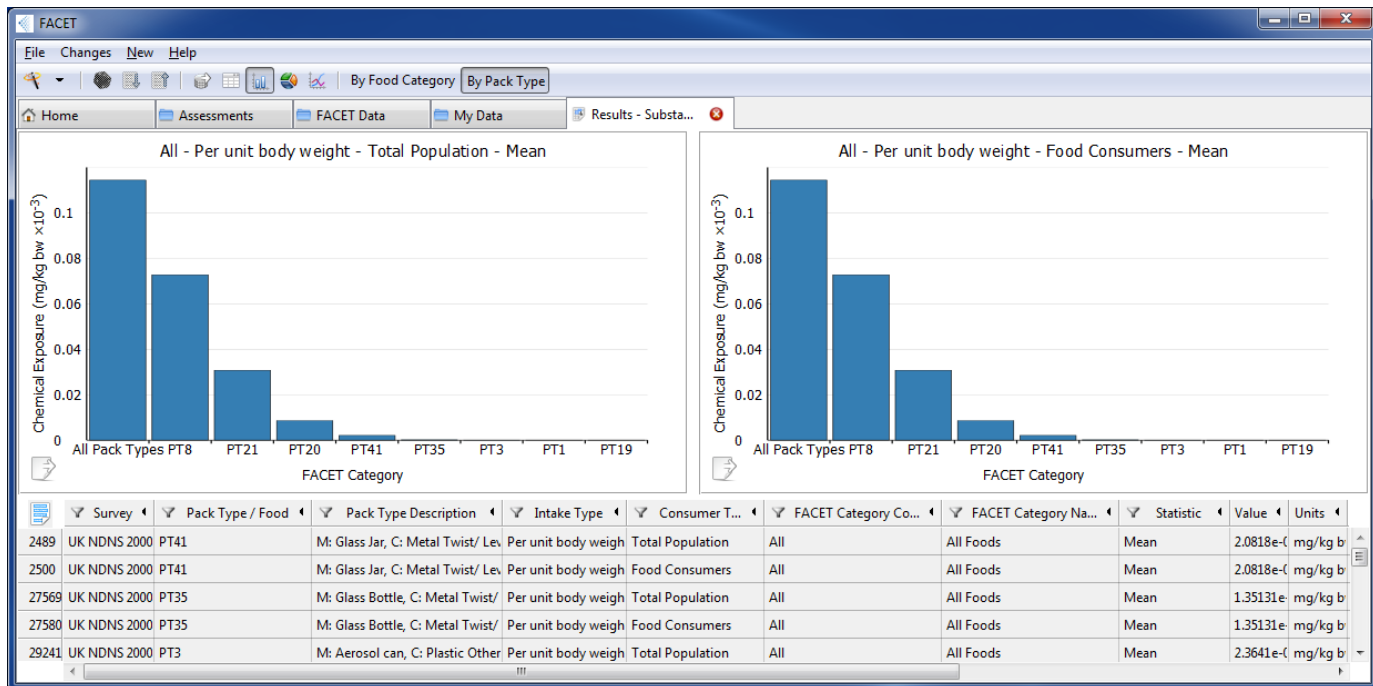


Figure 3-23: Graphs (By Pack Type), Column charts

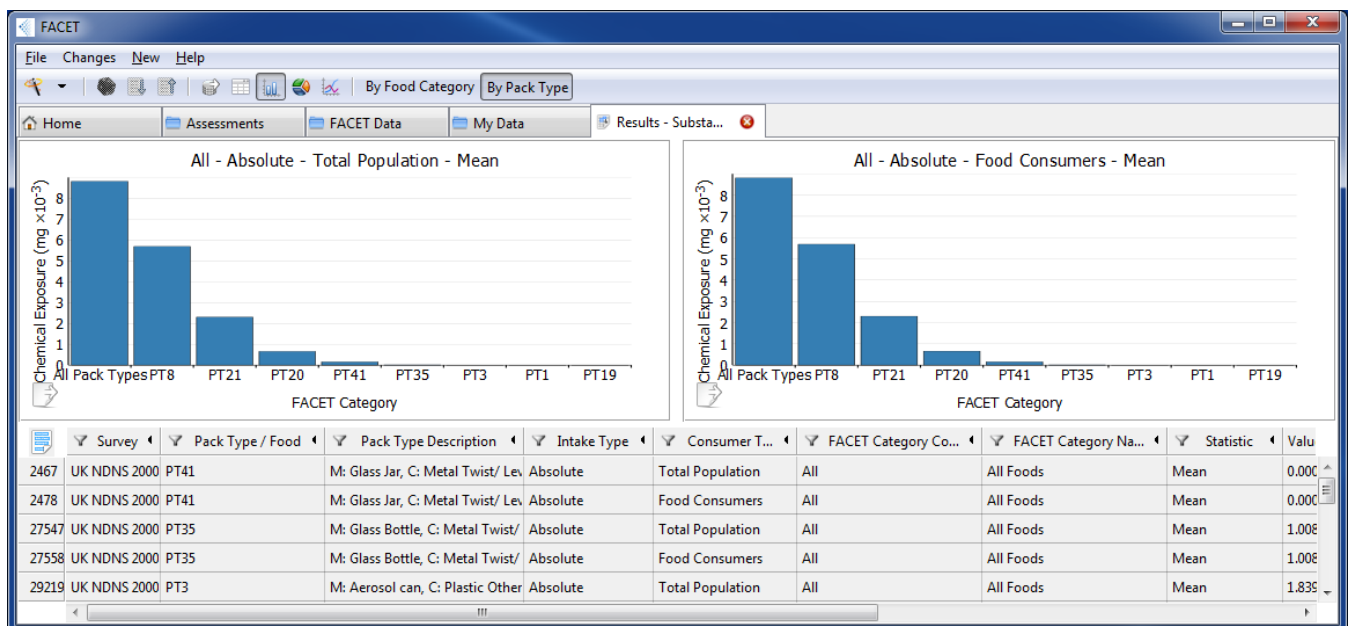


Figure 3-24: Filtering the Data

As well as viewing data using bar charts, a second option is to use pie charts. This option is possible by clicking the coloured disk/pie at the top of the window illustrated in Figure 3-25.

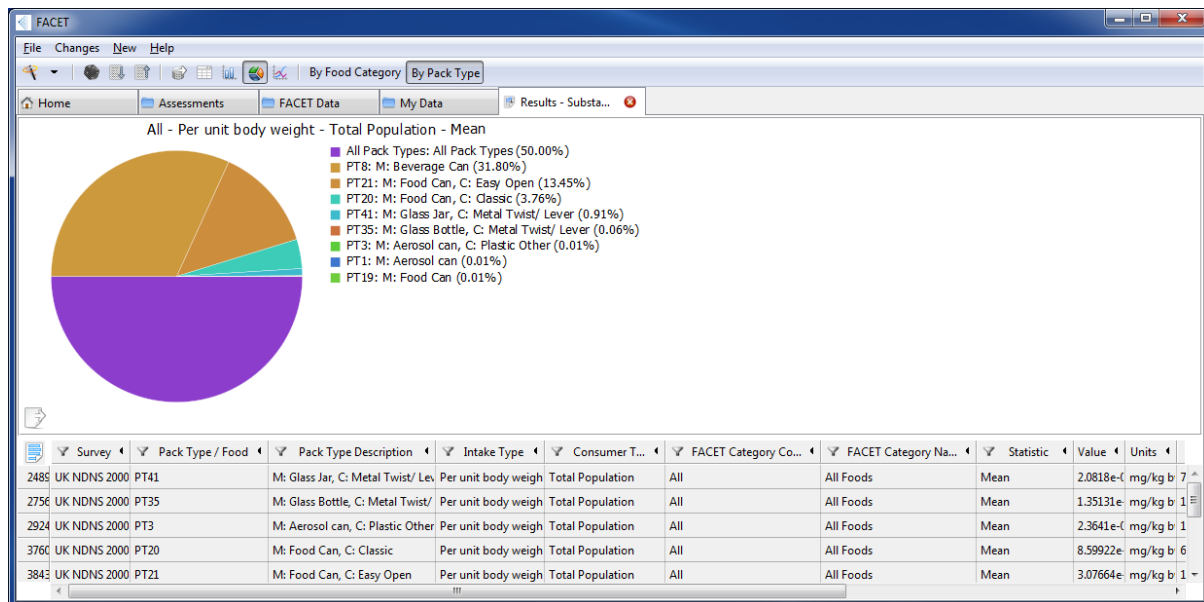


Figure 3-25: View Graphs (By Pack Type), Pie Chart

Also, the user has the option to filter the outputs of the assessment. For example, the Intake type can be change from “Per unit body weight” to “Absolute” as earlier. This has the effect of updating the numerical statistical data as well as the associated graph (i.e. pie chart in this case). This is shown in Figure 3-26.

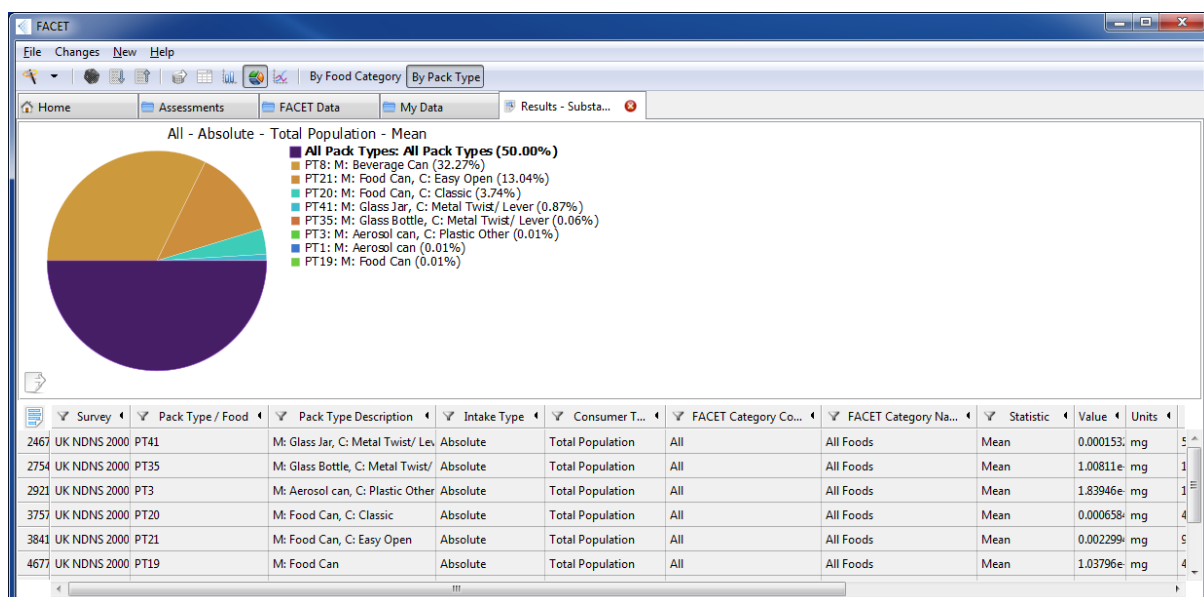


Figure 3-26: Filtering the Data

Instead of examining the assessment outputs “By Pack Type” the user can alternatively view the results “By Food Category”. This is made possible by clicking the “By Food Category” button as shown in Figure 3-27.

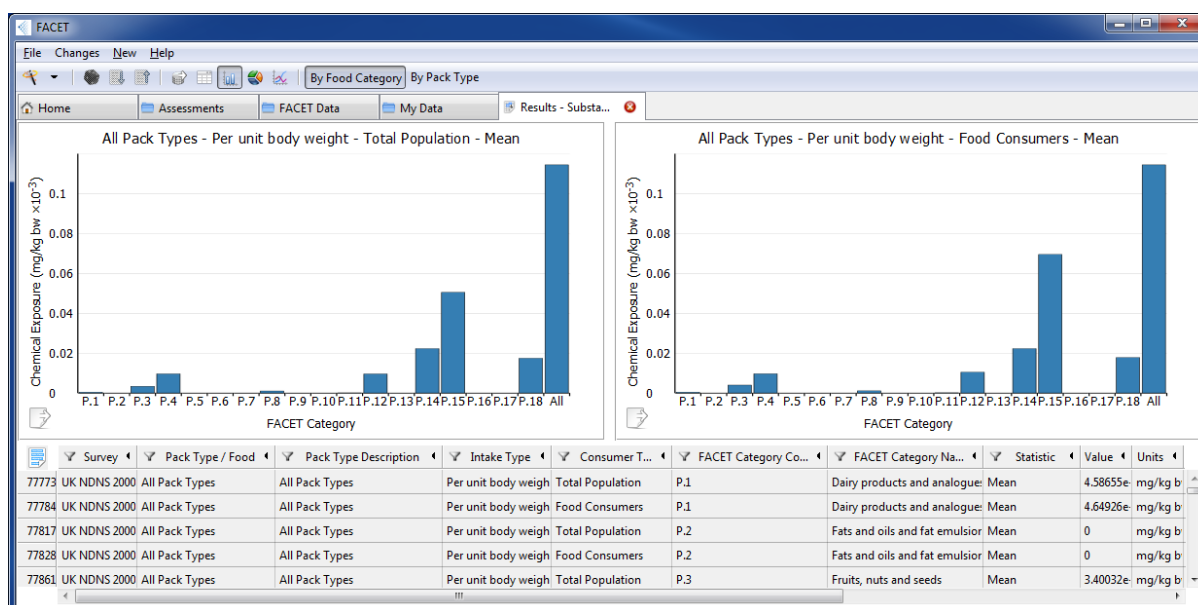


Figure 3-27: View Graphs (By Food Category), Column Charts

As with the option “By Pack Type” the user can also view the “By Food Category” data using pie charts. This option is illustrated in Figure 3-28.

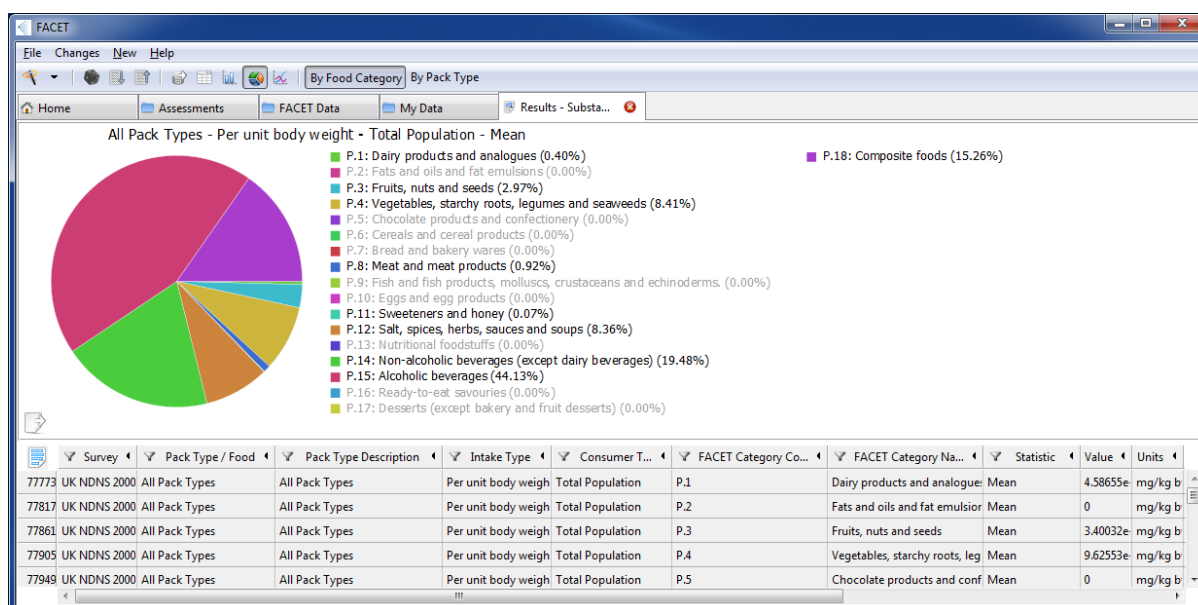


Figure 3-28: View Graphs (By Food Category), Pie Chart

The statistical data can be viewed without the use of graphs also. To do this, click the spreadsheet button at the top of the window in Figure 3-29.

| | Survey | Pack Type / Food | Pack Type Description | Intake Type | Consumer T... | FACET Category Co... | FACET Category Na... | Statistic | Value | Units |
|----|--------------|------------------|----------------------------------|-------------|------------------|----------------------|-----------------------------|------------------|------------|-------|
| 1 | UK NDNS 2000 | PT33 | M: Glass Bottle, C: Crimped alur | Absolute | Total Population | P.1 | Dairy products and analogue | Count | 1631 | |
| 2 | UK NDNS 2000 | PT33 | M: Glass Bottle, C: Crimped alur | Absolute | Total Population | P.1 | Dairy products and analogue | Percentage Consu | 100 | % |
| 3 | UK NDNS 2000 | PT33 | M: Glass Bottle, C: Crimped alur | Absolute | Total Population | P.1 | Dairy products and analogue | Mean | 0 | mg |
| 4 | UK NDNS 2000 | PT33 | M: Glass Bottle, C: Crimped alur | Absolute | Total Population | P.1 | Dairy products and analogue | Standard Deviat | 0 | mg |
| 5 | UK NDNS 2000 | PT33 | M: Glass Bottle, C: Crimped alur | Absolute | Total Population | P.1 | Dairy products and analogue | Minimum | 0 | mg |
| 6 | UK NDNS 2000 | PT33 | M: Glass Bottle, C: Crimped alur | Absolute | Total Population | P.1 | Dairy products and analogue | Maximum | 0 | mg |
| 7 | UK NDNS 2000 | PT33 | M: Glass Bottle, C: Crimped alur | Absolute | Total Population | P.1 | Dairy products and analogue | P25 | 0 | mg |
| 8 | UK NDNS 2000 | PT33 | M: Glass Bottle, C: Crimped alur | Absolute | Total Population | P.1 | Dairy products and analogue | P90 | 0 | mg |
| 9 | UK NDNS 2000 | PT33 | M: Glass Bottle, C: Crimped alur | Absolute | Total Population | P.1 | Dairy products and analogue | P95 | 0 | mg |
| 10 | UK NDNS 2000 | PT33 | M: Glass Bottle, C: Crimped alur | Absolute | Total Population | P.1 | Dairy products and analogue | CDF | Distributi | mg |
| 11 | UK NDNS 2000 | PT33 | M: Glass Bottle, C: Crimped alur | Absolute | Total Population | P.1 | Dairy products and analogue | PDF | Distributi | mg |
| 12 | UK NDNS 2000 | PT33 | M: Glass Bottle, C: Crimped alur | Absolute | Food Consumers | P.1 | Dairy products and analogue | Count | 1609 | |
| 13 | UK NDNS 2000 | PT33 | M: Glass Bottle, C: Crimped alur | Absolute | Food Consumers | P.1 | Dairy products and analogue | Percentage Consu | 98.6511 | % |
| 14 | UK NDNS 2000 | PT33 | M: Glass Bottle, C: Crimped alur | Absolute | Food Consumers | P.1 | Dairy products and analogue | Mean | 0 | mg |
| 15 | UK NDNS 2000 | PT33 | M: Glass Bottle, C: Crimped alur | Absolute | Food Consumers | P.1 | Dairy products and analogue | Standard Deviat | 0 | mg |
| 16 | UK NDNS 2000 | PT33 | M: Glass Bottle, C: Crimped alur | Absolute | Food Consumers | P.1 | Dairy products and analogue | Minimum | 0 | mg |
| 17 | UK NDNS 2000 | PT33 | M: Glass Bottle, C: Crimped alur | Absolute | Food Consumers | P.1 | Dairy products and analogue | Maximum | 0 | mg |
| 18 | UK NDNS 2000 | PT33 | M: Glass Bottle, C: Crimped alur | Absolute | Food Consumers | P.1 | Dairy products and analogue | P25 | 0 | mg |

Figure 3-29: Data Only

Finally, the user can export the graphs to a .png image to be used, for example, in a report. To do this the user chooses the “Export graph to local file” option. This is the button at the bottom left of the graph to be exported. This is shown in Figure 3-30. To export the data, the user selects “File” followed by “Export Data” as seen in the top left corner of Figure 3-30.

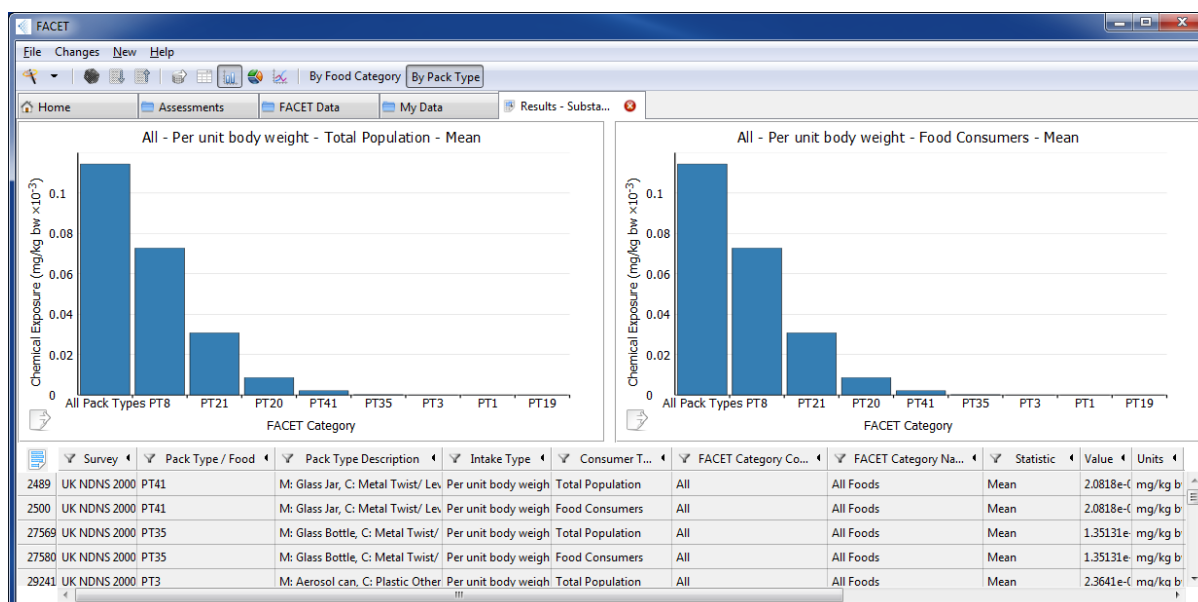


Figure 3-30: Export Graph to PNG image

3.2.1 Exercises: Examining Results

1. In the first exercise of Section 3.1.1 the assessment “Substance: 1084 – Survey: UK_19-64 – Packs: [P.15, P.18] – Foods: All – Loyal: Yes” was created. Using the outputs from this assessment complete the following tasks.
 - a. Download the bar chart broken down “By Food Category” described as follows: “Per unit body weight” for “Total Population”
 - b. Download the bar chart broken down “By Food Category” described as follows: “Per unit body weight” for “Food Consumers”
 - c. Download the data broken down “By Food Category”
 - d. Download the pie chart broken down “By Food Category” described as follows: “Per unit body weight” for “Total Population”
 - e. Download the bar chart broken down “By Pack Type” described as follows: “Per unit body weight” for “Total Population”
 - f. Download the Report summarising the assessment outputs.

3.3 Entering extraction/migration data

Sometimes the user needs to run specific assessments based on the results of a survey. Another requirement may be to enter a new substance and run an exposure assessment for the substance under particular conditions. These types of assessments are possible using the “New Packaging Wizard”.

3.3.1 Using the New Packaging Wizard for a Substance in a Metal Pack Type

The “New Packaging Wizard” is made available for use by selecting this option as shown in Figure 3-31.

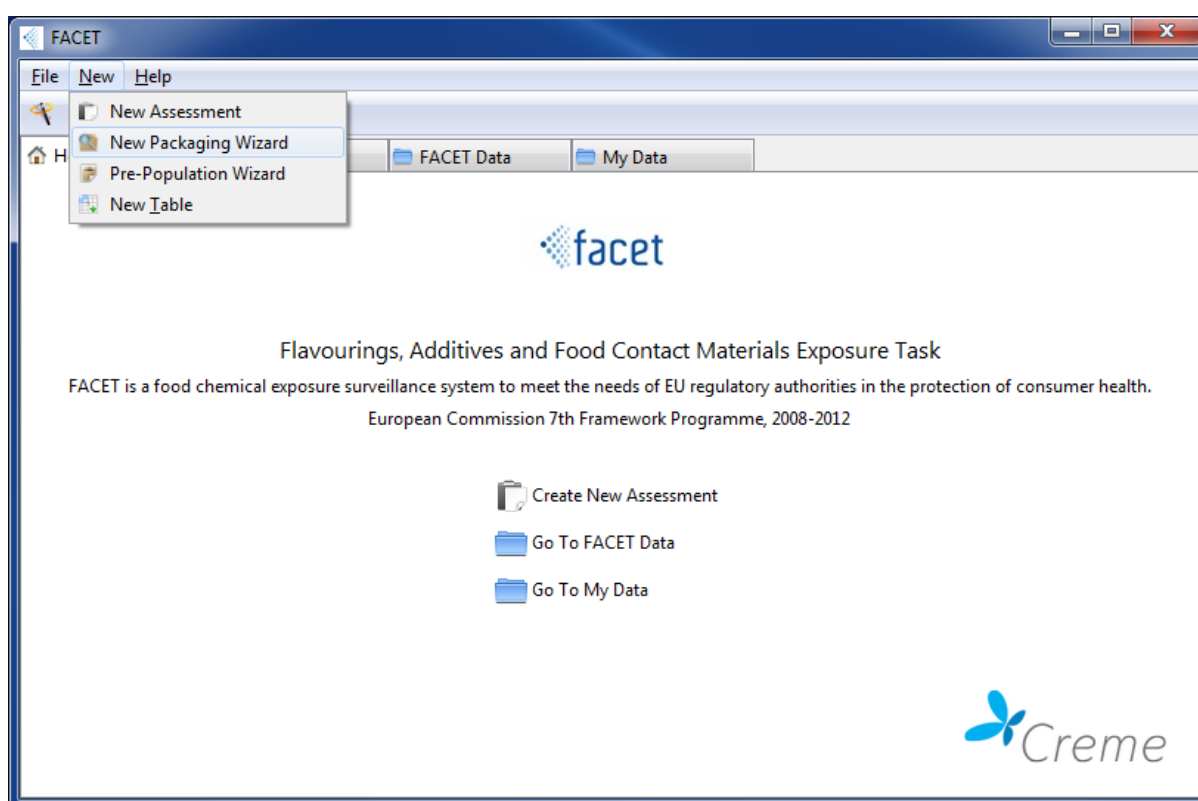


Figure 3-31: Select New Packaging Wizard

At this point, the user has two options. They can consider a substance in a pack type which is “Non-Metal” or “Metal”. For our example, we selected “New Metal Pack Type” as illustrated in Figure 3-32.

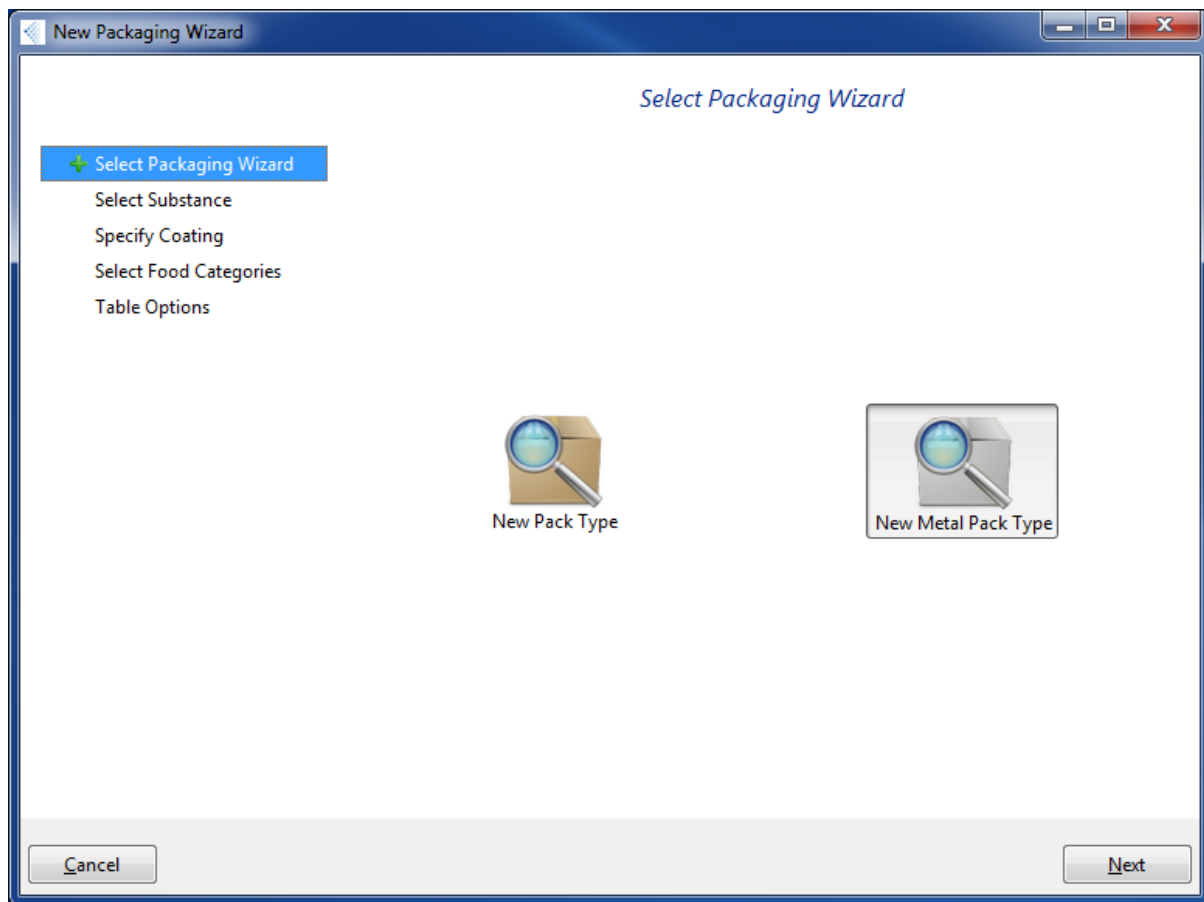


Figure 3-32: Select New Metal Pack Type

There is another choice at the next stage of the assessment. The user can select a “New Substance” or an “Existing Substance”. For this example, we select an “Existing Substance” called Styrene as shown in Figure 3-33.

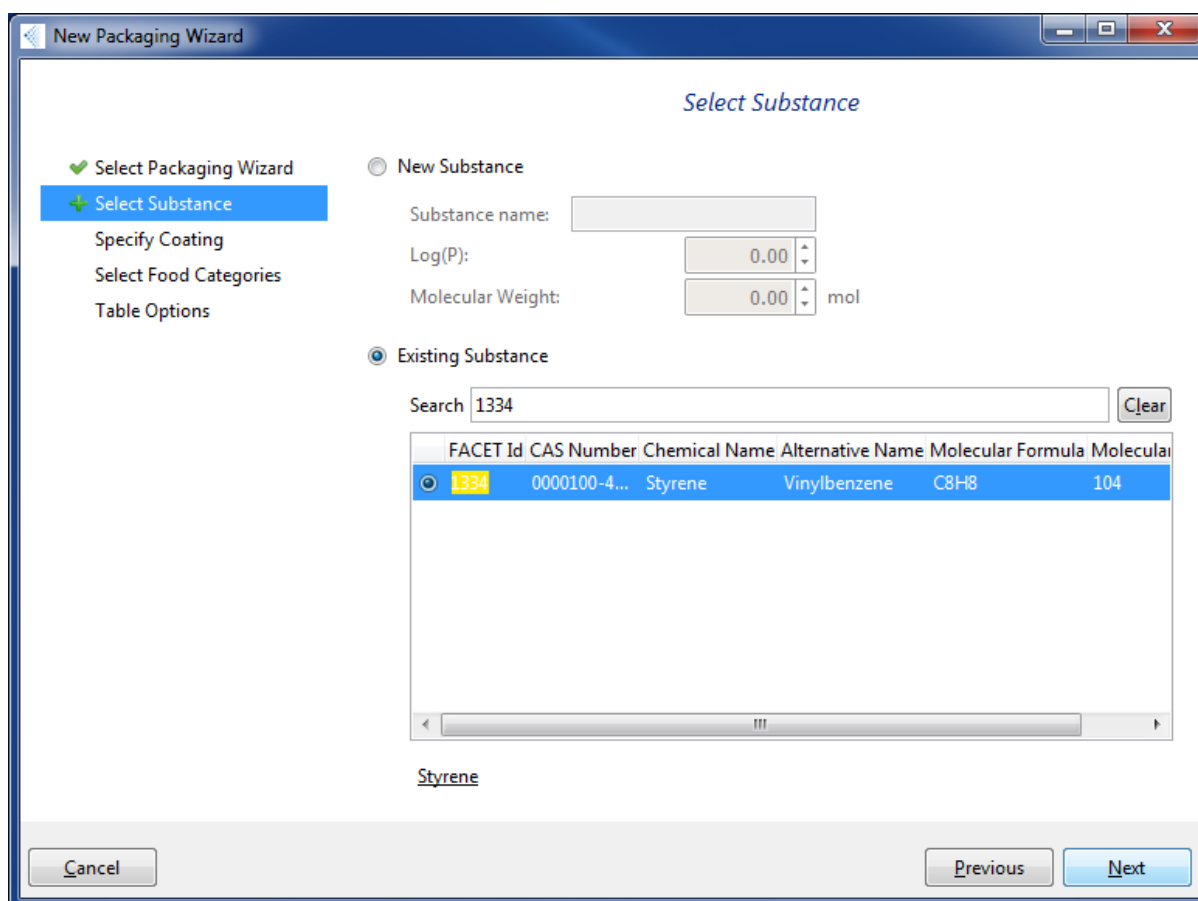


Figure 3-33: Select Existing Substance

At the next stage, the user can describe the details of the pack by selecting the Surface to Volume ratio, Pack Type, and Material Code. This process is illustrated in Figure 3-34 to Figure 3-39. In Figure 3-34 the Surface to Volume (ratio) is chosen. In our example, we use a Surface to Volume Ratio of $0.6 \text{ (cm}^2/\text{g)}$.

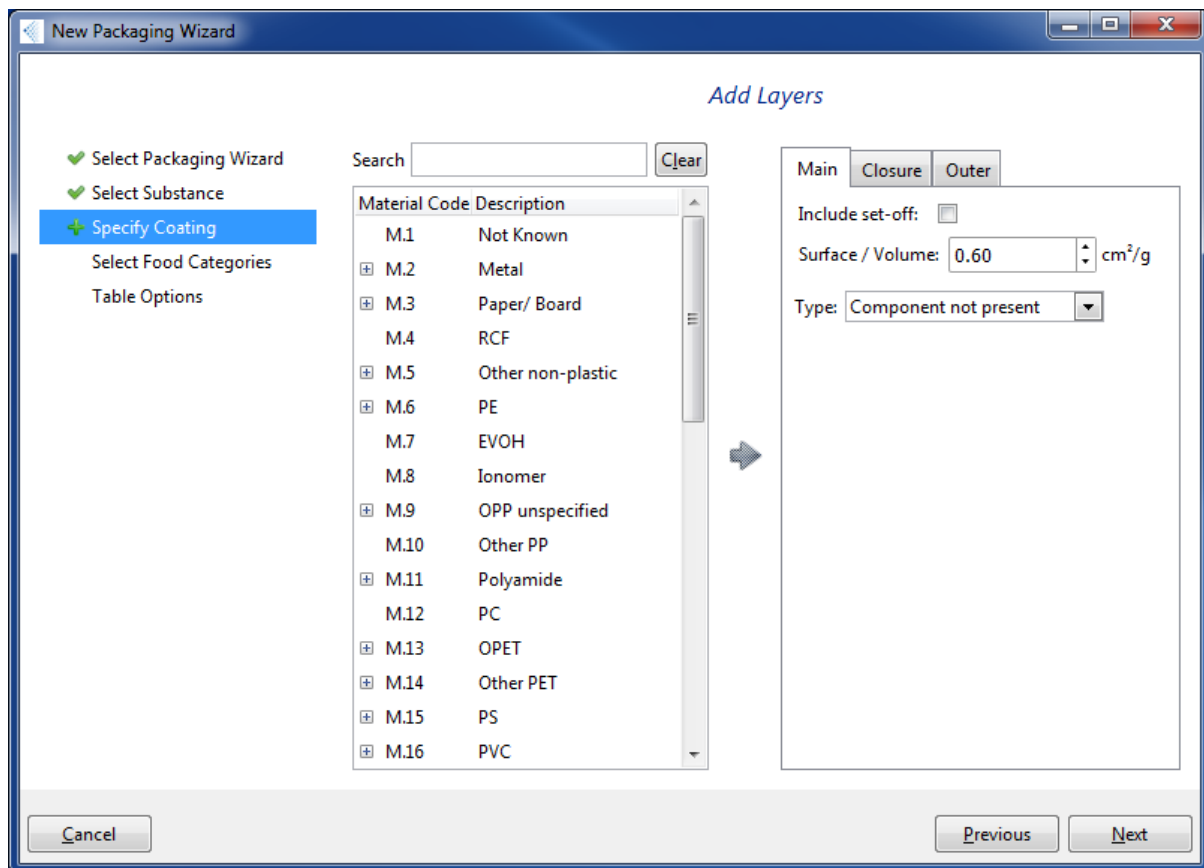


Figure 3-34: Select Surface/Volume

Next the (Pack) Type is selected. This is shown in Figure 3-35 where Beverage Can is the “Type” chosen.

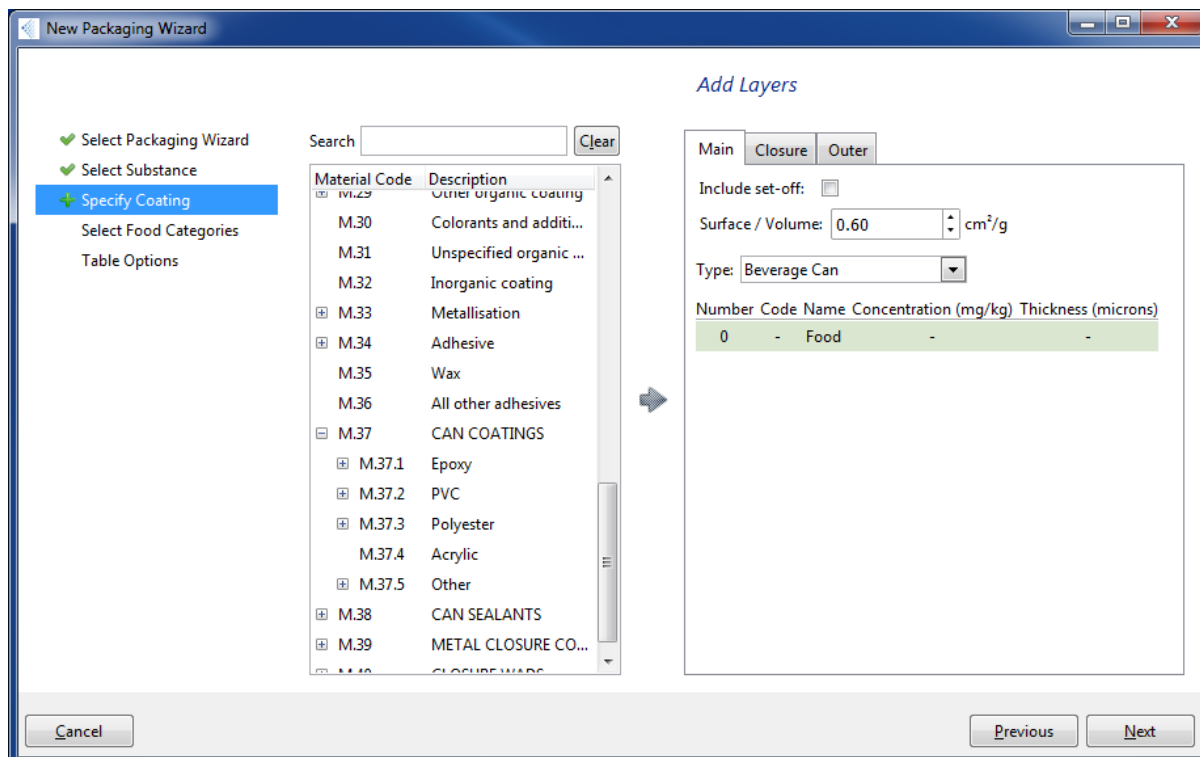


Figure 3-35: Select Pack Type

At this stage the user selects the materials/layers of the Pack Type. This is carried out by selecting the appropriate material. This step is shown in Figure 3-36 to Figure 3-39 where the material “M.37.1.4.1” is chosen. Initially, in Figure 3-36, an attempt is made to locate the required “Material Code”. This brings us to the “Material Code” M.37.1. The user observes at this point that the “Material Code” is not fully visible. To resolve this, the user needs to widen the “Material Code” field. This is done by clicking on the bar between “Material Code” and “Description” and moving the mouse to the right while the mouse remains clicked.

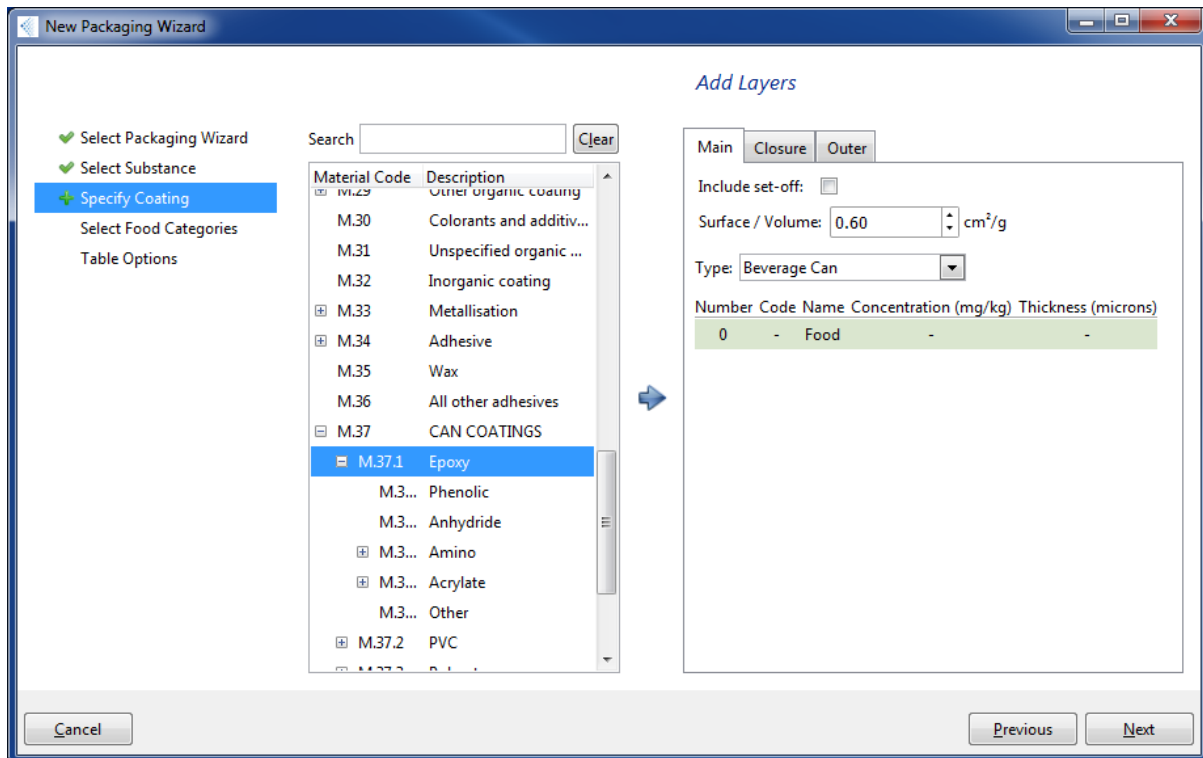


Figure 3-36: Searching for Material Code

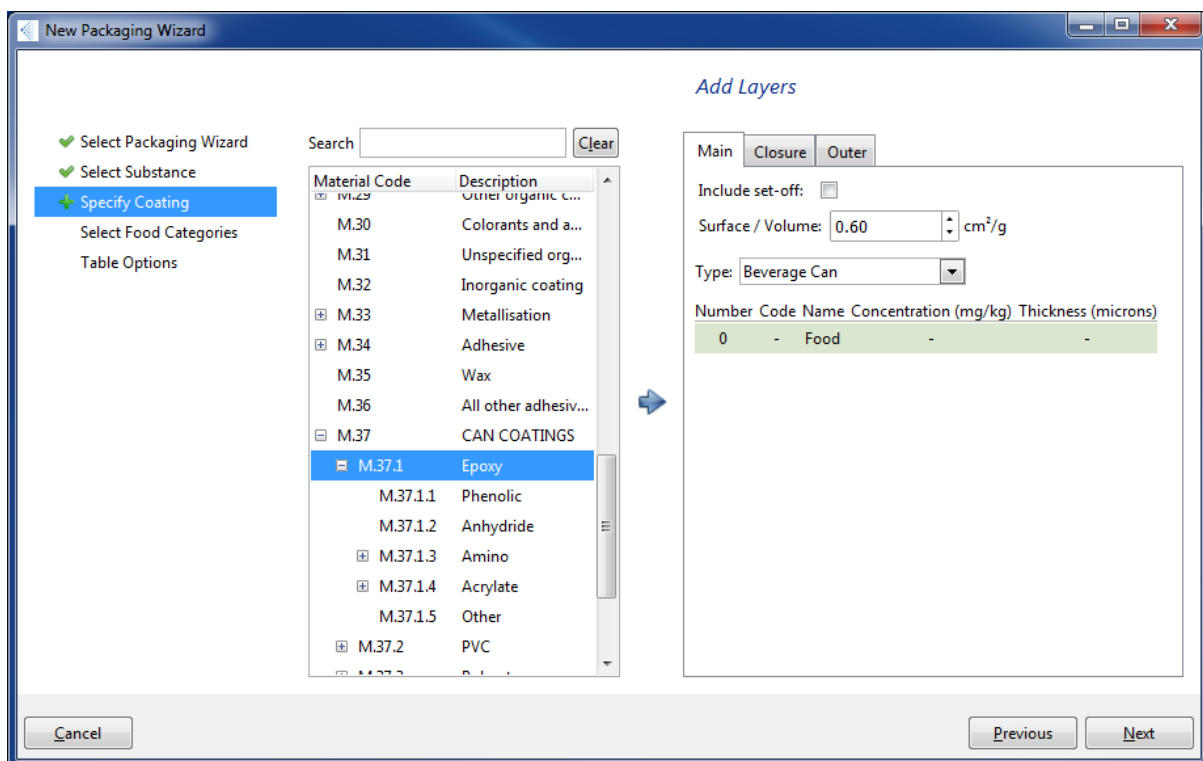


Figure 3-37: Accessing Full Material Code

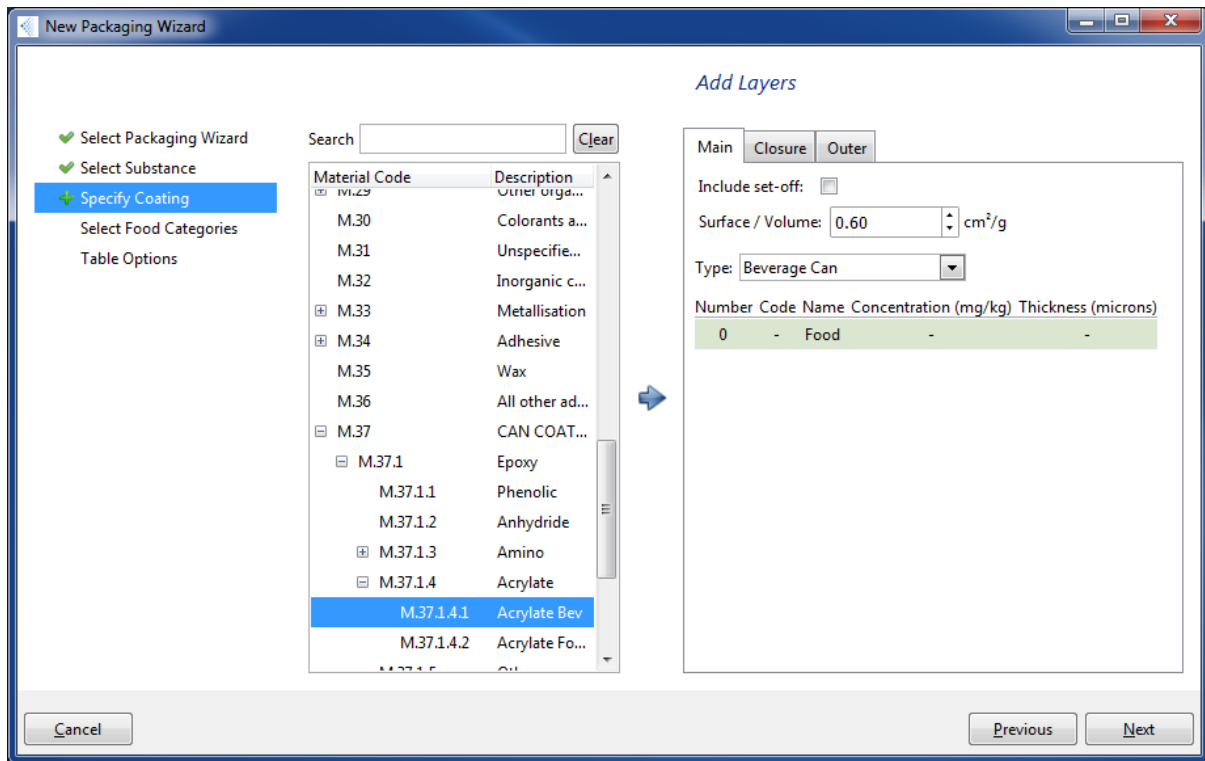


Figure 3-38: Viewing Full Material Code

Once the user has found the correct “Material Code”, and highlighted it (as in Figure 3-38), the next step is to click the blue arrow. This has the effect of displaying this material as illustrated in Figure 3-39.

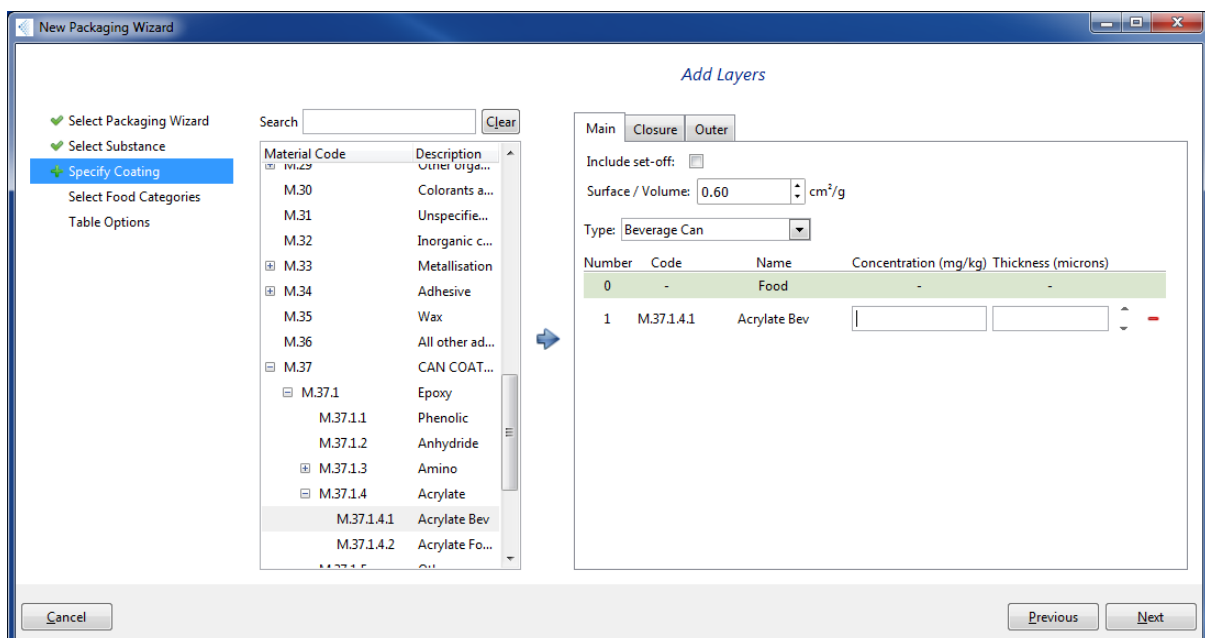


Figure 3-39: Selection of Material Code

The user is asked to enter the initial concentration of the chosen substance in the material as well as the thickness of the material. This step is illustrated in Figure 3-40.

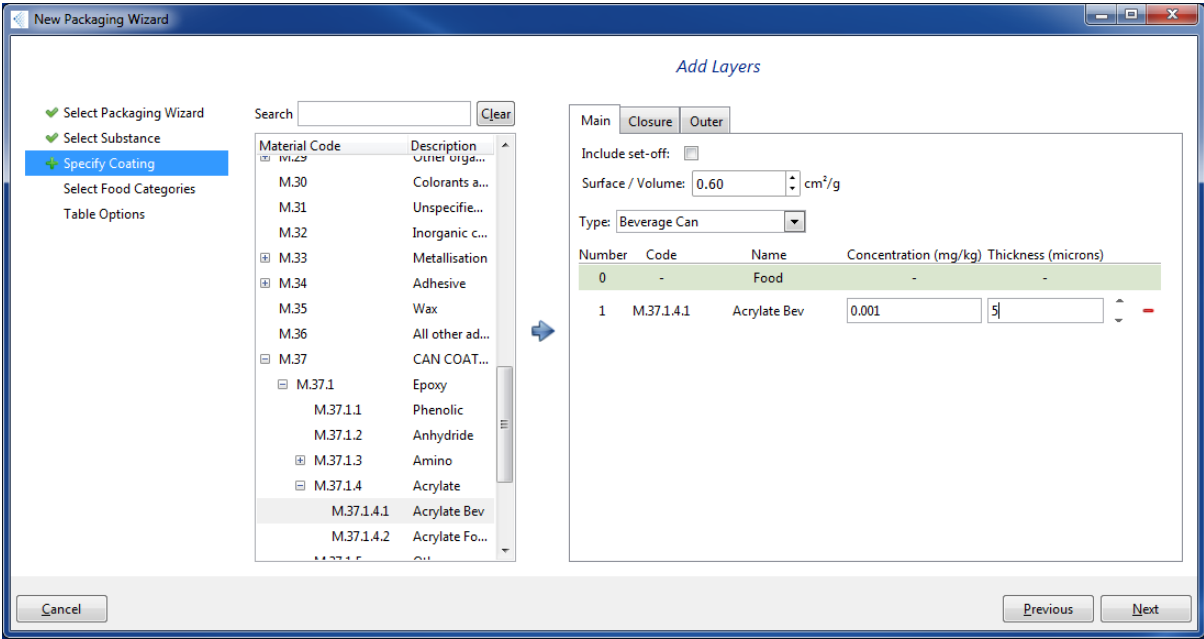


Figure 3-40: Filling in Concentration and Thickness values

Now the user selects the Food Categories of interest. In this example, Beer is selected as illustrated in Figure 3-41.

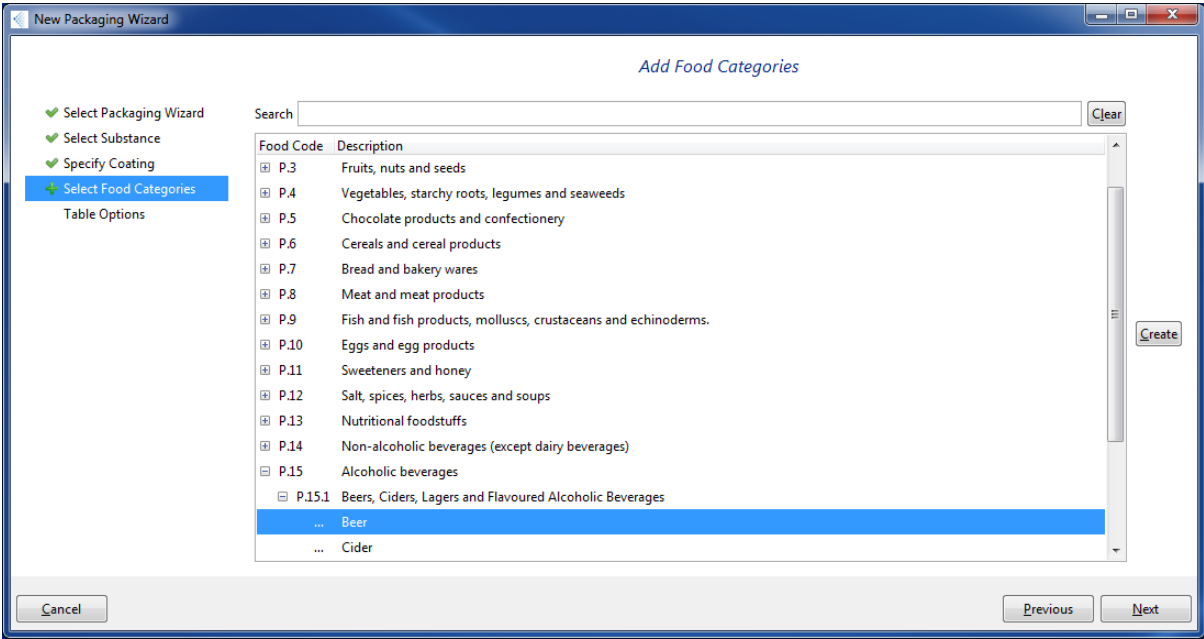


Figure 3-41: Selection of appropriate Food Categories

A “Pack Size” and “Substance Migration Rate” are required as part of the assessment. This is illustrated in Figure 3-42 and Figure 3-43.

New Packaging Wizard

Add Food Categories

- Select Packaging Wizard
- Select Substance
- Specify Coating
- Select Food Categories**
- Table Options

Search:

| Food Code | Description |
|-----------|--|
| P.3 | Fruits, nuts and seeds |
| P.4 | Vegetables, starchy roots, legumes and seaweeds |
| P.5 | Chocolate products and confectionery |
| P.6 | Cereals and cereal products |
| P.7 | Bread and bakery wares |
| P.8 | Meat and meat products |
| P.9 | Fish and fish products, molluscs, crustaceans and echinoderms. |
| P.10 | Eggs and egg products |
| P.11 | Sweeteners and honey |
| P.12 | Salt, spices, herbs, sauces and soups |
| P.13 | Nutritional foodstuffs |
| P.14 | Non-alcoholic beverages (except dairy beverages) |
| P.15 | Alcoholic beverages |
| P.15.1 | Beers, Ciders, Lagers and Flavoured Alcoholic Beverages |
| ... | ♥ Beer |
| ... | Cider |

P.15.1.1 - Beer

Market share: %

Pack size: g

Substance migration rate: mg/dm²

Figure 3-42: Pack Size and Migration Rate

New Packaging Wizard

Add Food Categories

- Select Packaging Wizard
- Select Substance
- Specify Coating
- Select Food Categories**
- Table Options

Search:

| Food Code | Description |
|-----------|--|
| P.3 | Fruits, nuts and seeds |
| P.4 | Vegetables, starchy roots, legumes and seaweeds |
| P.5 | Chocolate products and confectionery |
| P.6 | Cereals and cereal products |
| P.7 | Bread and bakery wares |
| P.8 | Meat and meat products |
| P.9 | Fish and fish products, molluscs, crustaceans and echinoderms. |
| P.10 | Eggs and egg products |
| P.11 | Sweeteners and honey |
| P.12 | Salt, spices, herbs, sauces and soups |
| P.13 | Nutritional foodstuffs |
| P.14 | Non-alcoholic beverages (except dairy beverages) |
| P.15 | Alcoholic beverages |
| P.15.1 | Beers, Ciders, Lagers and Flavoured Alcoholic Beverages |
| ... | ♥ Beer |
| ... | Cider |

P.15.1.1 - Beer

Market share: %

Pack size: g

Substance migration rate: mg/dm²

Figure 3-43: Entering Pack Size and Substance Migration Rate

As in other assessments, it is preferable to choose an appropriate name for the assessment. This step is illustrated in Figure 3-44 and Figure 3-45.

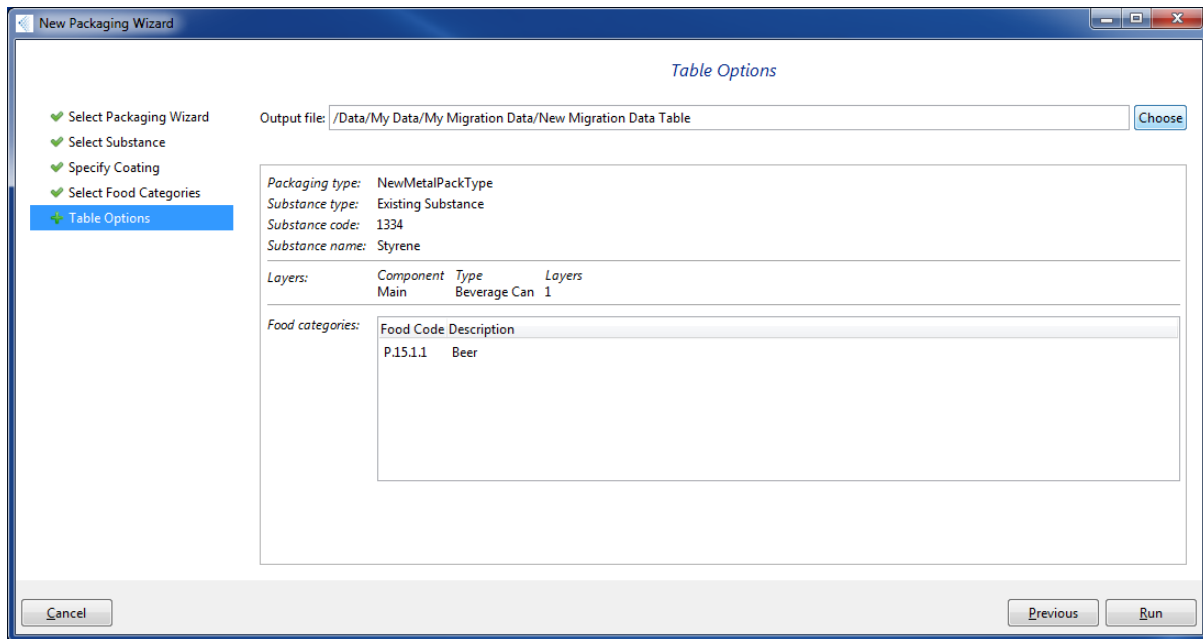


Figure 3-44: Name File

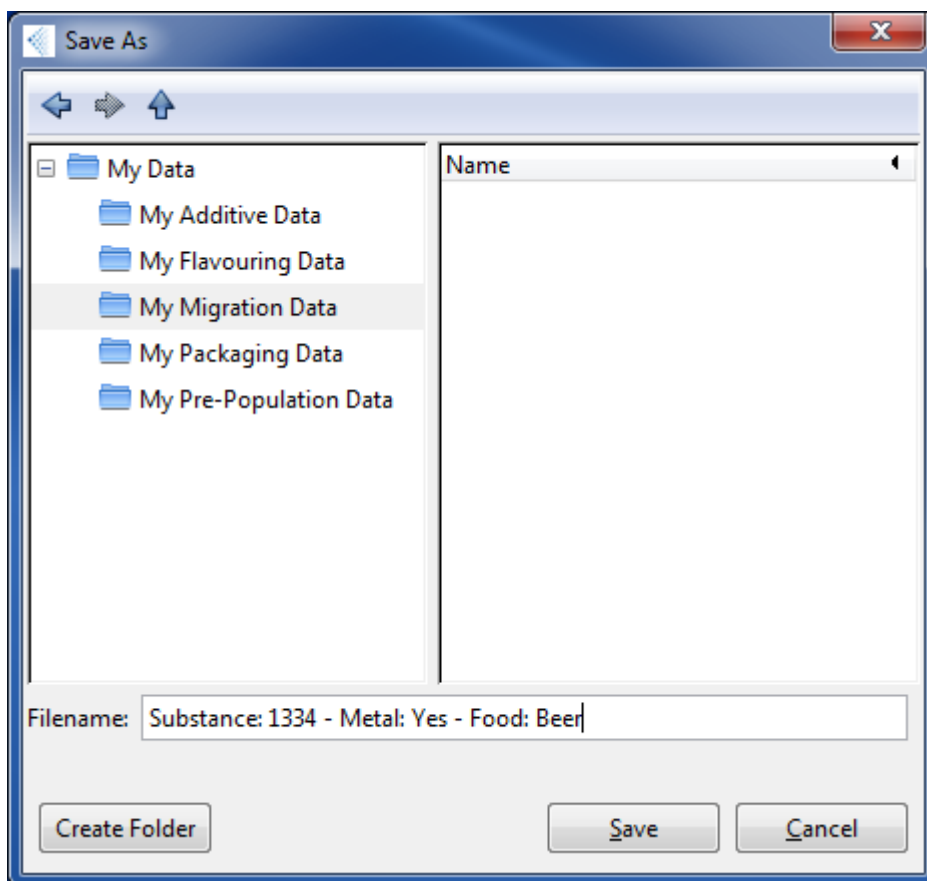


Figure 3-45: Naming File

A summary of the assessment is provided and the user selects “Run” to run the assessment. This is illustrated in Figure 3-46 and Figure 3-47.

New Packaging Wizard

Table Options

Output file: /Data/My Data/My Migration Data/Substance: 1334 - Metal: Yes - Food: Beer Choose

Packaging type: NewMetalPackType
Substance type: Existing Substance
Substance code: 1334
Substance name: Styrene

| Layers: | Component | Type | Layers |
|---------|--------------|------|--------|
| Main | Beverage Can | 1 | |

Food categories:

| Food Code | Description |
|-----------|-------------|
| P.15.1.1 | Beer |

Cancel Previous Run

Figure 3-46: Summary of Assessment

New Packaging Wizard

Your table has been created.

OK

Figure 3-47: Table Created

Upon completion of the assessment, the software informs the user as shown in Figure 3-48.

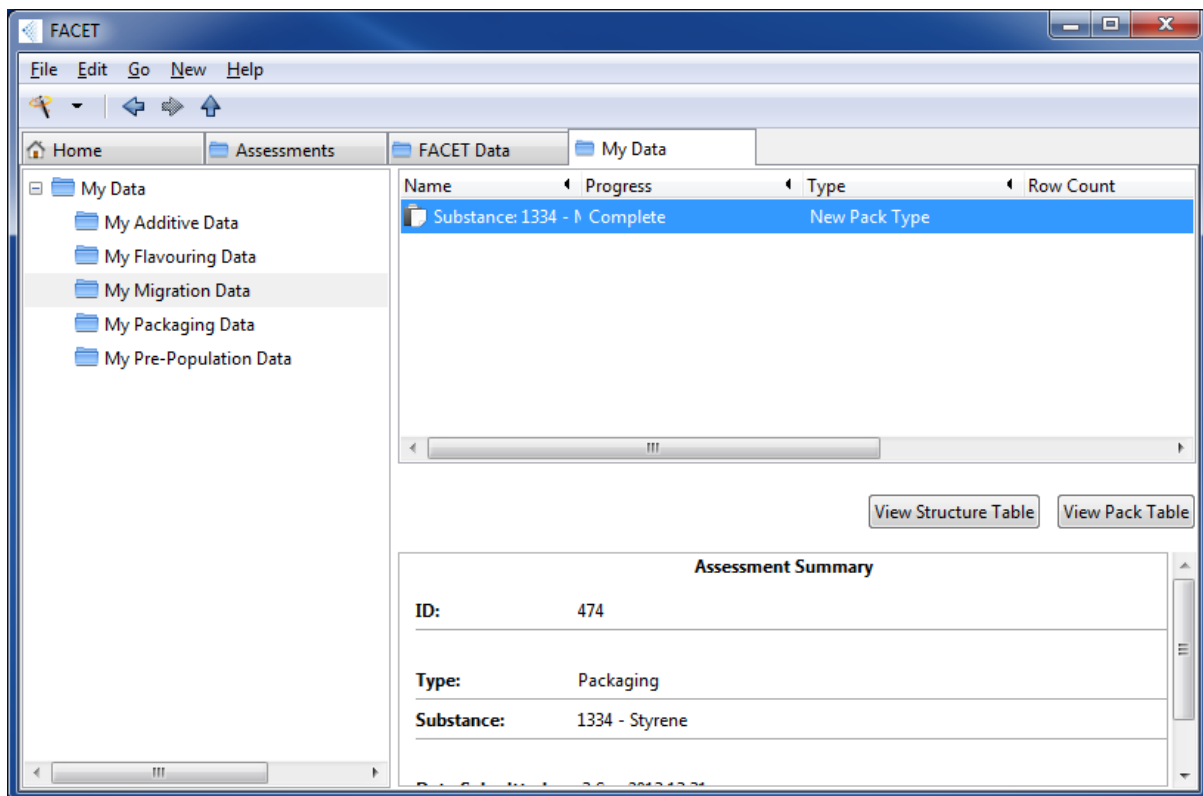


Figure 3-48: Assessment Complete

The full name of the table can be viewed by extending the “Name” field until the full name is visible. This is illustrated in Figure 3-49.

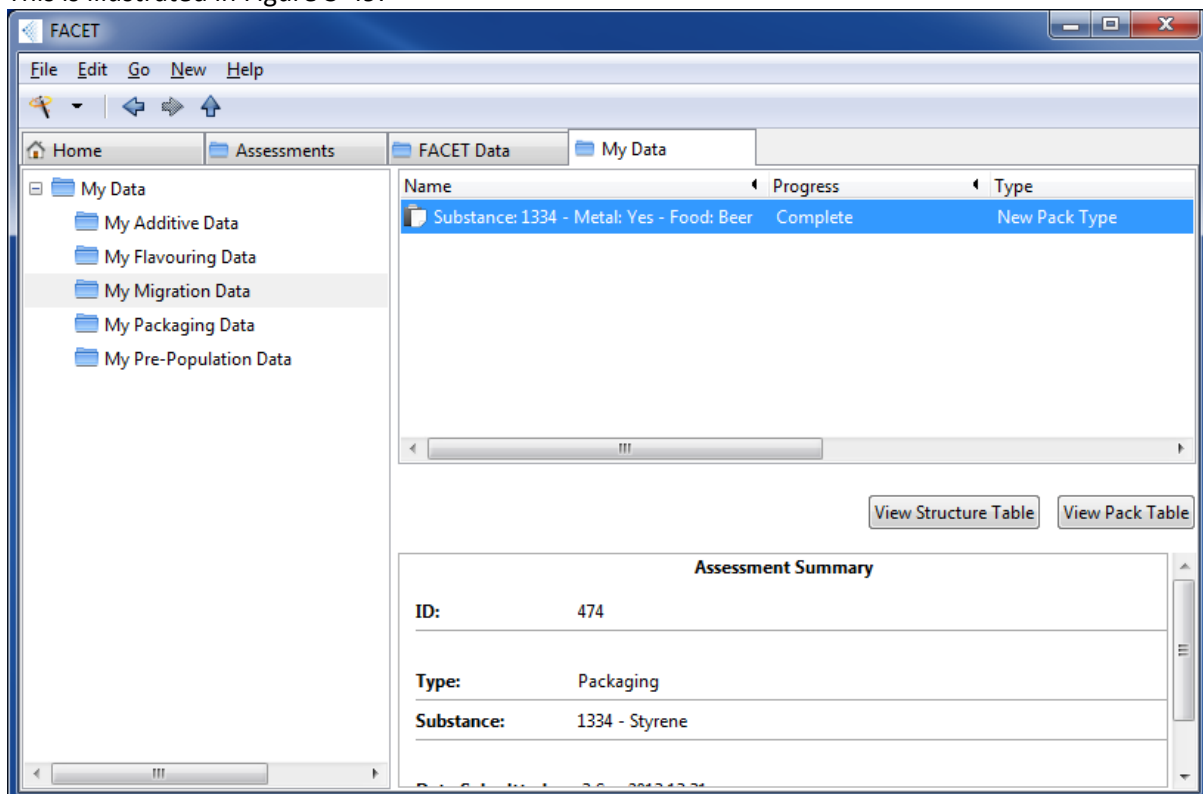


Figure 3-49: Viewing Full Table Name

The software does not allow the user to view the concentration data which is a result of the assessment. However, the concentration data is available to be used in a Packaging Assessment and is described visually in Figure 3-53 to Figure 3-70. It is possible however to view the “Structure Table” and “Pack Table” which are associated with the assessment above. This is possible by clicking the “View Structure Table” or “View Pack Table” options shown in Figure 3-50. Both options are illustrated in Figure 3-51 and Figure 3-52 respectively.

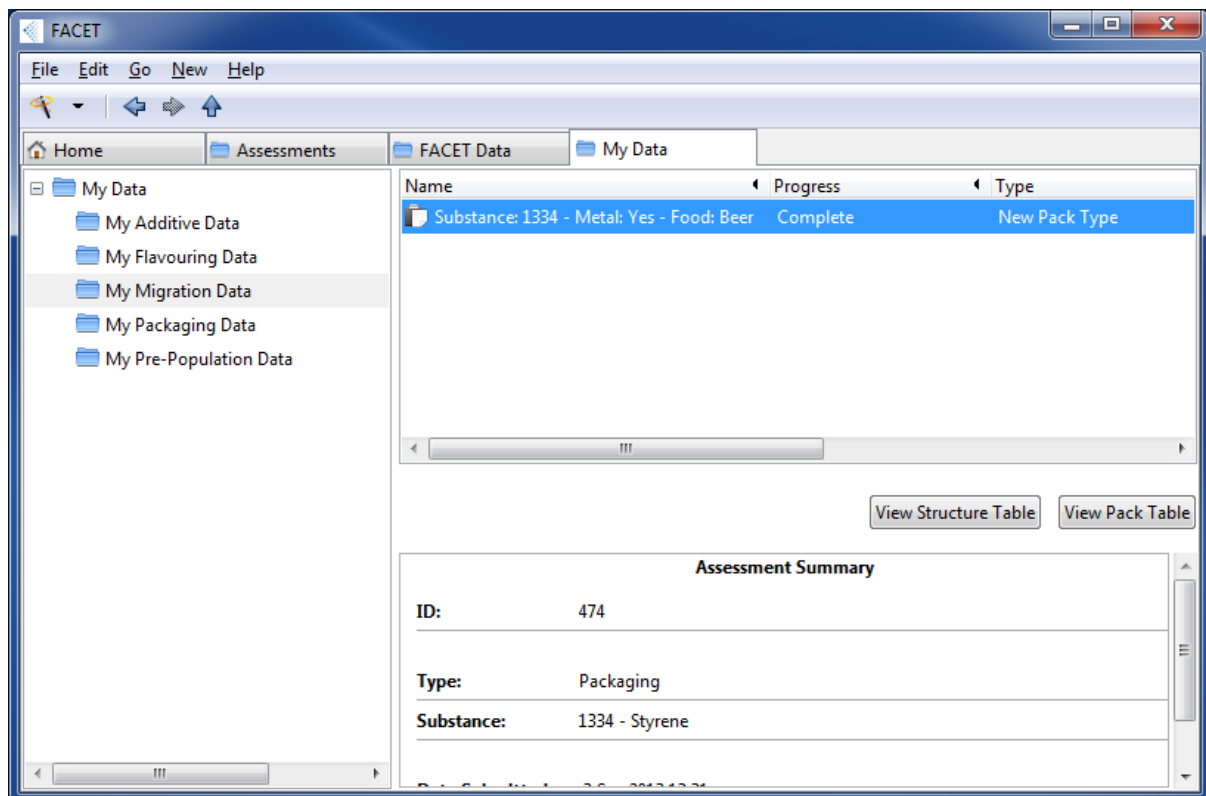


Figure 3-50: View Structure Table

[illegible]

Figure 3-51: Viewing Structure Table

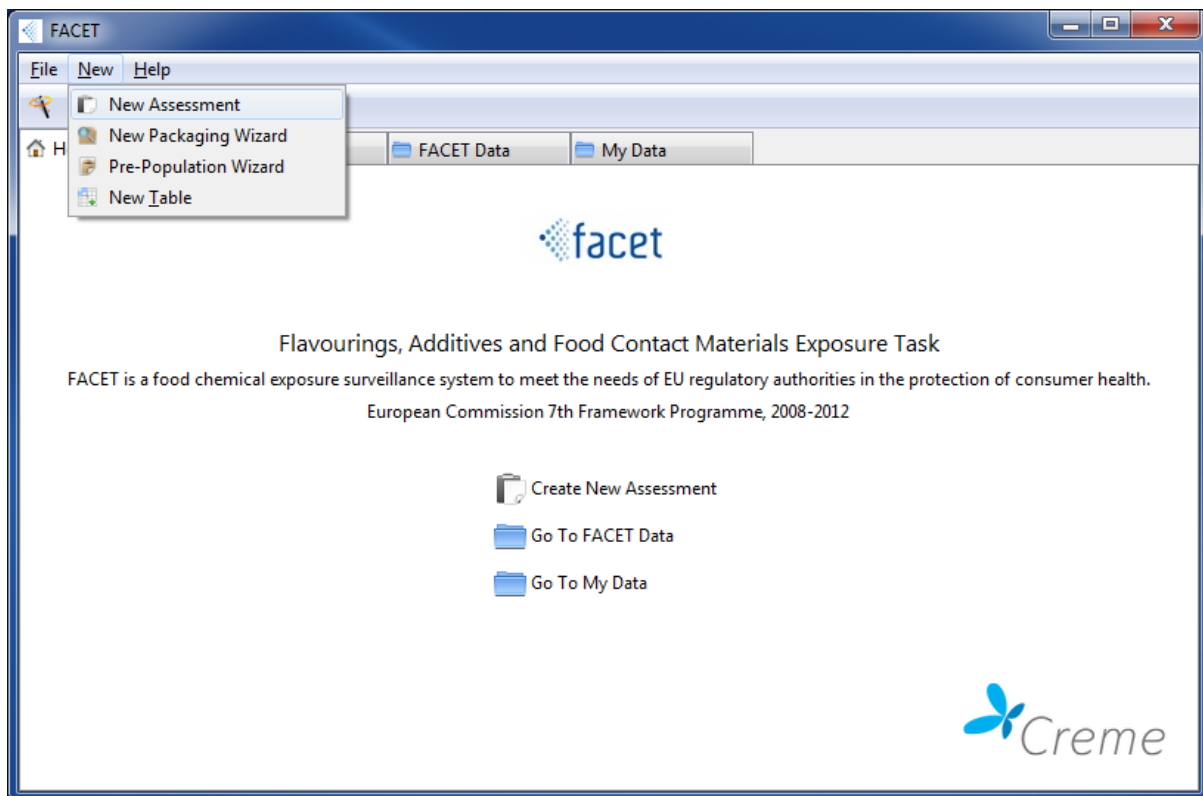


Figure 3-53: Running New Assessment

Next, the user selects “Packaging Assessment” as shown in Figure 3-54.

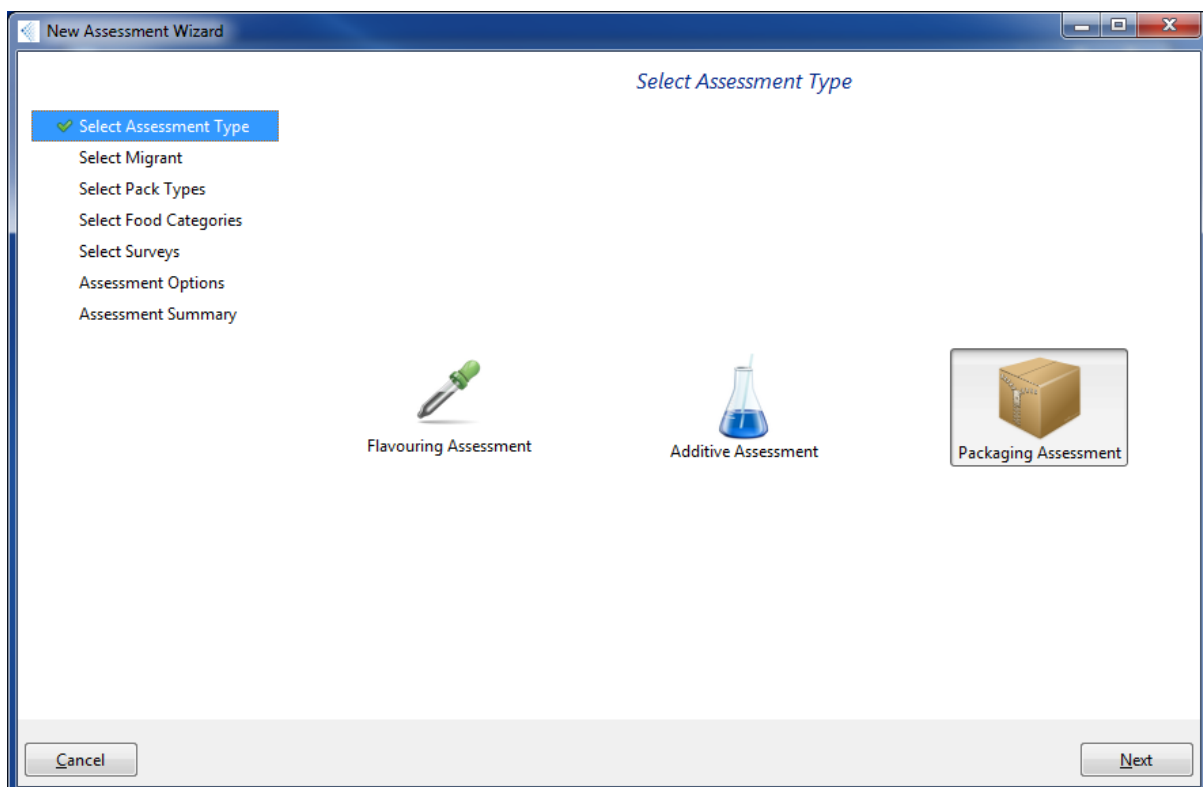


Figure 3-54: Select Packaging Assessment

New Assessment Wizard

Select Migrant

☒ Select Assessment Type
☒ **Select Migrant**
 Select Pack Types
 Select Food Categories
 Select Surveys
 Assessment Options
 Assessment Summary

☒ Use pre-installed FACET data.

Search

FACET ID Clear

| FACET ID | CAS Number | Chemical Name | Alternative Name |
|----------------------------|--------------|--|-------------------------|
| <input type="radio"/> 1084 | 0000080-05-7 | 2,2-Bis(4-hydroxyphenyl)propane | Bisphenol A |
| <input type="radio"/> 1334 | 0000100-42-5 | Styrene | Vinylbenzene |
| <input type="radio"/> 1617 | 0031570-04-4 | Phosphorous acid, tris(2,4-di-tert-butylphenyl)ester | tris(2,4-ditert-butylph |
| <input type="radio"/> 1976 | 0000077-90-7 | Tri-n-butyl acetyl citrate | Acetyl tributyl citrate |

No substances selected.

☒ Use my concentration data

Select Concentration Table

☒ My Data

☐ My Additive Data
☐ My Flavouring Data
☐ My Migration Data
☐ My Packaging Data

| Name | Date Created | Date Accessed |
|------|--------------|---------------|
|------|--------------|---------------|

☐ Use in combination with pre-installed FACET data

Cancel Previous Next

The table of interest is “Substance: 1334 – Metal: Yes – Food: Beer”. This is located in the “My Migration Data” folder as shown in Figure 3-56 and Figure 3-57.

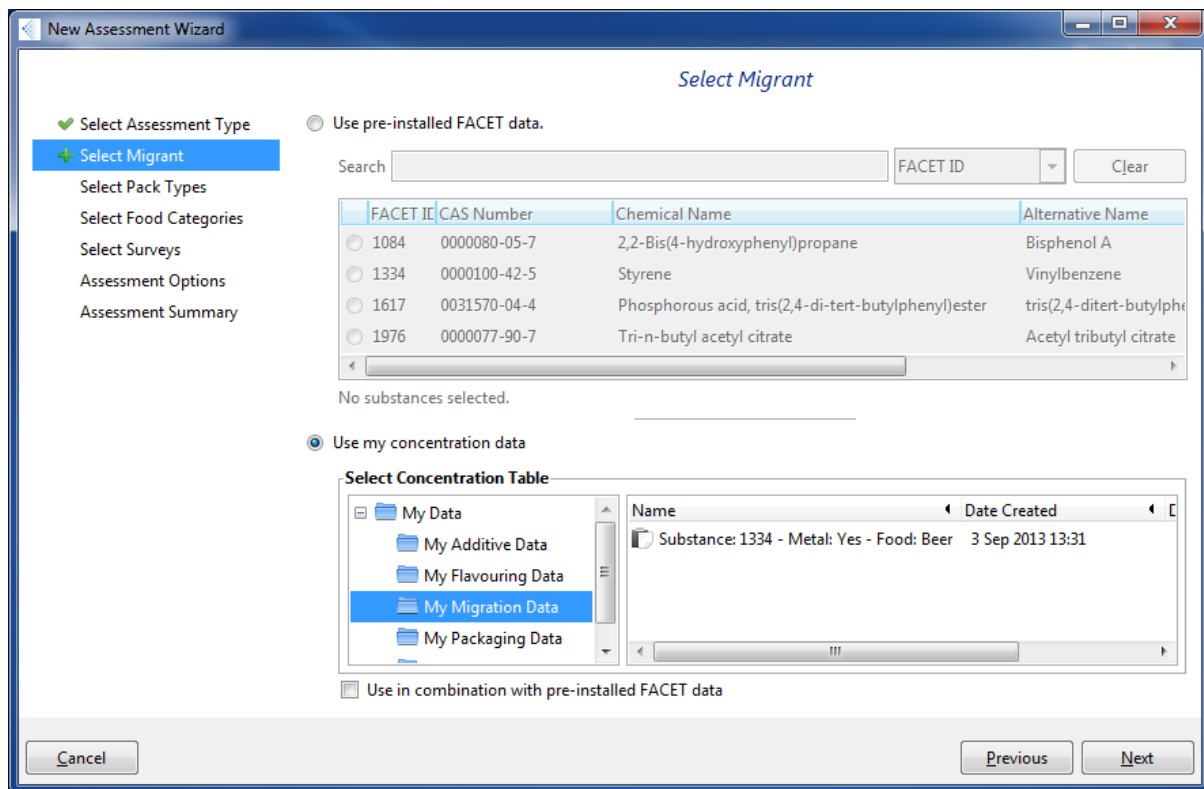


Figure 3-56: Selection of Appropriate Folder

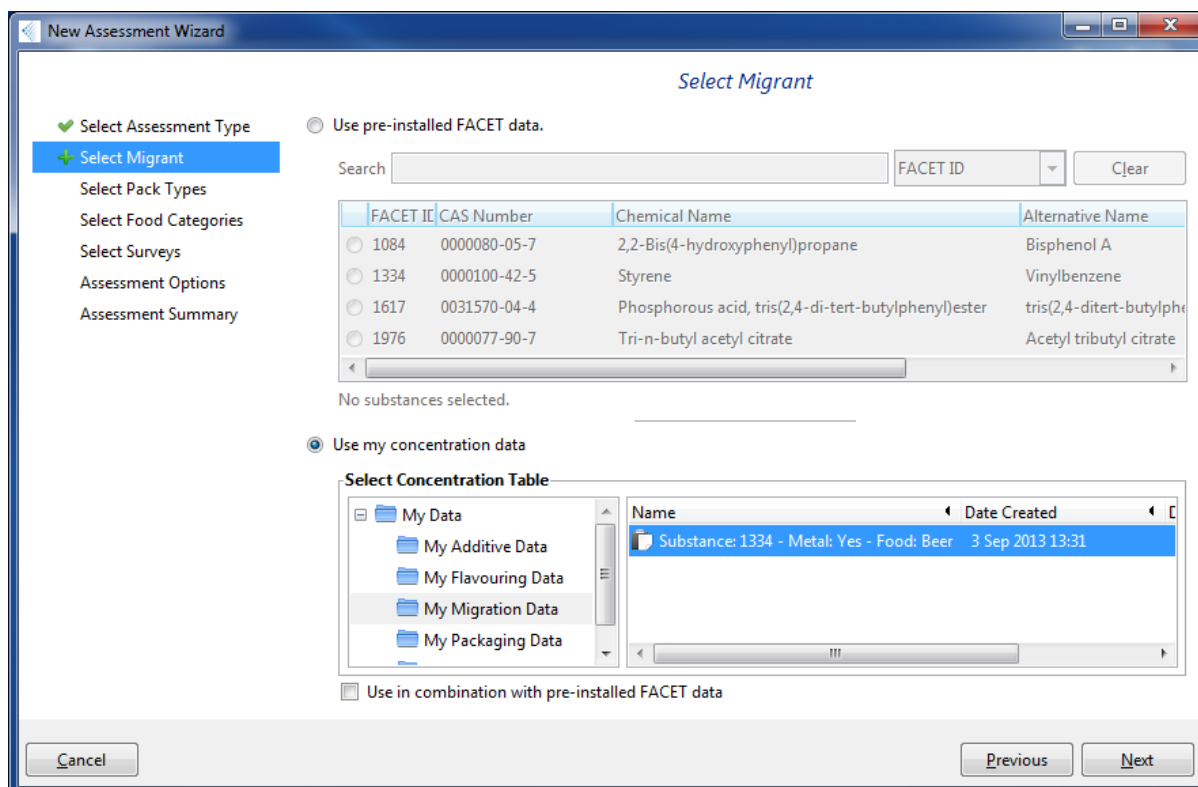


Figure 3-57: Selection of Appropriate Table

At this stage, the user selects the pack types and food categories that are of interest. In this example, we consider “All” pack types and the food category “P.15.1.1 Beer”. This is shown in Figure 3-58 and Figure 3-59.

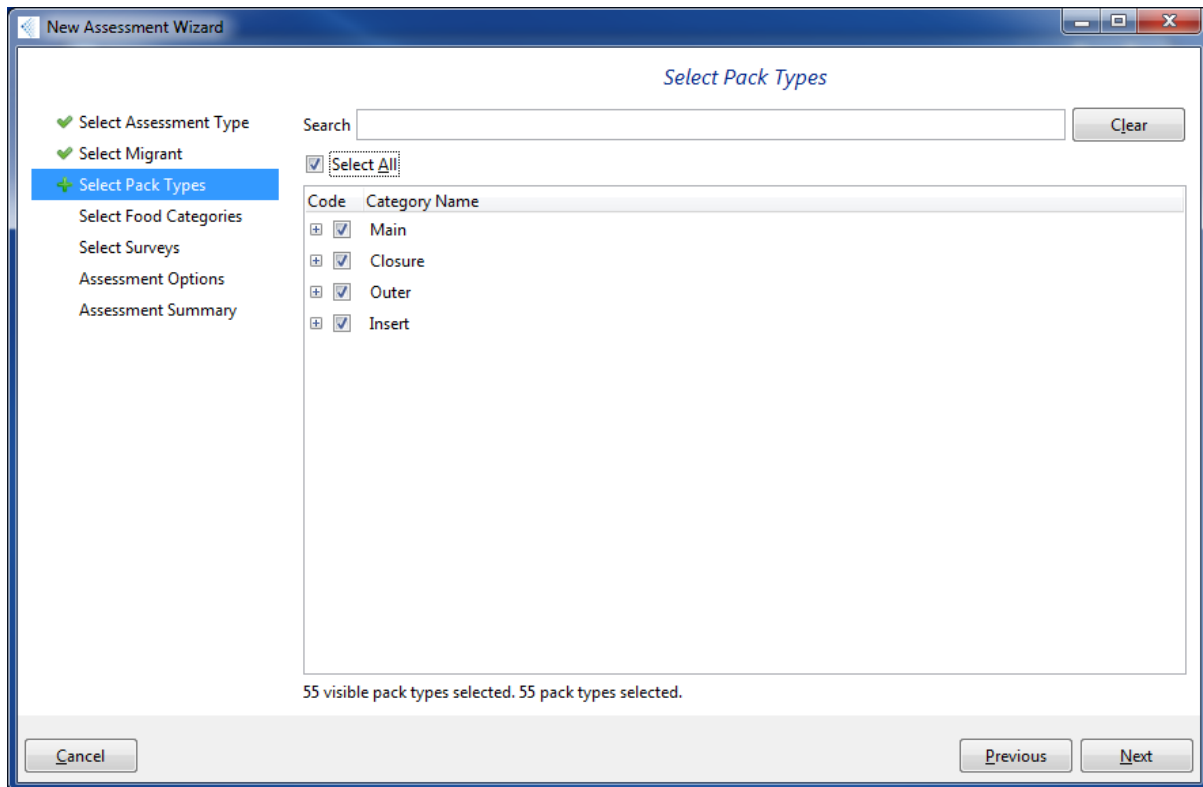


Figure 3-58: Select Pack Types

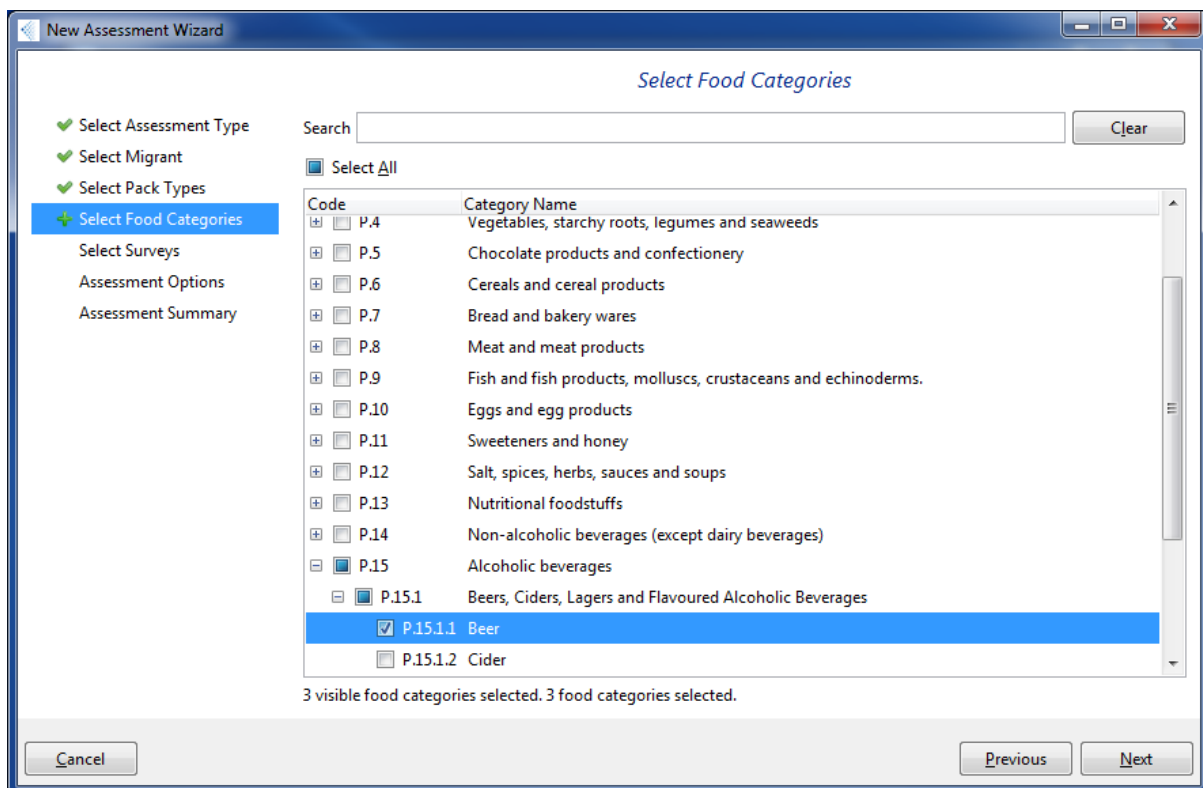


Figure 3-59: Select Food Categories

The appropriate survey is chosen (as shown in Figure 3-60).

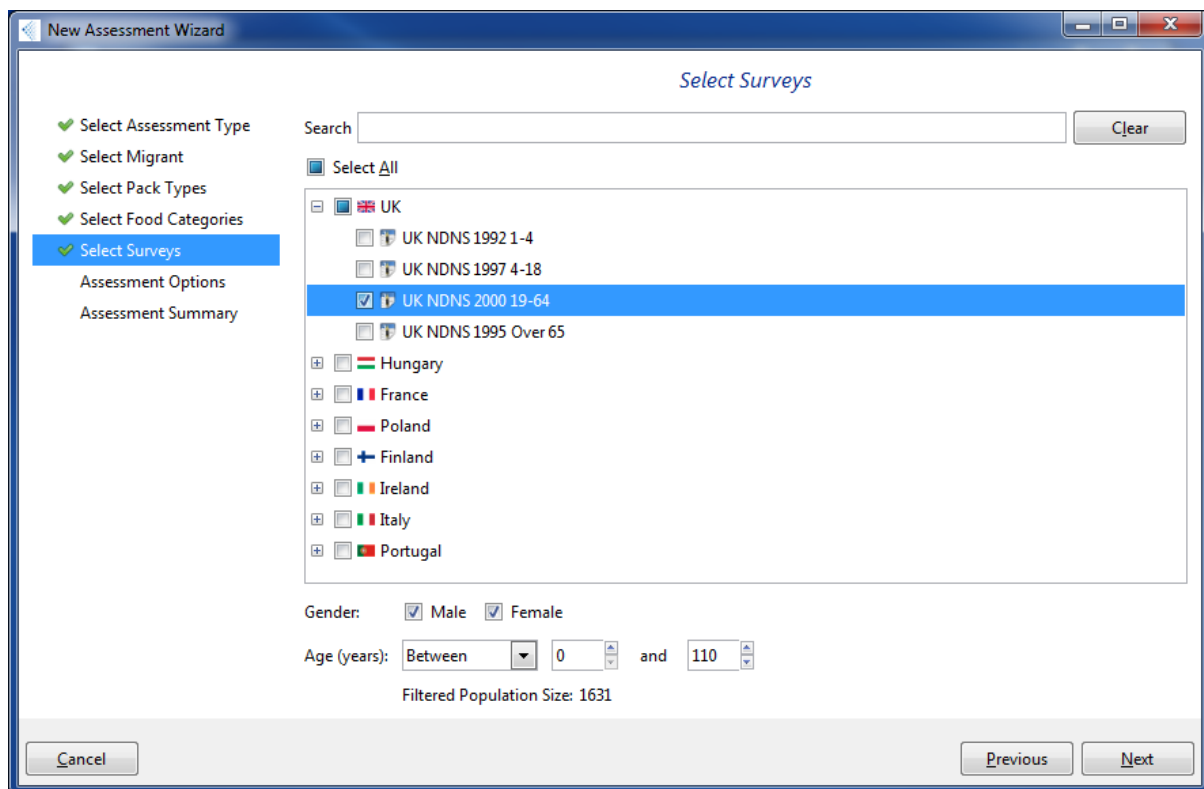


Figure 3-60: Select Survey

The user then has the opportunity to select various Assessment Options. This step is illustrated in Figure 3-61 to Figure 3-63.

New Assessment Wizard

Assessment Options

- ✓ Select Assessment Type
- ✓ Select Migrant
- ✓ Select Pack Types
- ✓ Select Food Categories
- ✓ Select Surveys
- Assessment Options**
- Assessment Summary

Assessment location: /Assessments/My Assessments/New Assessment Choose

Description:

Assess using: ☐ With consumer loyalty ☒ Without consumer loyalty

☐ Use SetOff

Exclude homegrown/homemade foods: ☒

Exclude restaurant/canteen foods: ☒

⊕ Advanced Options

Cancel Previous Next

Figure 3-61: Assessment Options

In the advanced options, the user can select to “Include lower tier results” as well as adding to the default list of percentiles used. For our example, we leave the “Include lower tier results” box unticked and deselect the P25 percentile.

New Assessment Wizard

Assessment Options

- ✓ Select Assessment Type
- ✓ Select Migrant
- ✓ Select Pack Types
- ✓ Select Food Categories
- ✓ Select Surveys
- Assessment Options**
- Assessment Summary

Assessment location: /Assessments/My Assessments/Substance: 1334 - Survey: UK_19-64 - Metal: Yes - Food:

Description:

Assess using: ☐ With consumer loyalty ☒ Without consumer loyalty
☐ Use SetOff

Exclude homegrown/homemade foods: ☒

Exclude restaurant/canteen foods: ☒

☐ Advanced Options

Include lowest tier results: ☐

Minimum simulated population size: 1000

Exposure statistics:

| | | | |
|--|--|---|---|
| <input checked="" type="checkbox"/> Mean | <input checked="" type="checkbox"/> Standard Deviation | <input checked="" type="checkbox"/> Minimum | <input checked="" type="checkbox"/> Maximum |
| <input type="checkbox"/> P25 | <input type="checkbox"/> P50 | <input type="checkbox"/> P75 | <input checked="" type="checkbox"/> P90 |
| <input checked="" type="checkbox"/> P95 | <input type="checkbox"/> P97.5 | <input type="checkbox"/> P99 | <input type="checkbox"/> P99.9 |

Other percentiles:

Figure 3-62: Name Assessment

New Assessment Wizard

Assessment Options

- ✓ Select Assessment Type
- ✓ Select Migrant
- ✓ Select Pack Types
- ✓ Select Food Categories
- ✓ Select Surveys
- Assessment Options**
- Assessment Summary

Assessment location: /Assessments/My Assessments/Substance: 1334 - Survey: UK_19-64 - Metal: Yes - Food:

Description:

Assess using: ☐ With consumer loyalty ☒ Without consumer loyalty
☐ Use SetOff

Exclude homegrown/homemade foods: ☒

Exclude restaurant/canteen foods: ☒

☐ Advanced Options

Include lowest tier results: ☐

Minimum simulated population size: 1000

Exposure statistics:

| | | | |
|--|--|---|---|
| <input checked="" type="checkbox"/> Mean | <input checked="" type="checkbox"/> Standard Deviation | <input checked="" type="checkbox"/> Minimum | <input checked="" type="checkbox"/> Maximum |
| <input type="checkbox"/> P25 | <input type="checkbox"/> P50 | <input type="checkbox"/> P75 | <input checked="" type="checkbox"/> P90 |
| <input checked="" type="checkbox"/> P95 | <input type="checkbox"/> P97.5 | <input type="checkbox"/> P99 | <input type="checkbox"/> P99.9 |

Other percentiles:

Figure 3-63: Advanced Options

At this stage, the Assessment is summarised and ready to be Run. This is illustrated in Figure 3-64 and Figure 3-65.

The screenshot shows the 'New Assessment Wizard' window, specifically the 'Assessment Summary' step. On the left, a list of steps is shown with green checkmarks, and 'Assessment Summary' is highlighted in blue. The main area displays the following information:

- Type:** Migrant
- Substance code:** 1334
- Substance name:** (empty)
- Concentration data:** Use my concentration data
/Data/My Data/My Migration Data/Substance: 1334 - Metal: Yes - Food: Be
- Food categories:** A table with two columns: Code and Category Name.

| Code | Category Name |
|----------|---|
| P.15 | Alcoholic beverages |
| P.15.1 | Beers, Ciders, Lagers and Flavoured Alcoholic Beverages |
| P.15.1.1 | Beer |
- Survey(s):** UK NDNS 2000 19-64
- Population filter:** Gender: Male, Female
Age: between 0 and 110
- Name:** Substance: 1334 - Survey: UK_19-64 - Metal: Yes - Foods: Beer - SetOff : No

Below the summary, there is a checkbox (checked) and a text box stating: "I understand that running this assessment means that my computer will be busy for between 5 and 20 minutes per survey. (This calculation time depends on several factors, including the computer's processing ability, the number of food categories selected and the simulated population size.)"

At the bottom, there are three buttons: 'Cancel', 'Previous', and 'Run'.

Figure 3-64: Assessment Summary

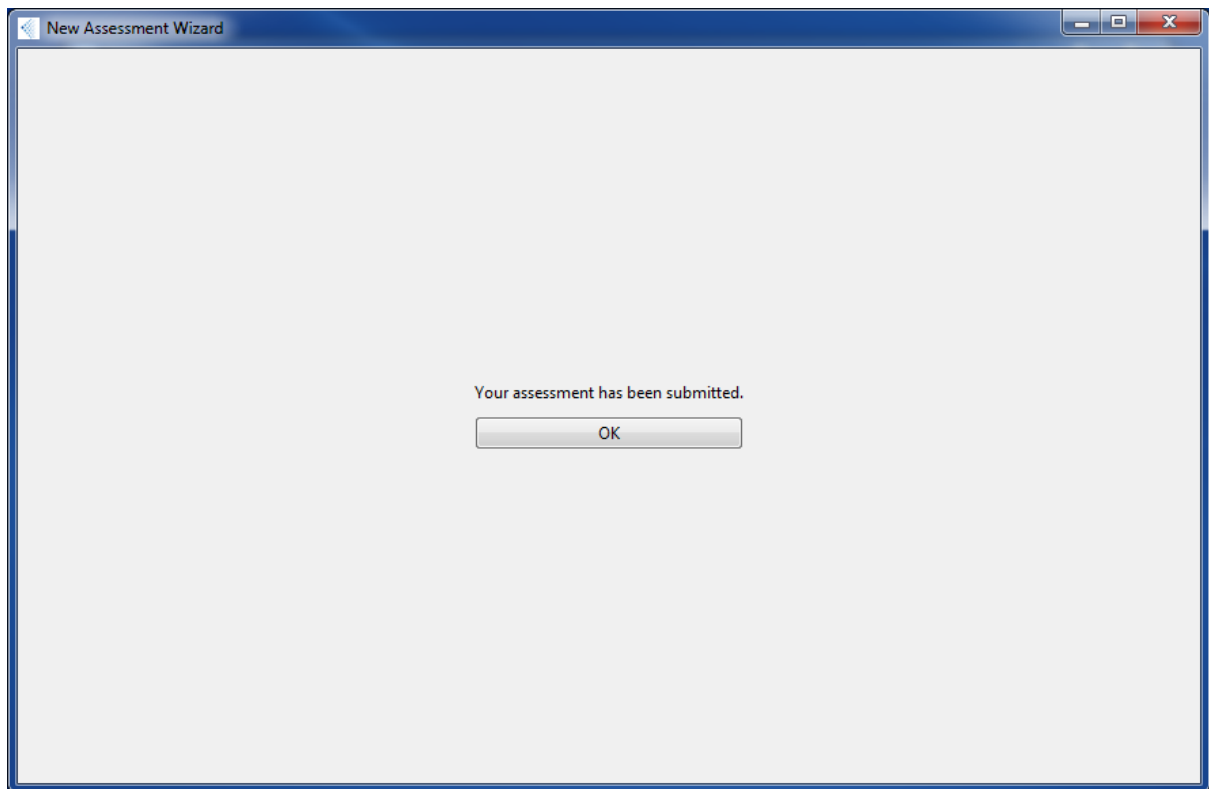


Figure 3-65: Assessment Submission Confirmation

Once the assessment is submitted, it begins by “Initialising” before moving into the “Progress” stage. At the end, the user is informed that the assessment has completed (i.e. “Complete”). This is illustrated in Figure 3-66 to Figure 3-68.

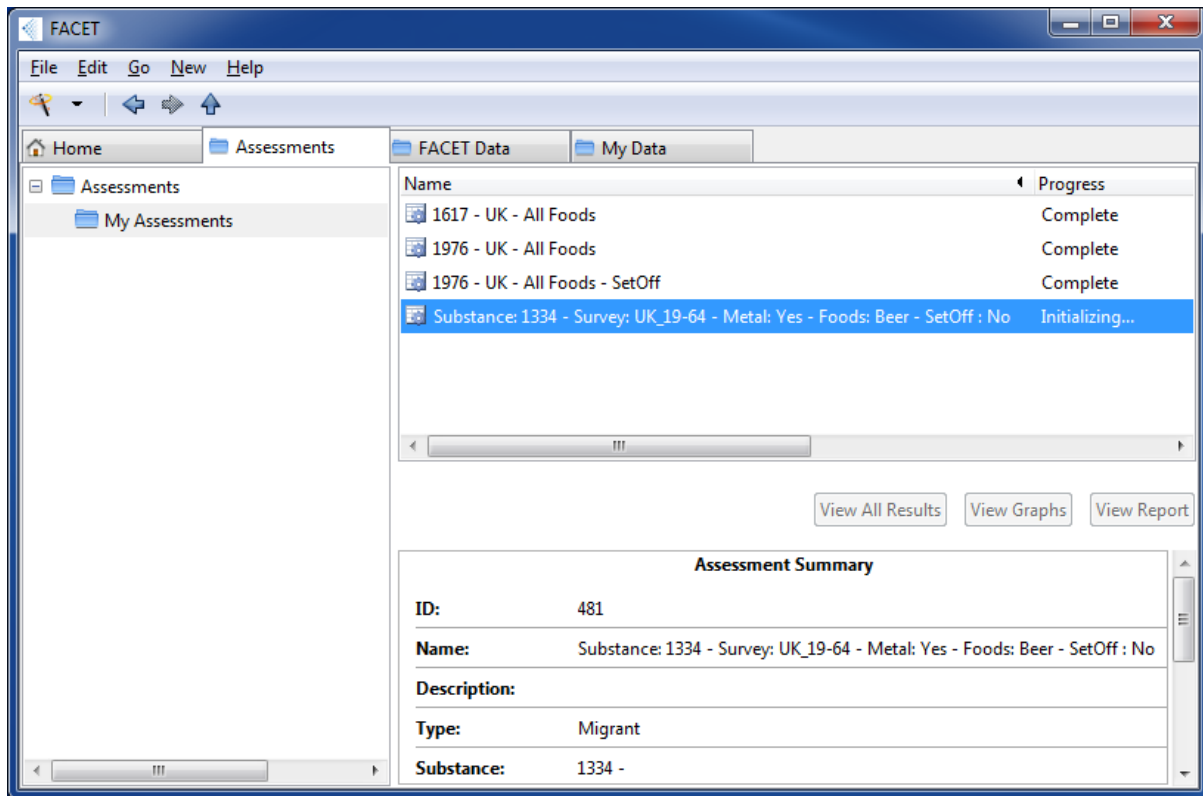


Figure 3-66: Assessment Initialising

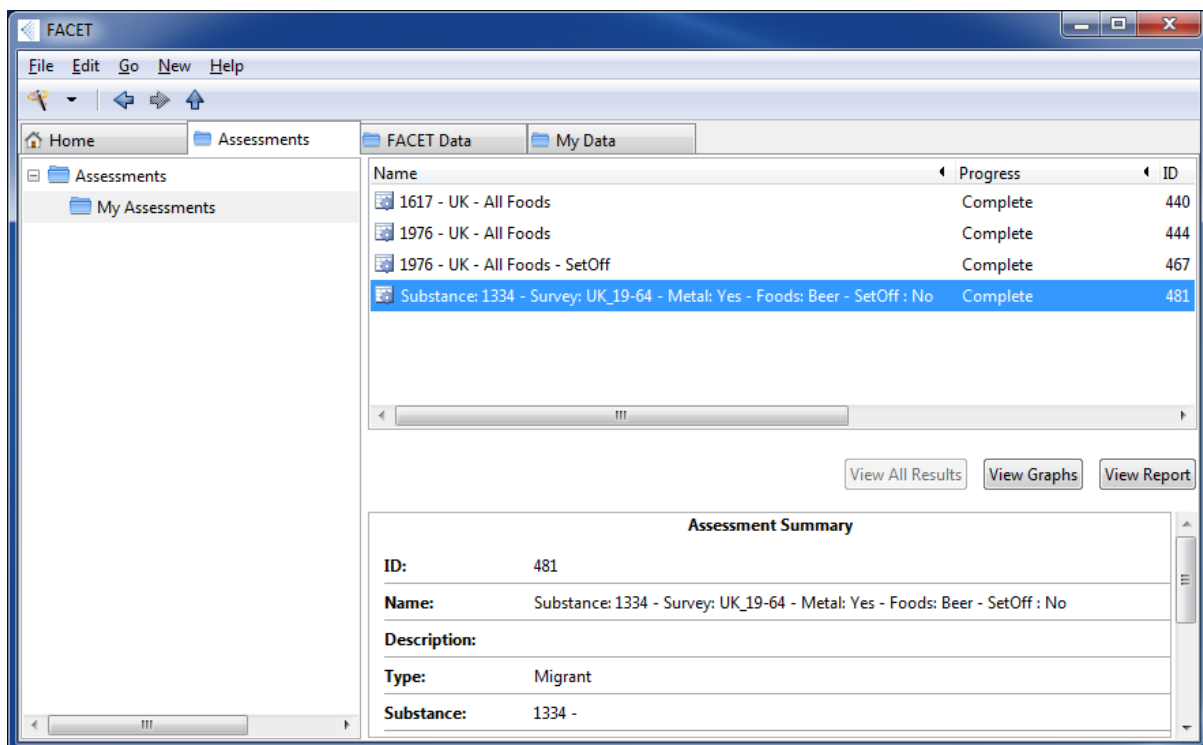


Figure 3-67: Assessment Complete

Following completion, the user has the option to view the results of the assessment. A similar approach to viewing the data is taken as in earlier parts of the manual. This is illustrated in Figure 3-68 to Figure 3-70.

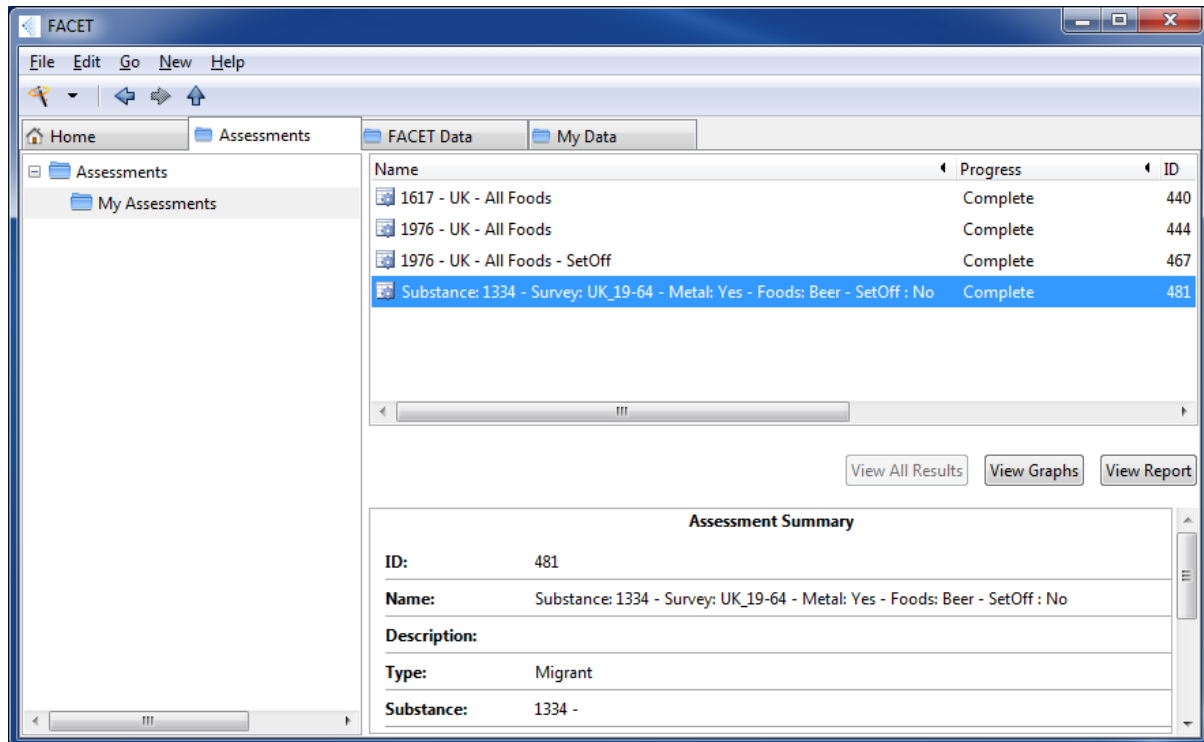


Figure 3-68: View Graphs

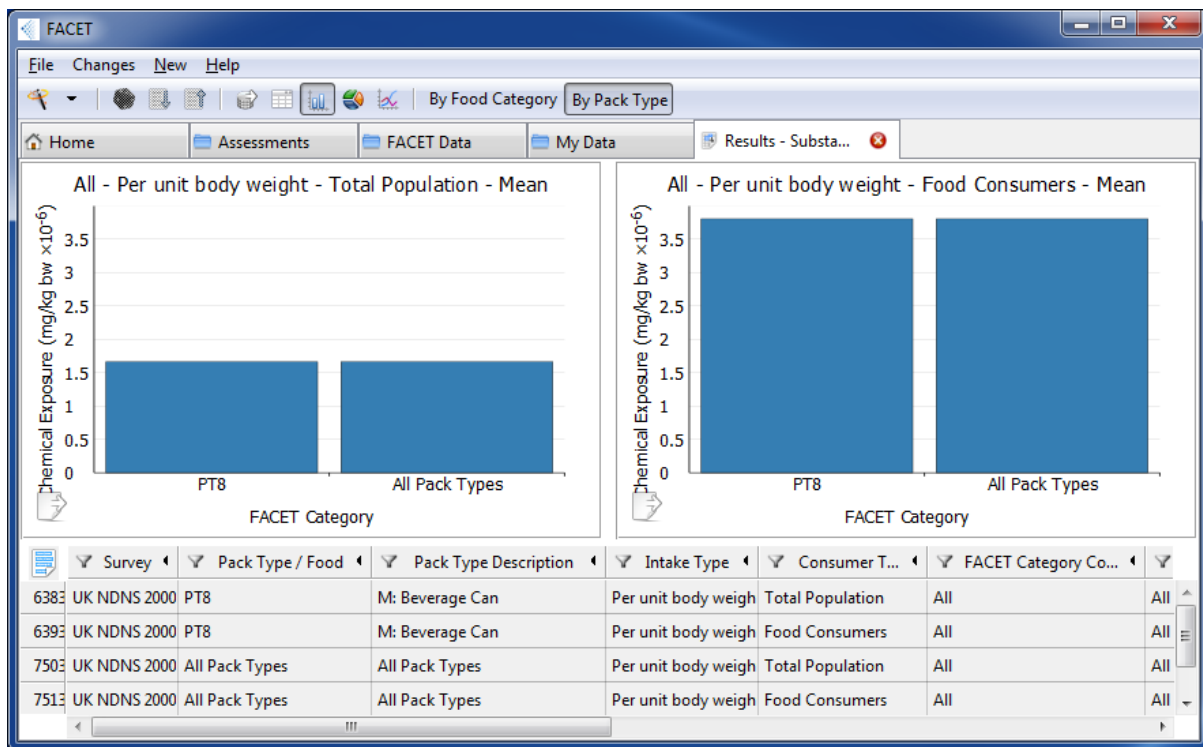


Figure 3-69: Graphs, by Pack Type

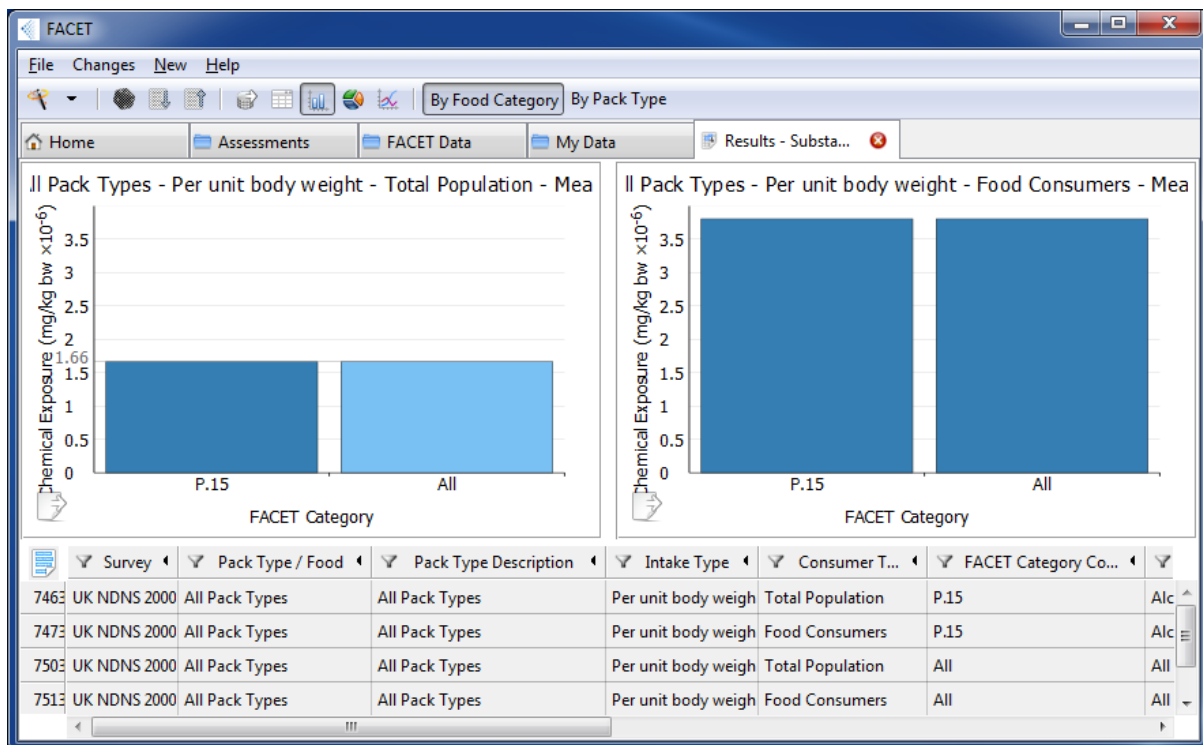


Figure 3-70: Graphs by Food Category

3.3.2 Using the New Packaging Wizard for a Substance in a Non-Metal Pack Type

As in the case of a substance in a metal pack, described in Section 3.3.1, a similar approach can be taken for substance in non-metal pack types. We consider the substance styrene (Facet Id = 1334) in this example. The earlier steps in the assessment are illustrated in Figure 3-71 to Figure 3-76.

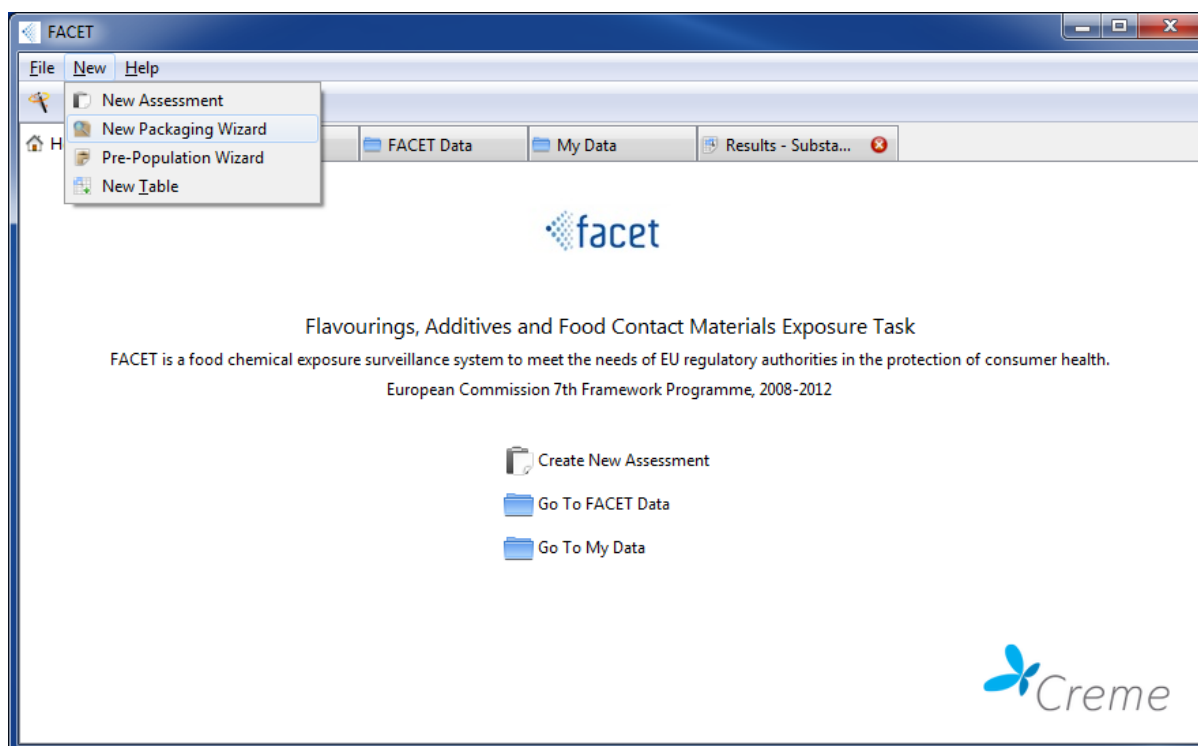


Figure 3-71: Select New Packaging Wizard

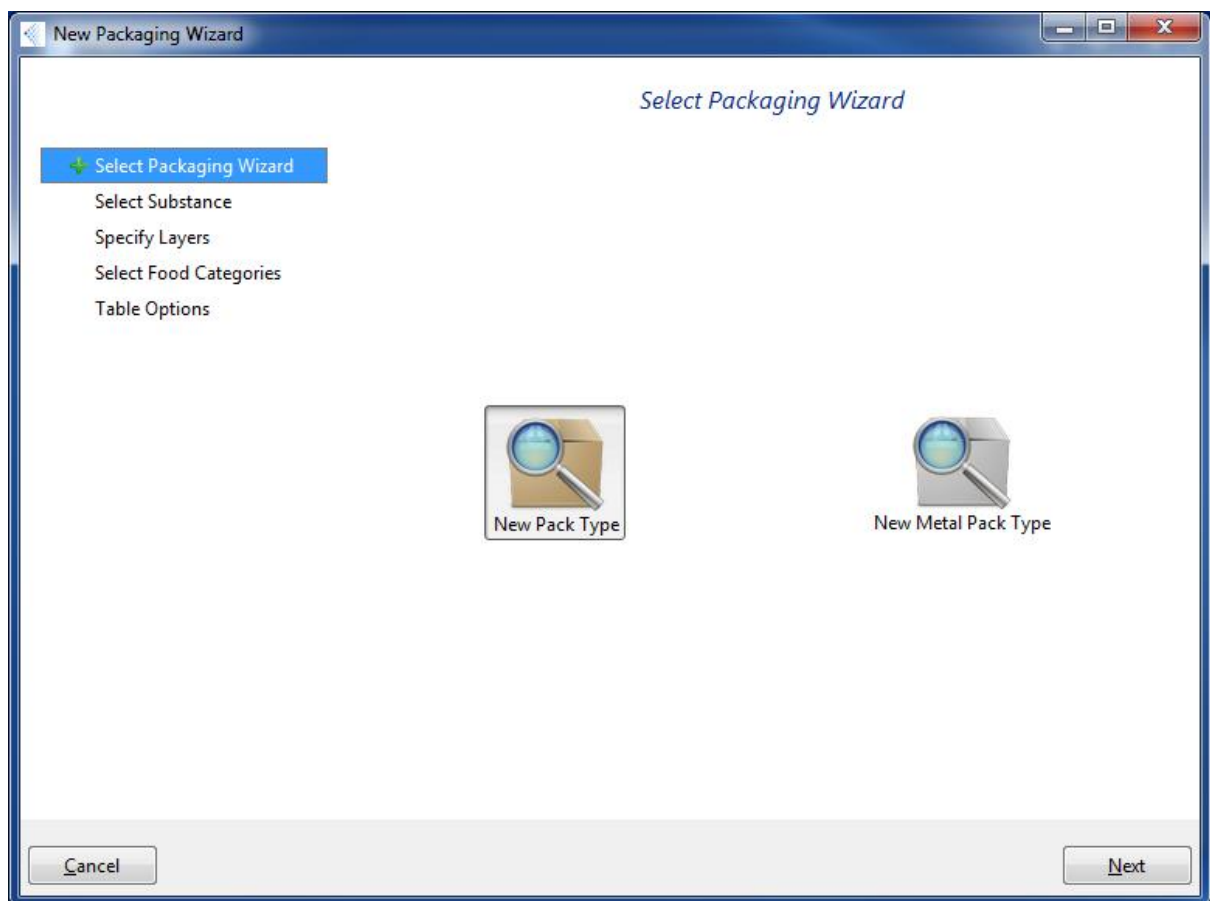


Figure 3-72: Select New Pack Type

New Packaging Wizard

Select Substance

- ✓ Select Packaging Wizard
- ✓ Select Substance
- Specify Layers
- Select Food Categories
- Table Options

☐ New Substance

Substance name:

Log(P):

Molecular Weight: mol

☒ Existing Substance

Search

| FACET Id | CAS Number | Chemical Name | Alternative Name | Molecular Formula | Molecular Weight |
|---------------------------------------|--------------|---------------|------------------|-------------------|------------------|
| <input checked="" type="radio"/> 1334 | 0000100-4... | Styrene | Vinylbenzene | C8H8 | 104 |

Styrene

Figure 3-73: Select Substance

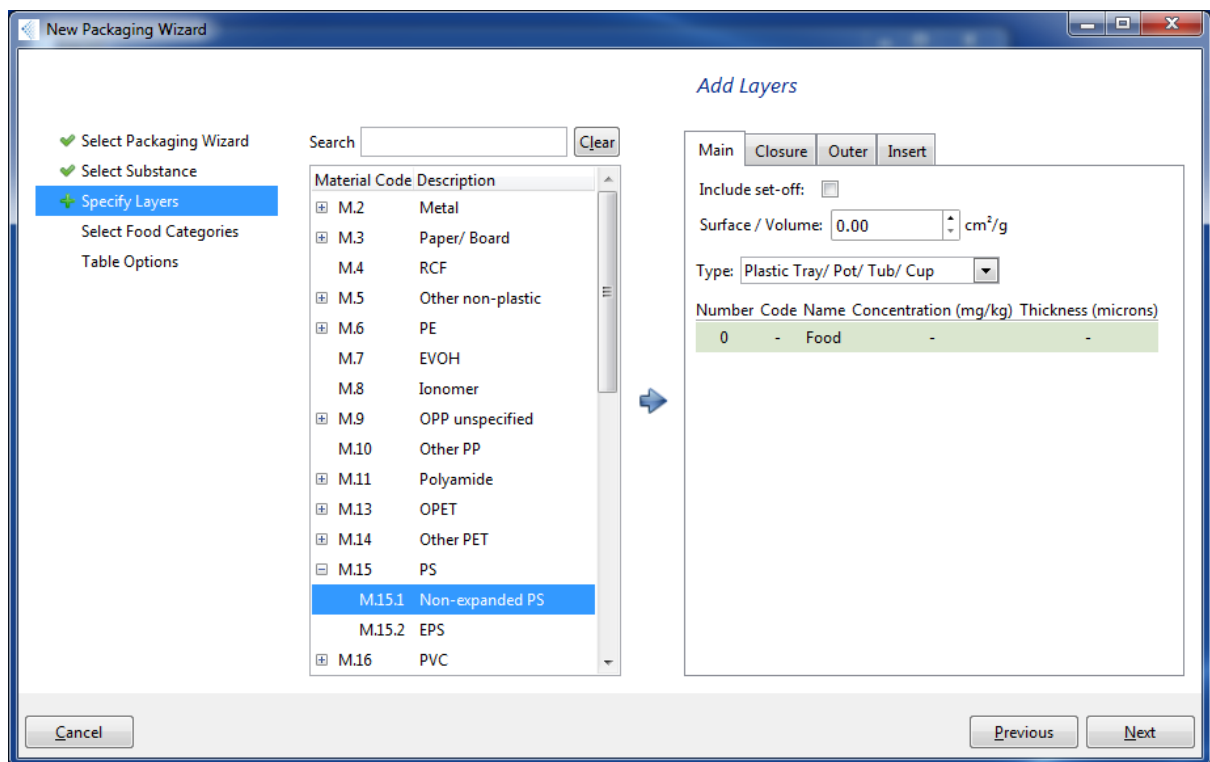


Figure 3-74: Select S/V ratio and Material Code

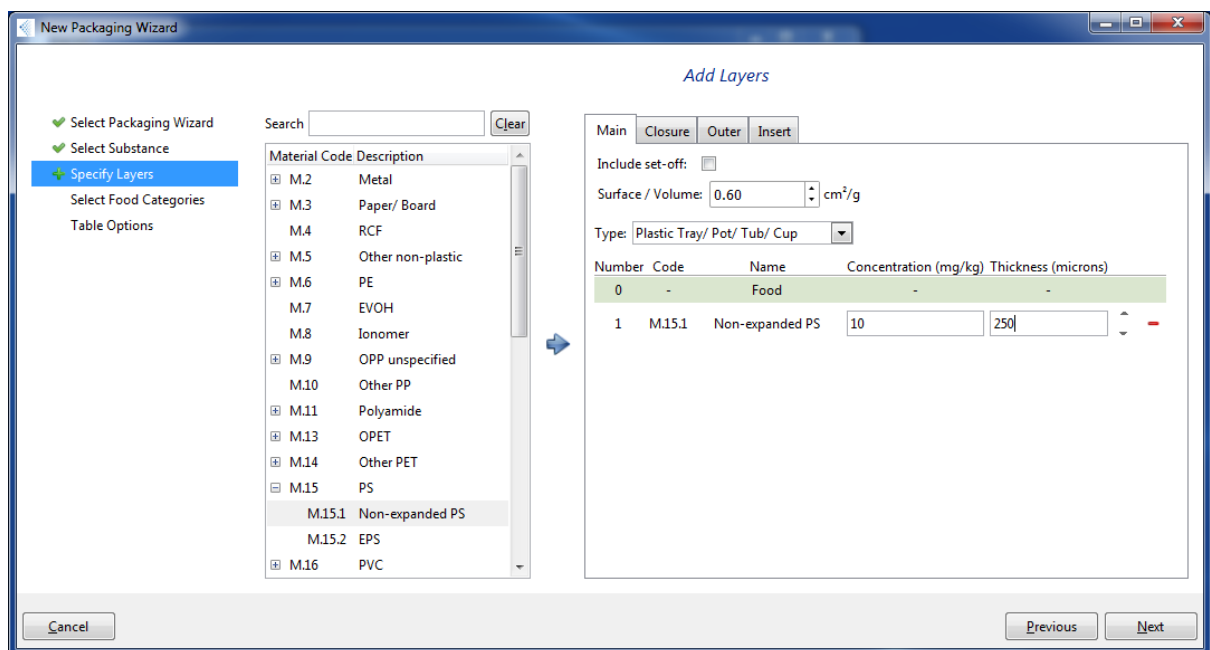


Figure 3-75: Select Concentration and Thickness

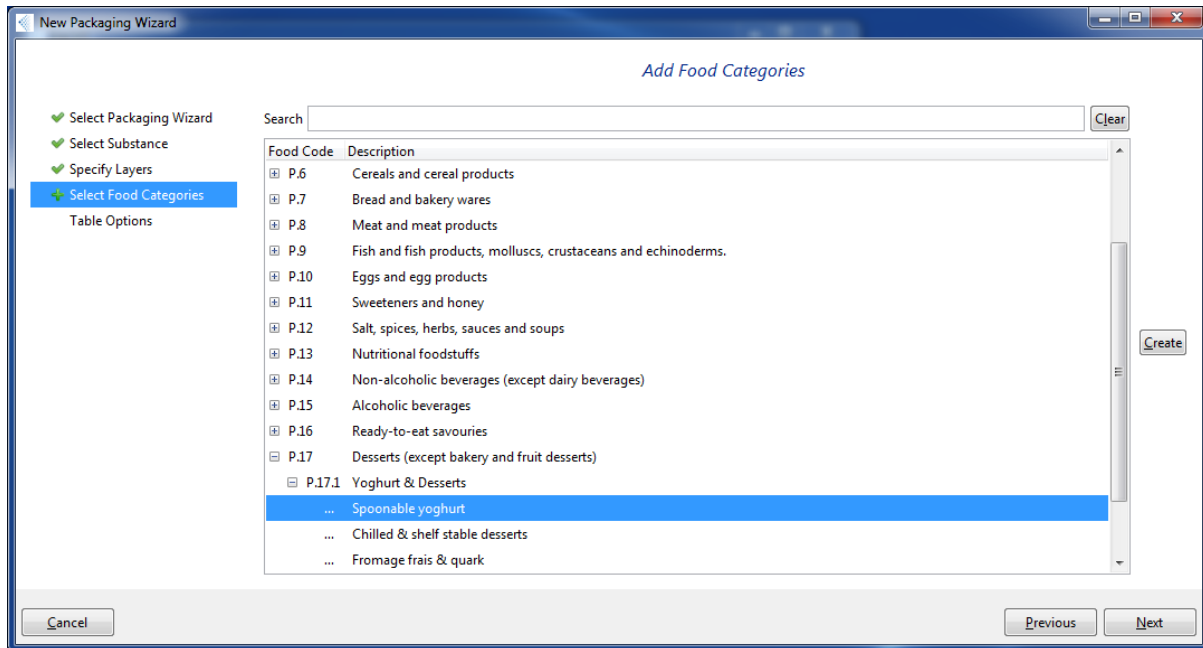


Figure 3-76: Select Food Categories

Once the Pack Types and Food Categories have been selected, the user needs to select the “Pack size” as well as the Time and Temperature regimes of interest. This is shown in Figure 3-77.

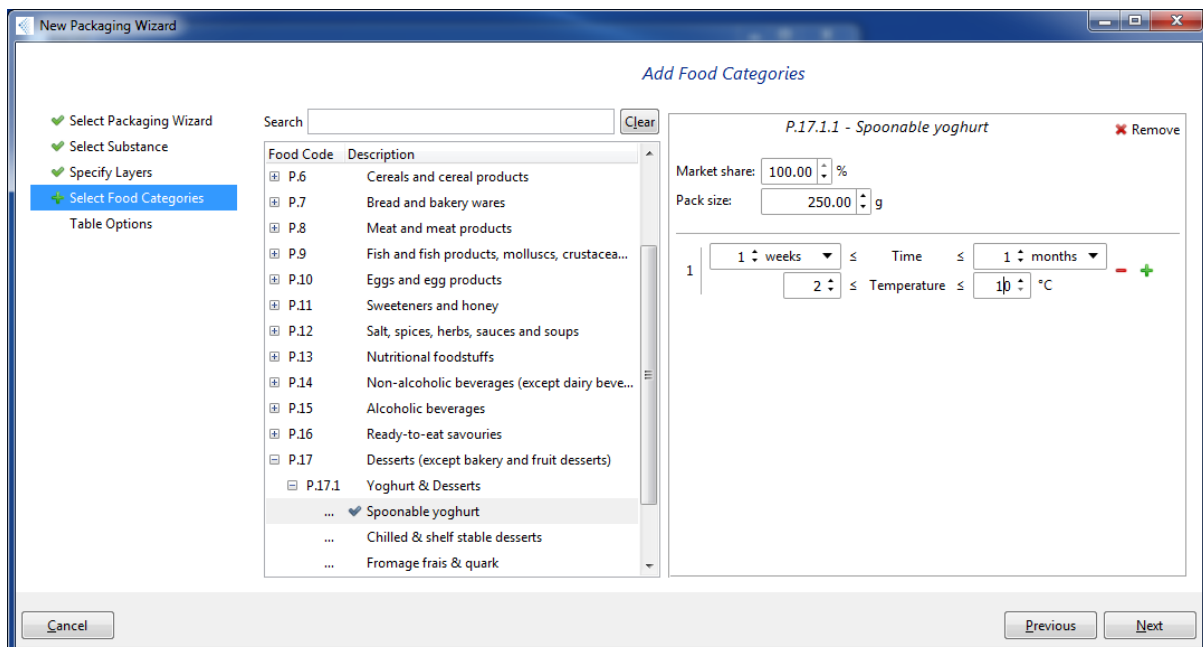


Figure 3-77: Selecting Time/temperature Regimes

The assessment is now ready to run. Before that a Table Name is given to the assessment as a reference to the details of the assessment and for easier access later. This is shown in Figure 3-78 and Figure 3-79.

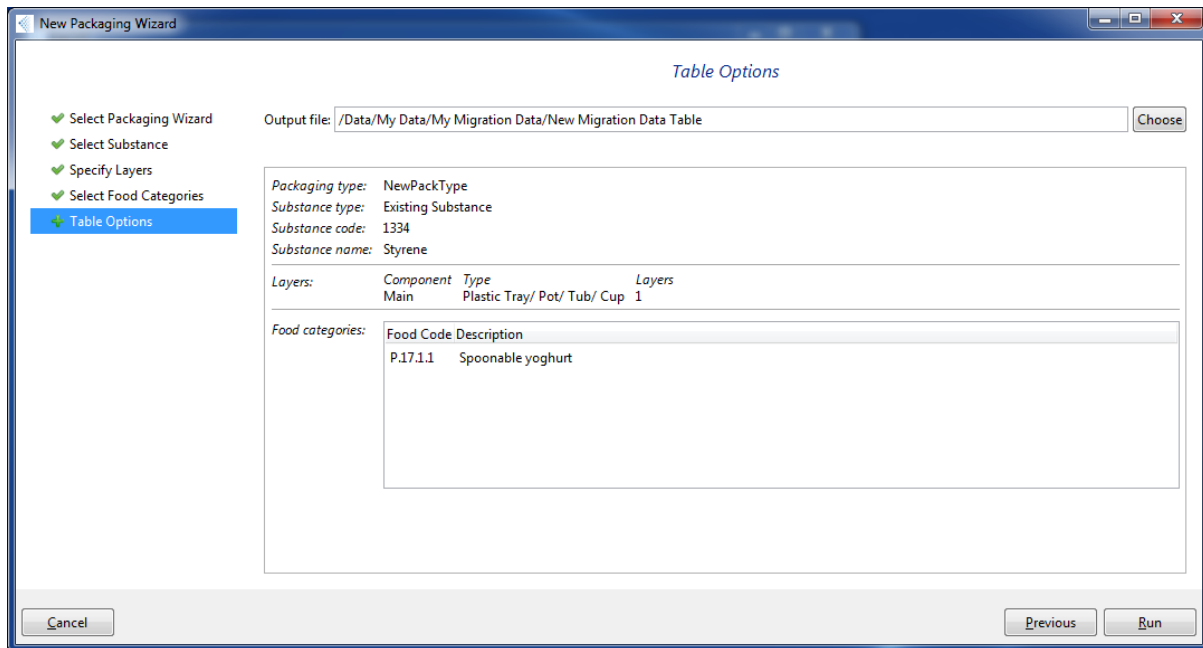


Figure 3-78: Table Options

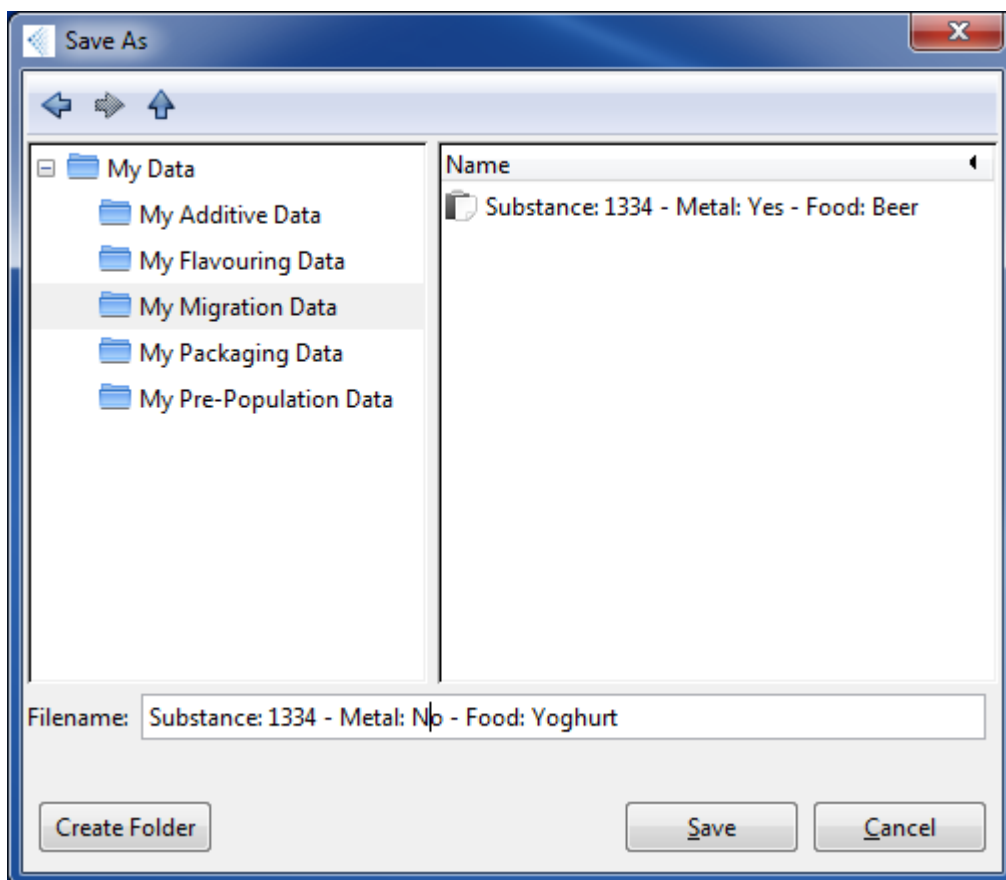


Figure 3-79: Naming Assessment

Now the assessment can be run as shown in Figure 3-80.

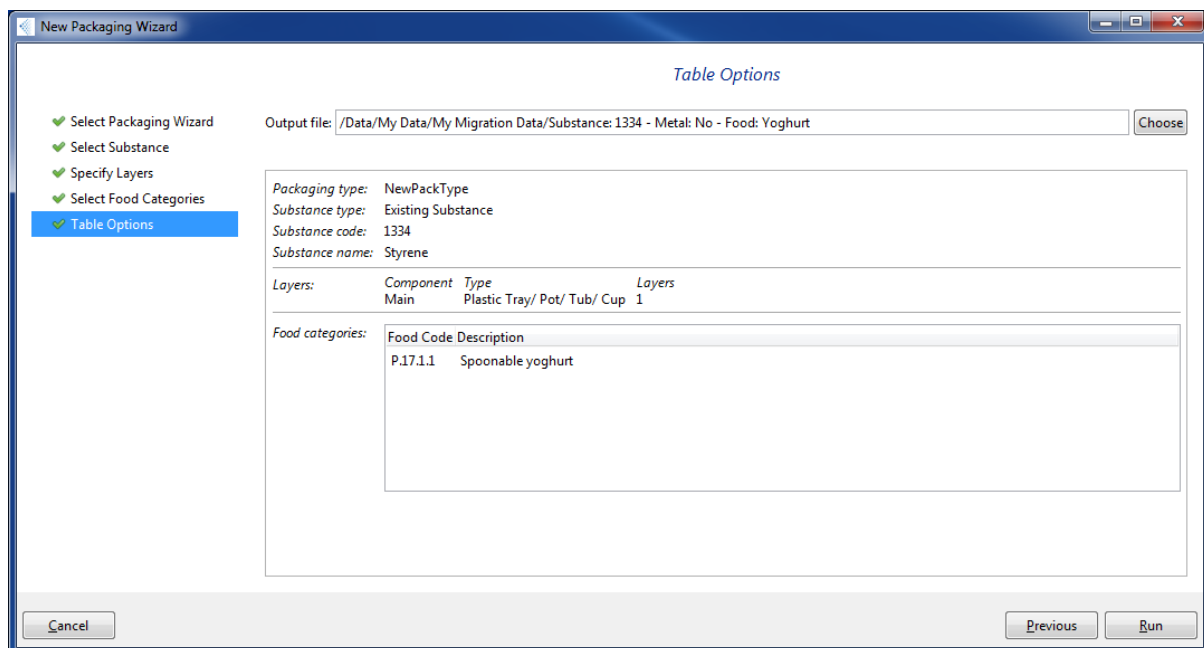


Figure 3-80: Table Options

Upon completion the user is informed that the assessment has come to an end. This is shown in Figure 3-81.

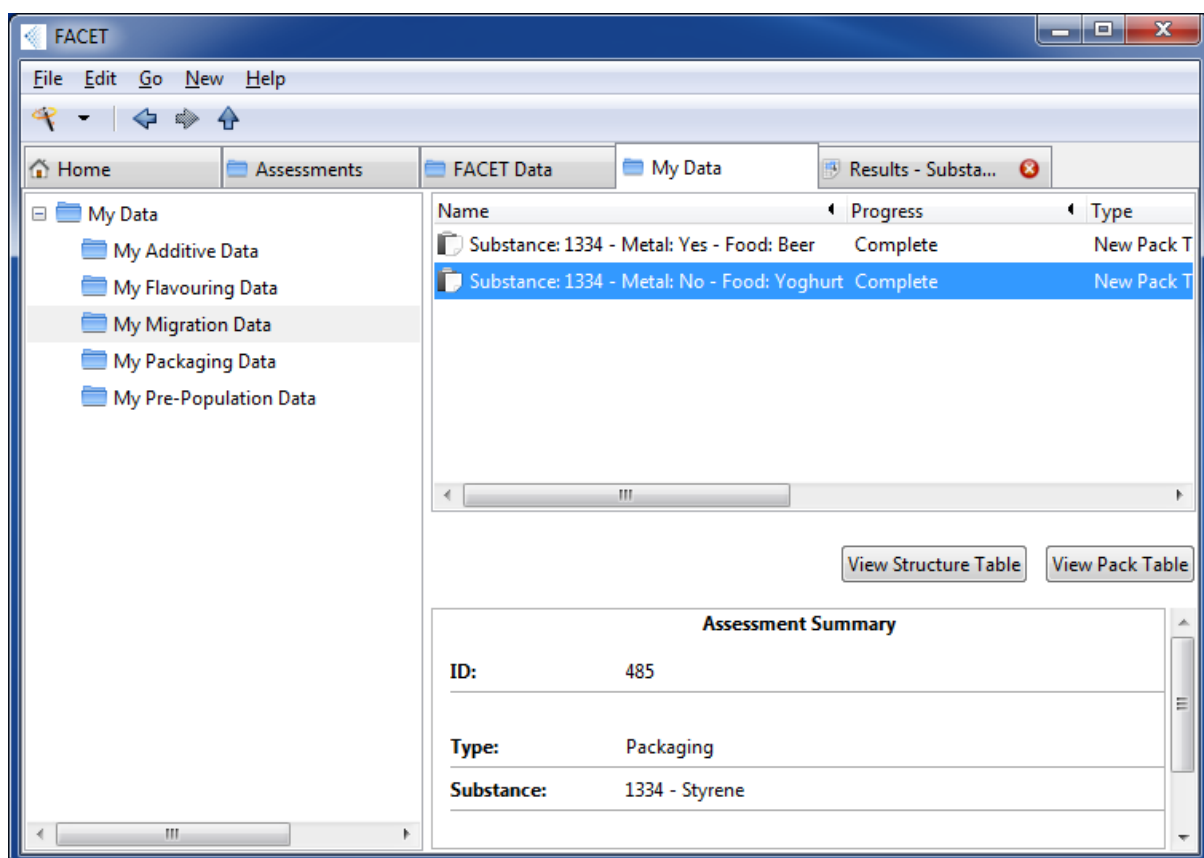


Figure 3-81: Assessment Complete

To view the migration model outputs click the “View Pack Table” button.

Now the user can run an assessment on the table created in the previous assessment. This calculation is illustrated in Figure 3-82 to Figure 3-92.

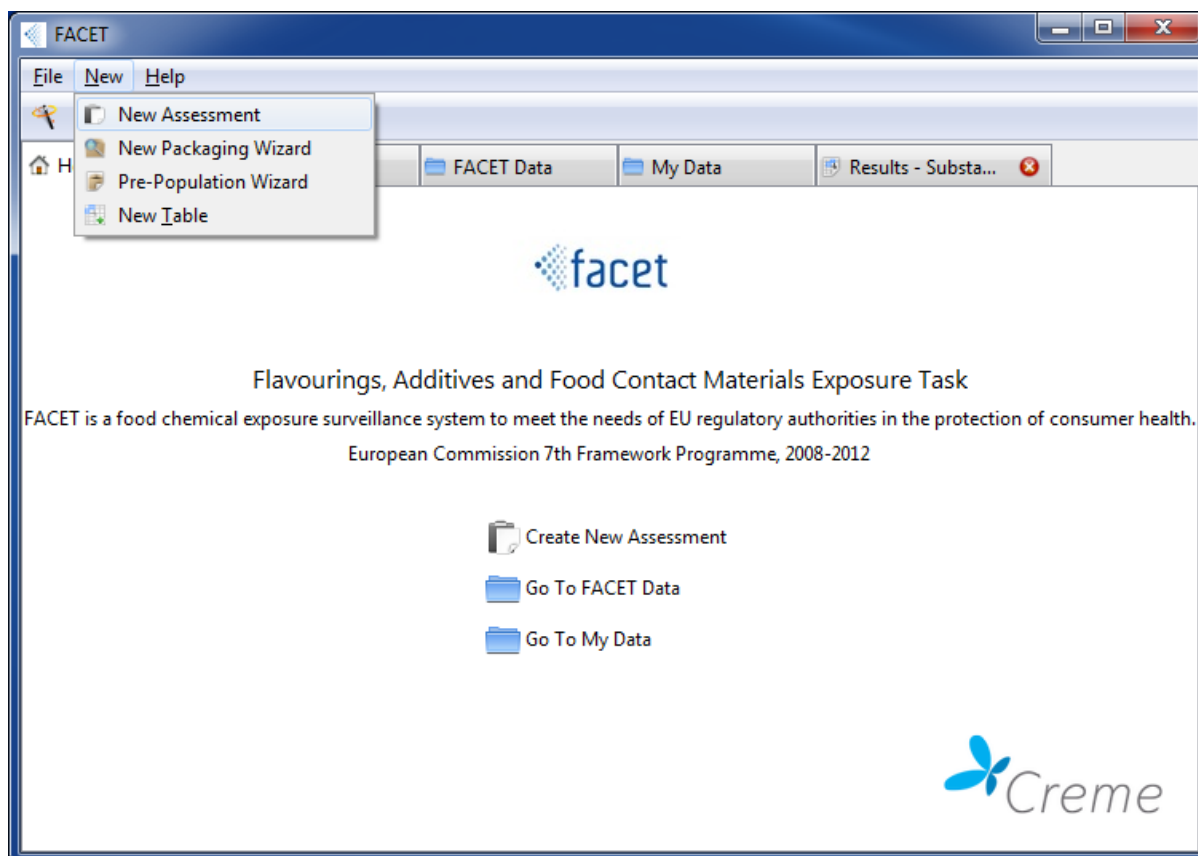


Figure 3-82: Run Assessment

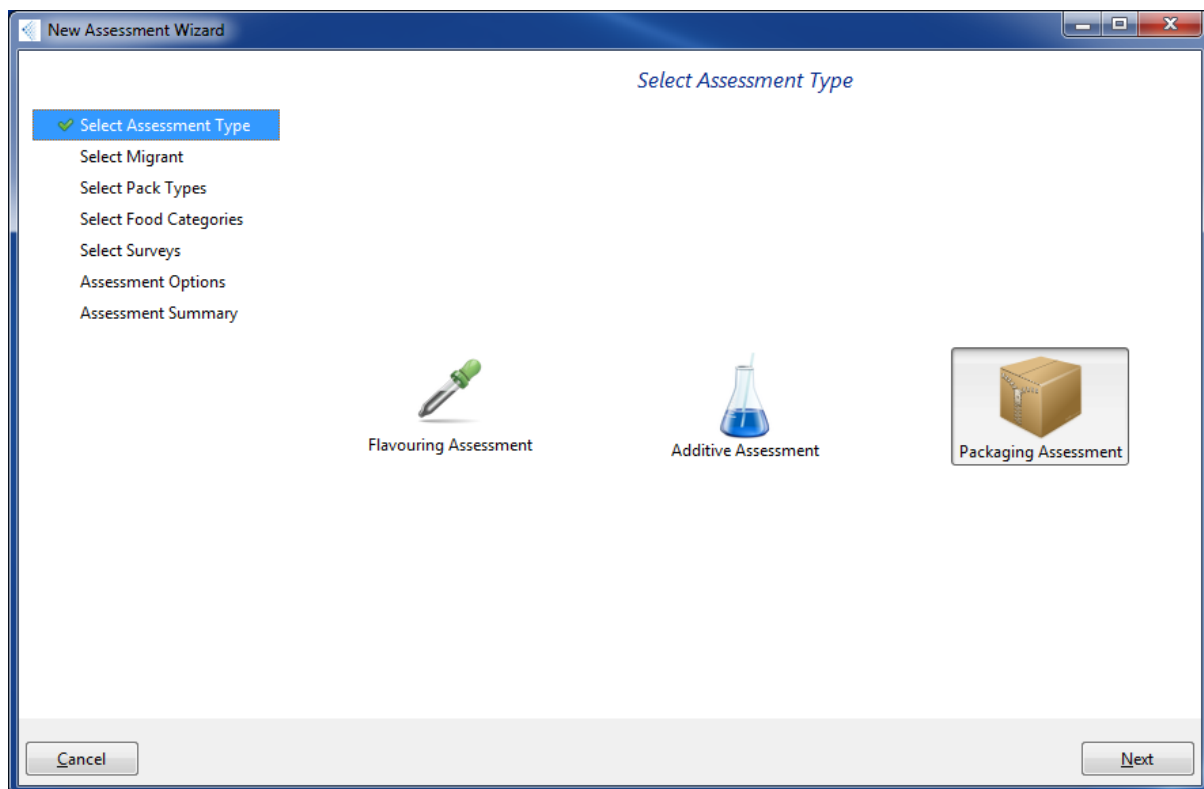


Figure 3-83: Packaging Assessment

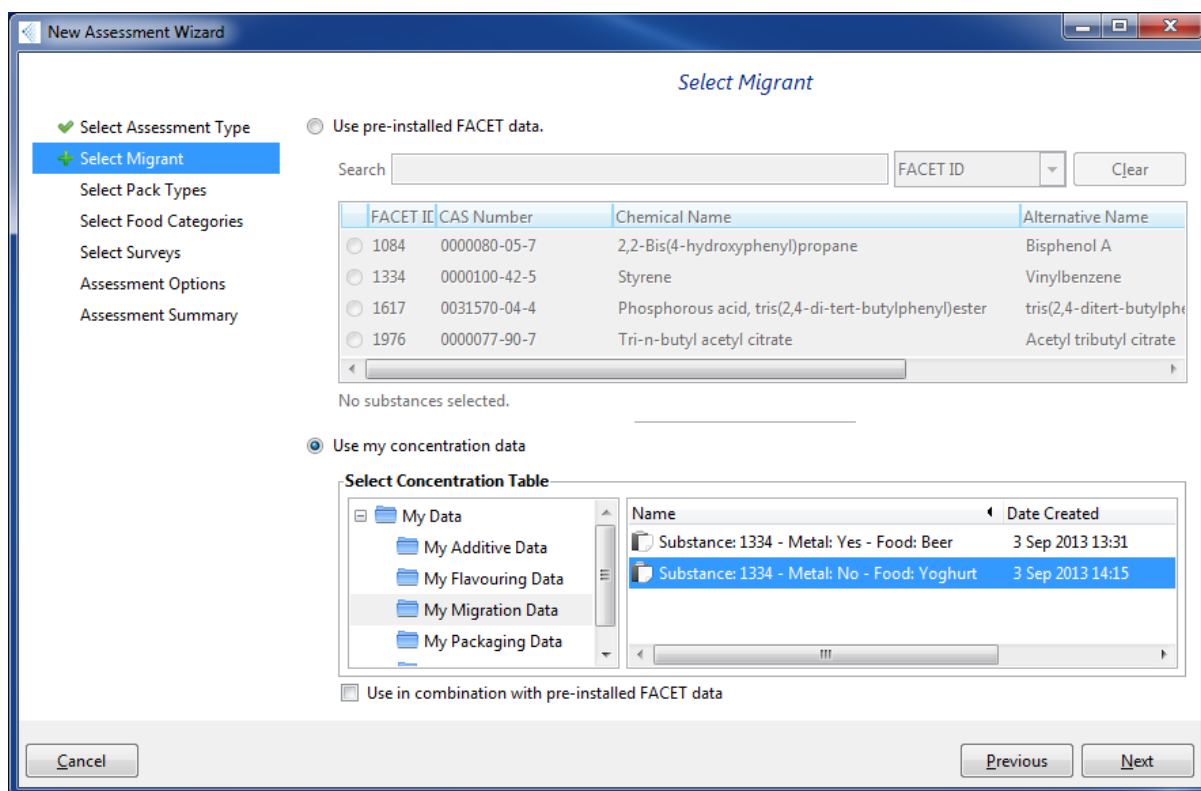


Figure 3-84: Select Table

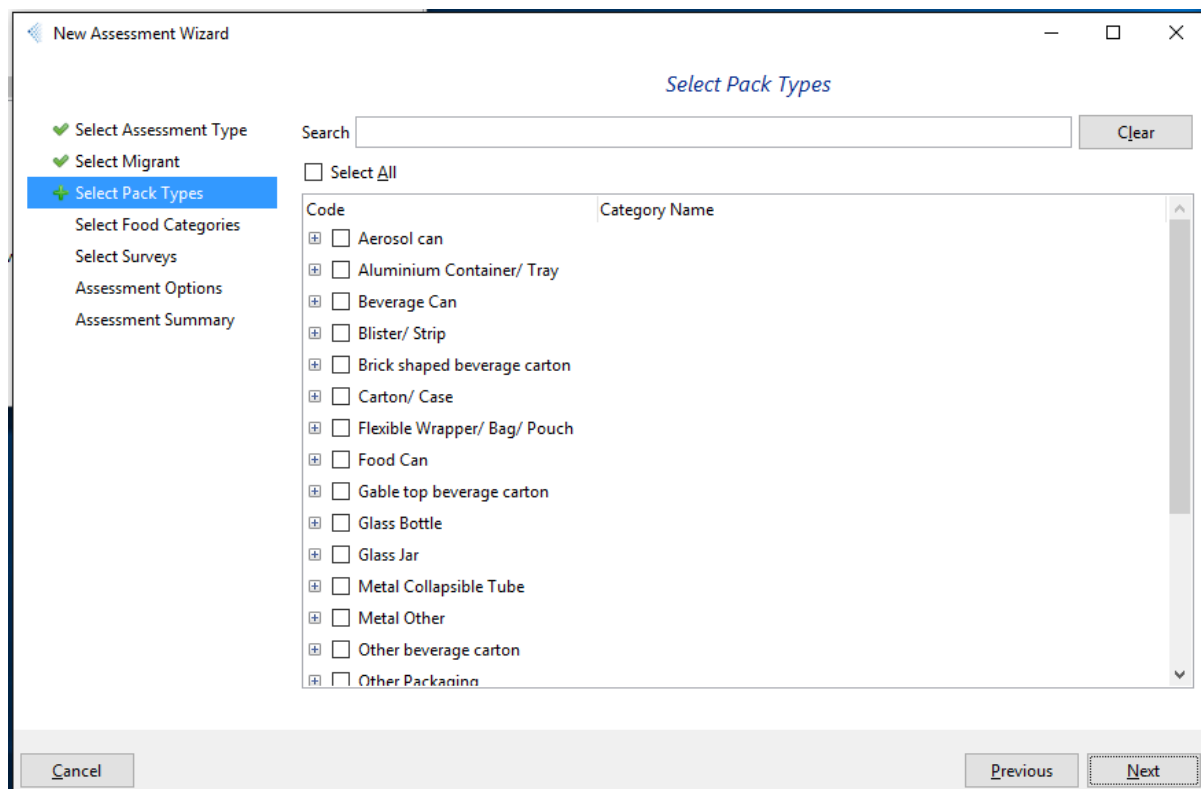


Figure 3-85: Select Pack Types

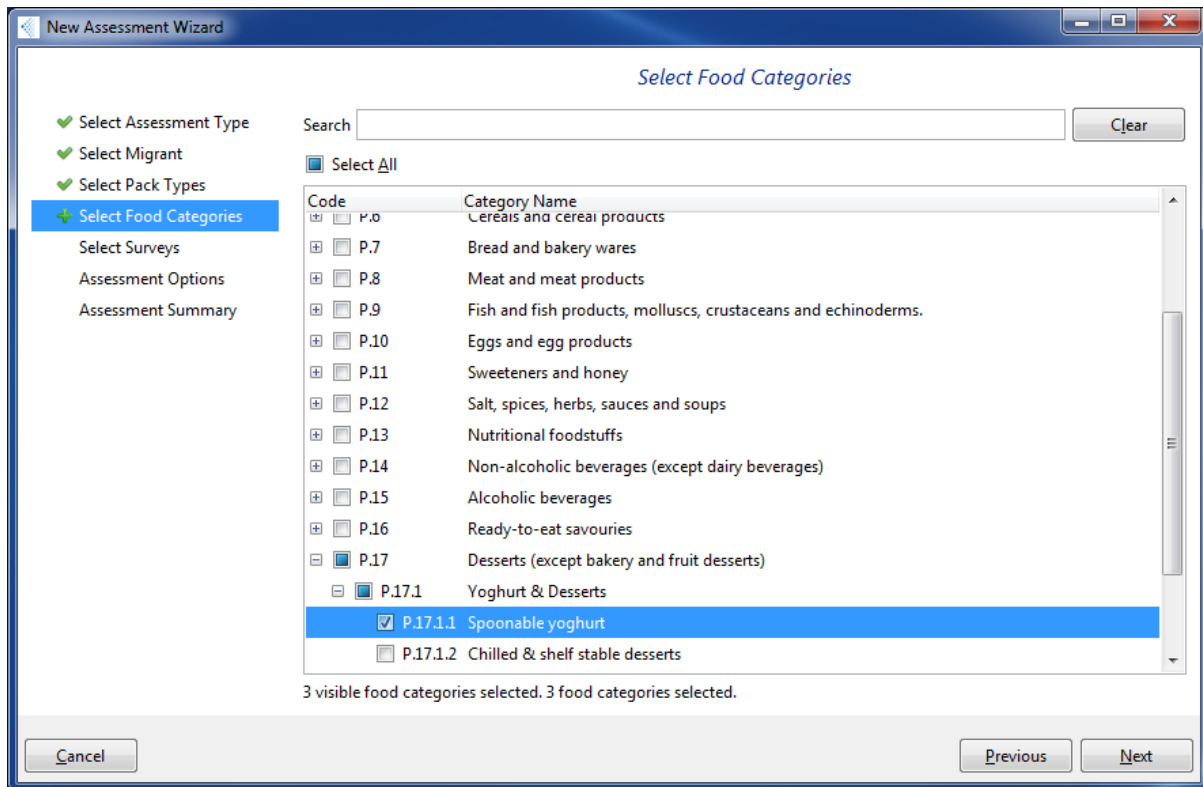


Figure 3-86: Select Food Categories

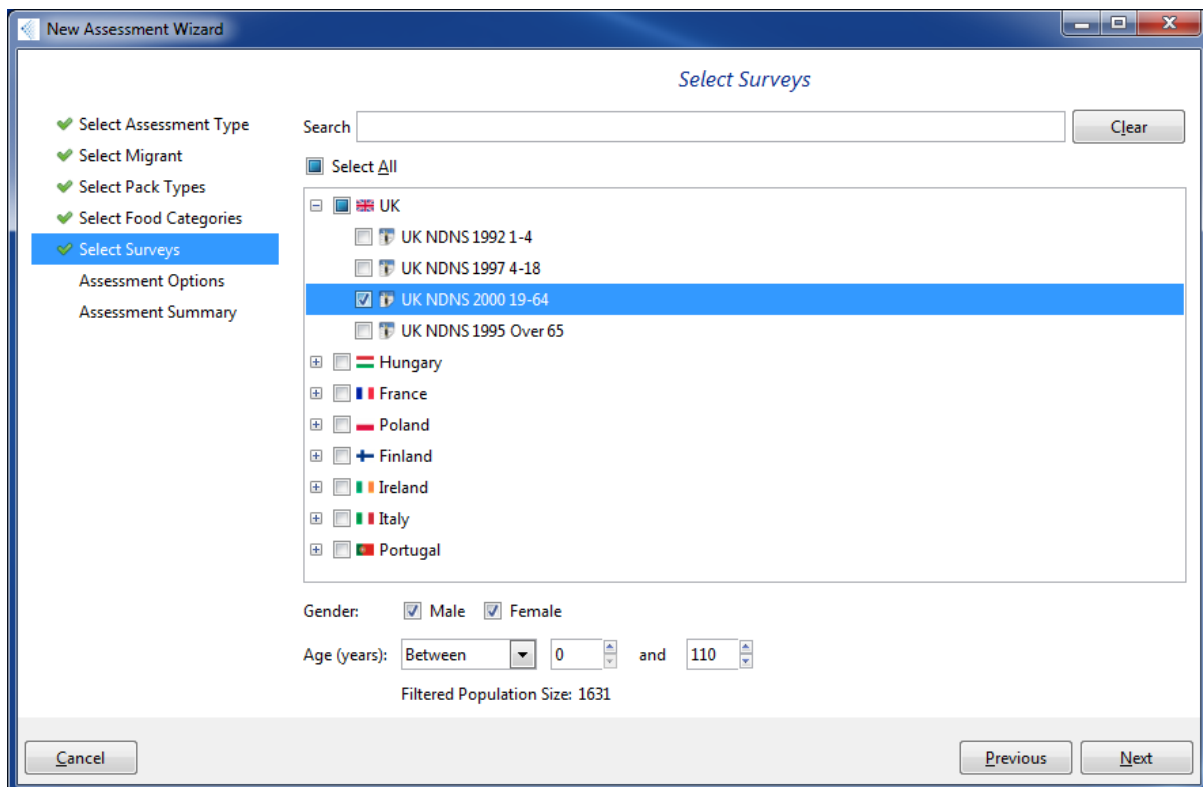
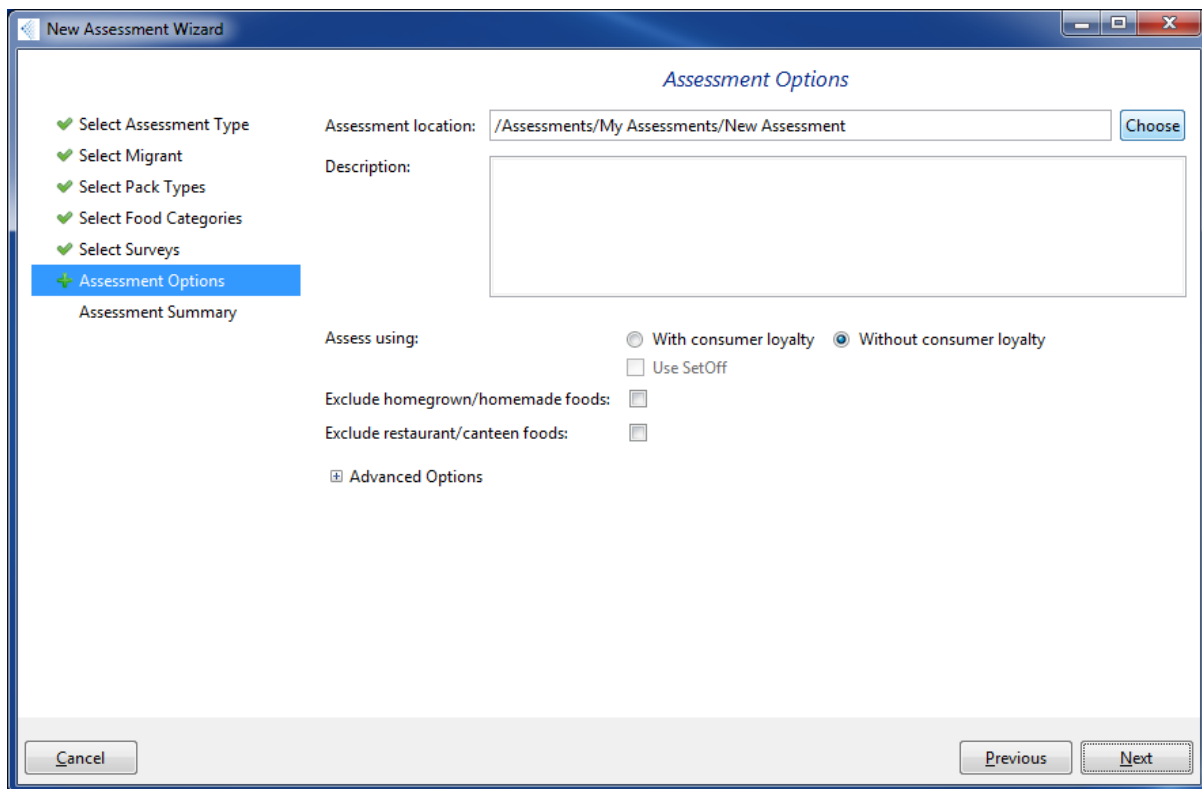


Figure 3-87: Select Survey



New Assessment Wizard

Assessment Options

- ✓ Select Assessment Type
- ✓ Select Migrant
- ✓ Select Pack Types
- ✓ Select Food Categories
- ✓ Select Surveys
- ✚ Assessment Options**
- Assessment Summary

Assessment location:

Description:

Assess using: ☐ With consumer loyalty ☒ Without consumer loyalty

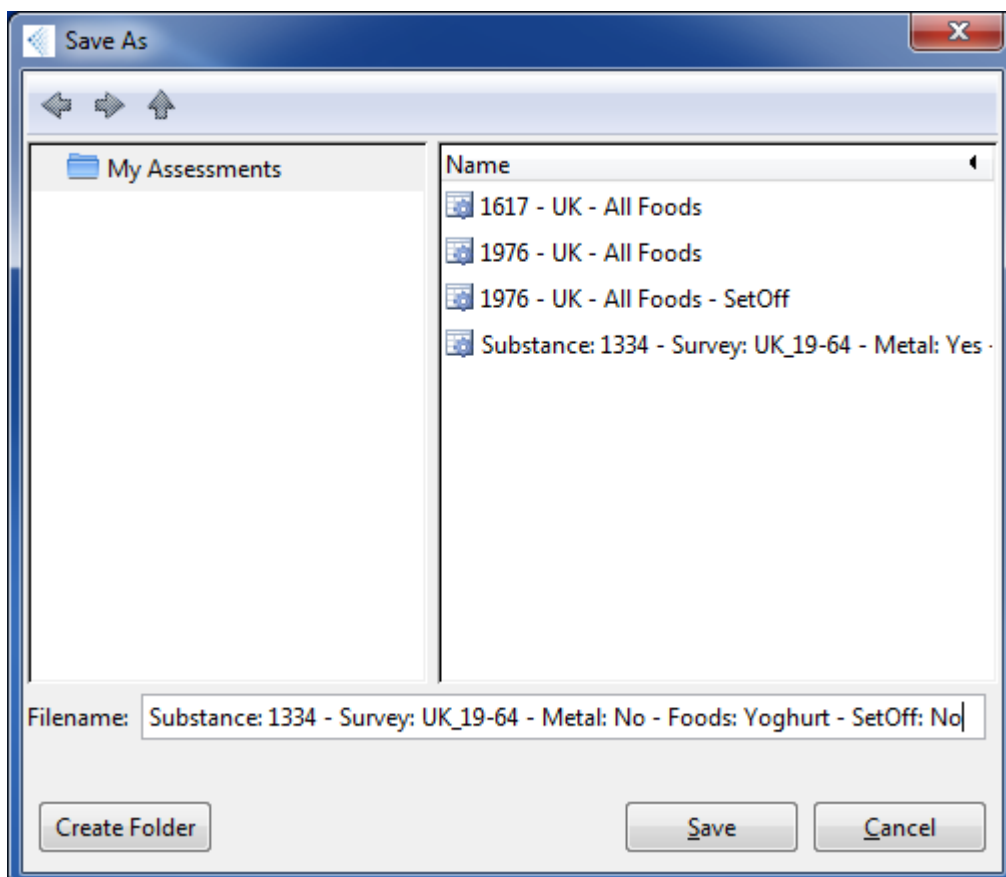
☐ Use SetOff

Exclude homegrown/homemade foods: ☐

Exclude restaurant/canteen foods: ☐

☐ Advanced Options

Figure 3-88: Assessment Options



Save As

My Assessments

| Name |
|---|
| 1617 - UK - All Foods |
| 1976 - UK - All Foods |
| 1976 - UK - All Foods - SetOff |
| Substance: 1334 - Survey: UK_19-64 - Metal: Yes |

Filename:

Figure 3-89: Naming Table

New Assessment Wizard

Assessment Options

- ✓ Select Assessment Type
- ✓ Select Migrant
- ✓ Select Pack Types
- ✓ Select Food Categories
- ✓ Select Surveys
- ✚ Assessment Options**
- Assessment Summary

Assessment location: /Assessments/My Assessments/Substance: 1334 - Survey: UK_19-64 - Metal: No - Food: Choose

Description:

Assess using: ☐ With consumer loyalty ☒ Without consumer loyalty

☐ Use SetOff

Exclude homegrown/homemade foods: ☐

Exclude restaurant/canteen foods: ☐

☐ Advanced Options

Include lowest tier results: ☐

Minimum simulated population size: 1000

Exposure statistics:

| | | | |
|--|--|---|---|
| <input checked="" type="checkbox"/> Mean | <input checked="" type="checkbox"/> Standard Deviation | <input checked="" type="checkbox"/> Minimum | <input checked="" type="checkbox"/> Maximum |
| <input type="checkbox"/> P25 | <input type="checkbox"/> P50 | <input type="checkbox"/> P75 | <input checked="" type="checkbox"/> P90 |
| <input checked="" type="checkbox"/> P95 | <input type="checkbox"/> P97.5 | <input type="checkbox"/> P99 | <input type="checkbox"/> P99.9 |

Other percentiles:

Cancel Previous Next

Figure 3-90: Advanced Options

New Assessment Wizard

Assessment Summary

- ✓ Select Assessment Type
- ✓ Select Migrant
- ✓ Select Pack Types
- ✓ Select Food Categories
- ✓ Select Surveys
- ✓ Assessment Options
- ✓ Assessment Summary**

Type: Migrant

Substance code: 1334

Substance name:

Concentration data: Use my concentration data
/Data/My Data/My Migration Data/Substance: 1334 - Metal: No - Food: Yog

Food categories:

| Code | Category Name |
|----------|---|
| P.17 | Desserts (except bakery and fruit desserts) |
| P.17.1 | Yoghurt & Desserts |
| P.17.1.1 | Spoonable yoghurt |

Survey(s): UK NDNS 2000 19-64

Population filter: Gender: Male, Female
Age: between 0 and 110

Name: Substance: 1334 - Survey: UK_19-64 - Metal: No - Foods: Yoghurt - SetOff: N

☒ I understand that running this assessment means that my computer will be busy for between 5 and 20 minutes per survey. (This calculation time depends on several factors, including the computer's processing ability, the number of food categories selected and the simulated population size.)

Cancel Previous Run

Figure 3-91: Summary of Assessment

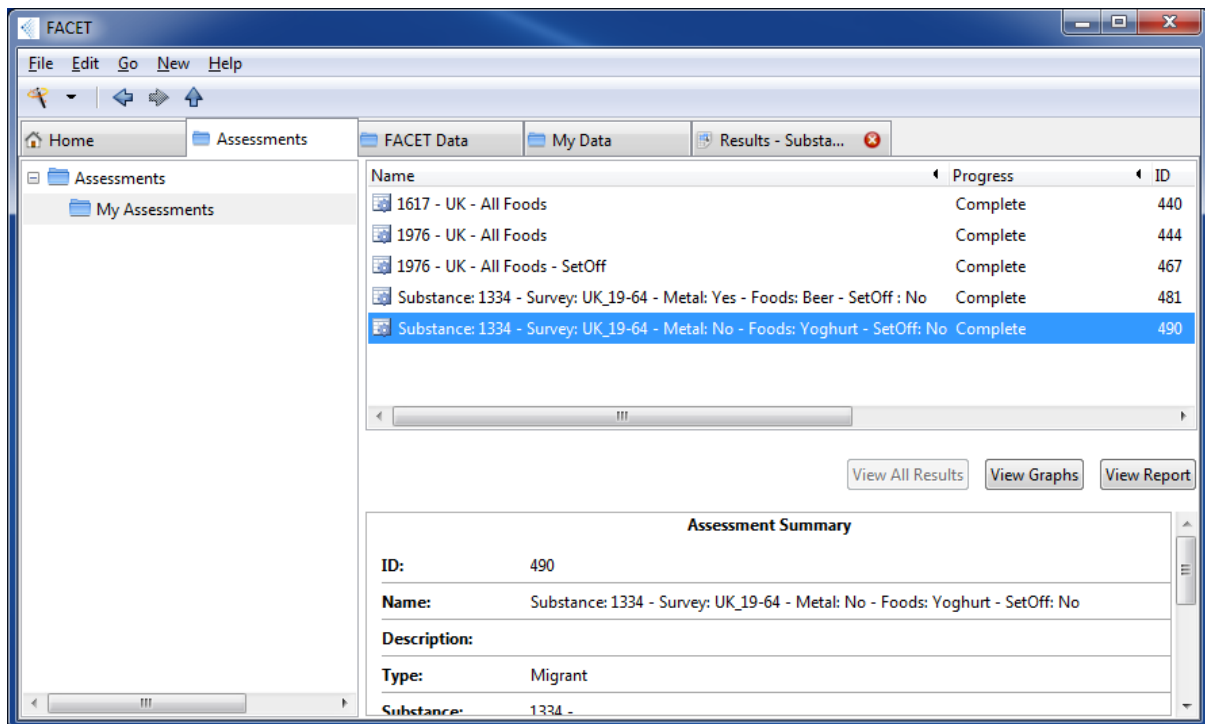


Figure 3-92: Assessment Complete

After completion, the user can now view the data in a report format or else visually using graphs. This is shown in Figure 3-93 to Figure 3-95.

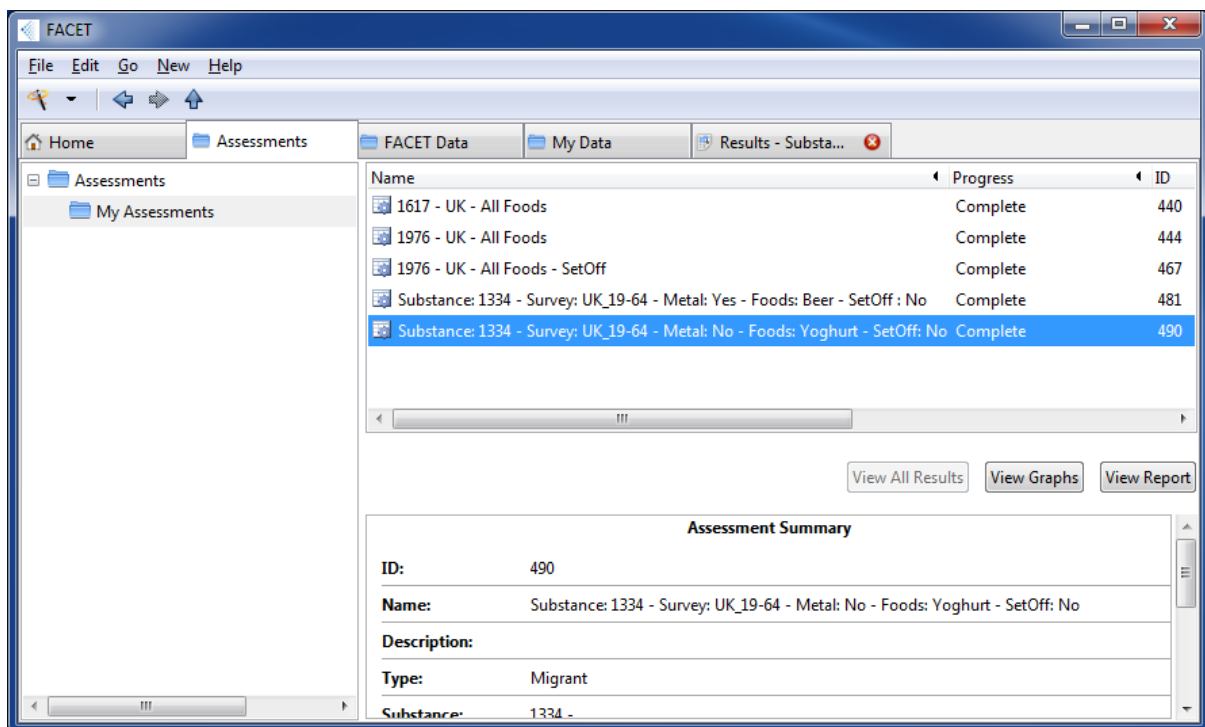


Figure 3-93: Select View Graphs

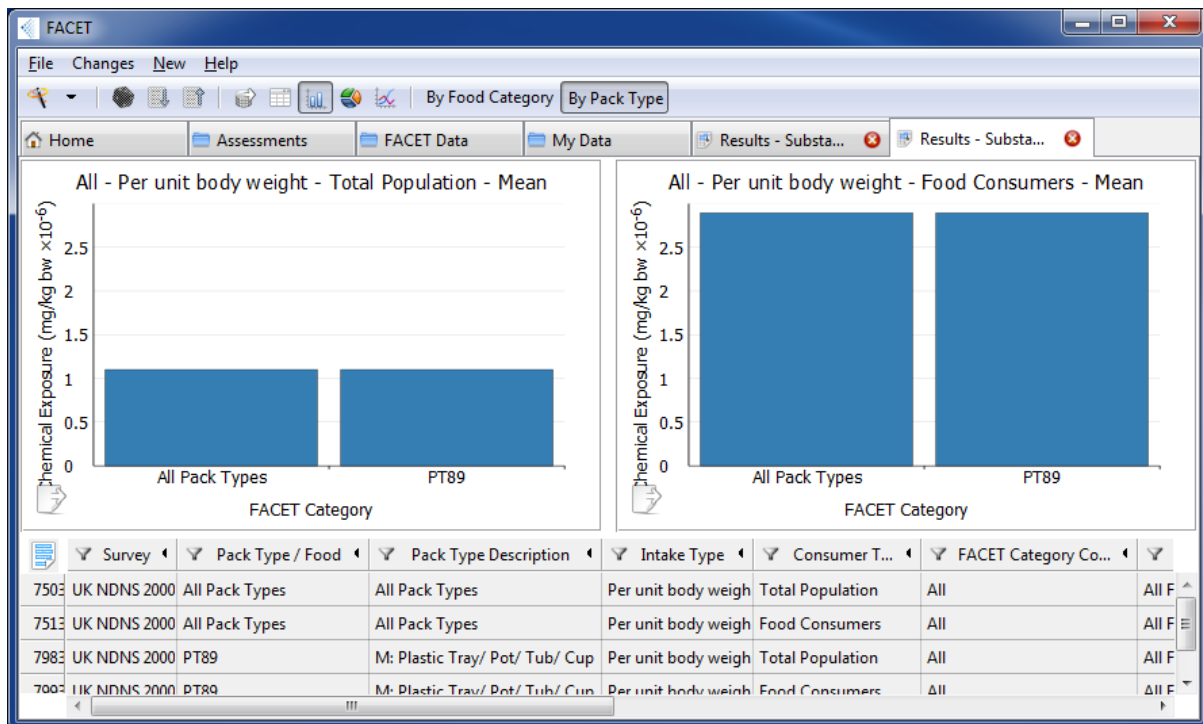


Figure 3-94: Viewing Graphs, by Pack Type

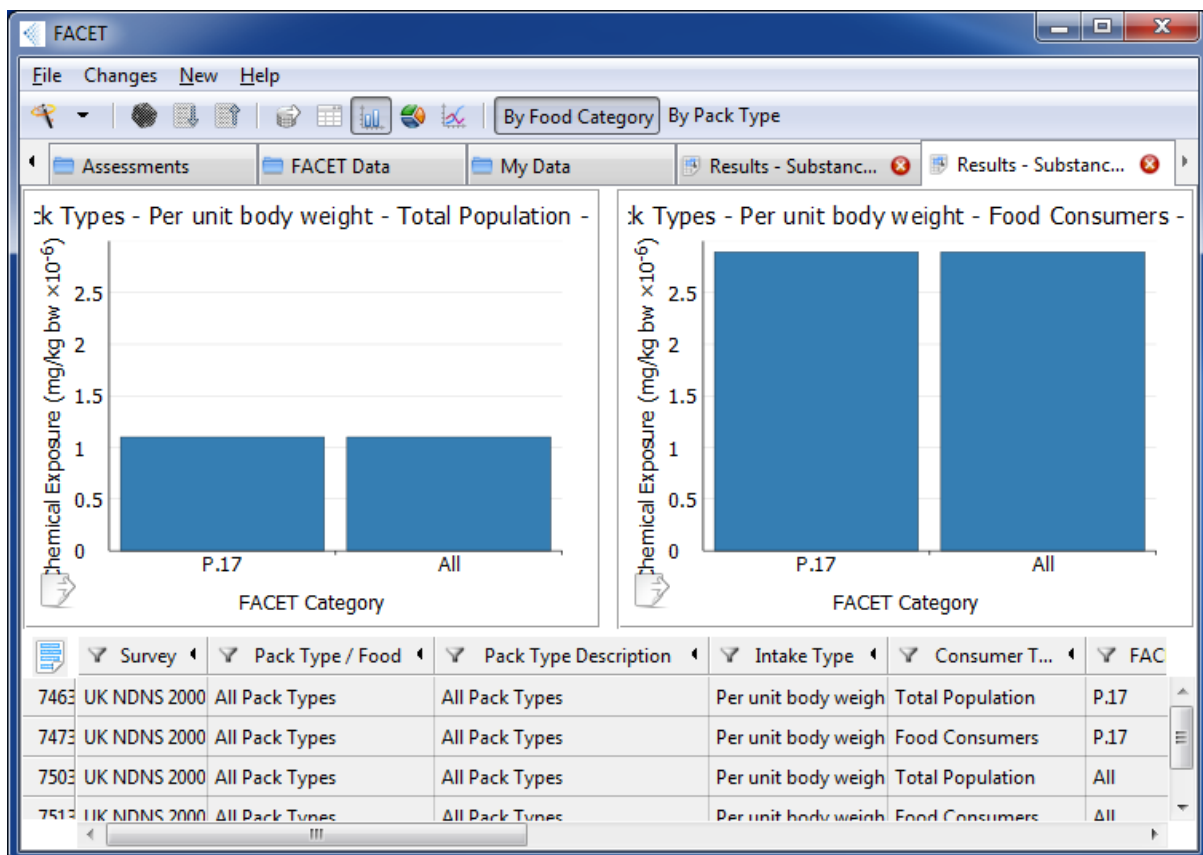


Figure 3-95: Viewing Graphs, by Food Category

3.3.3 Using the New Packaging Wizard for a New Substance

Another option in the software is for the user to enter a new substance and then run a packaging assessment for the substance. To enter a new substance, the user initially selects the “New Packaging Wizard” as shown in Figure 3-96.

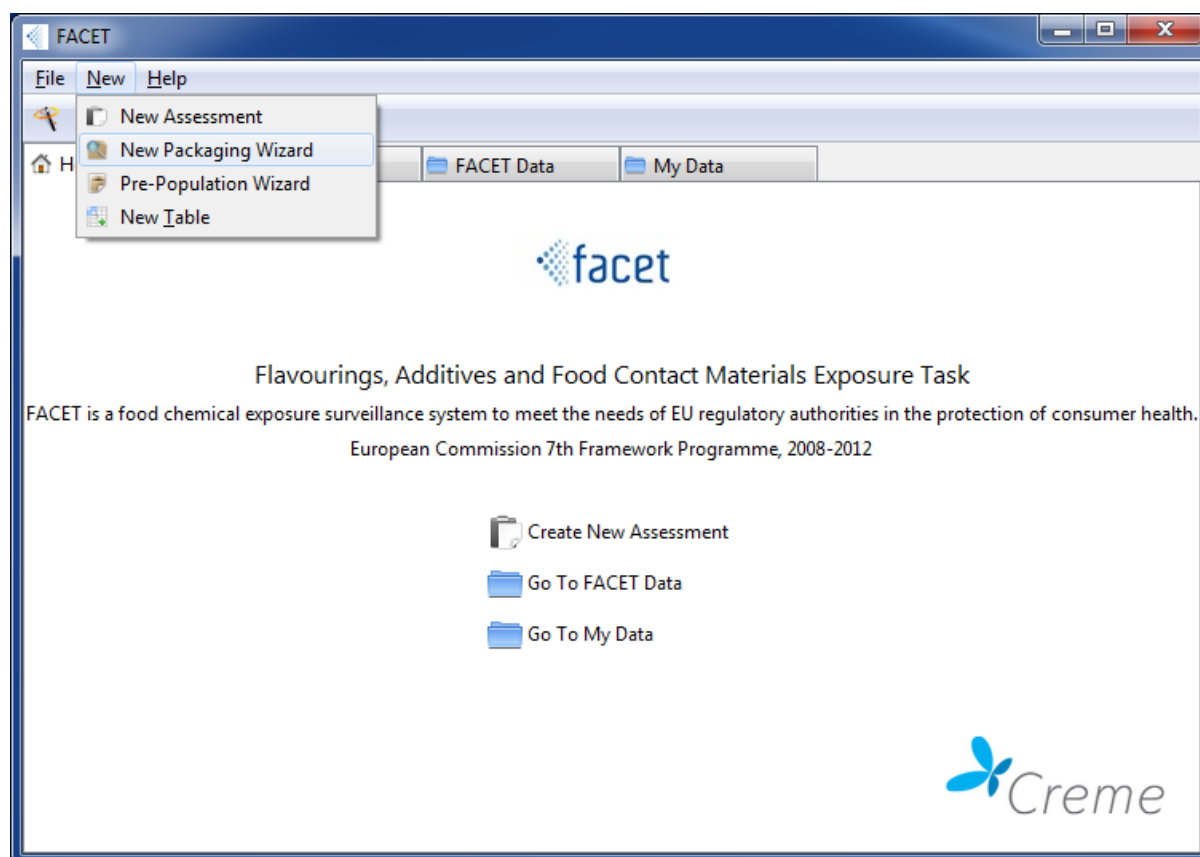


Figure 3-96: New Packaging Wizard

The user has the option of selecting a Non-Metal or Metal pack type. In this example, we select a “New Metal Pack Type”.

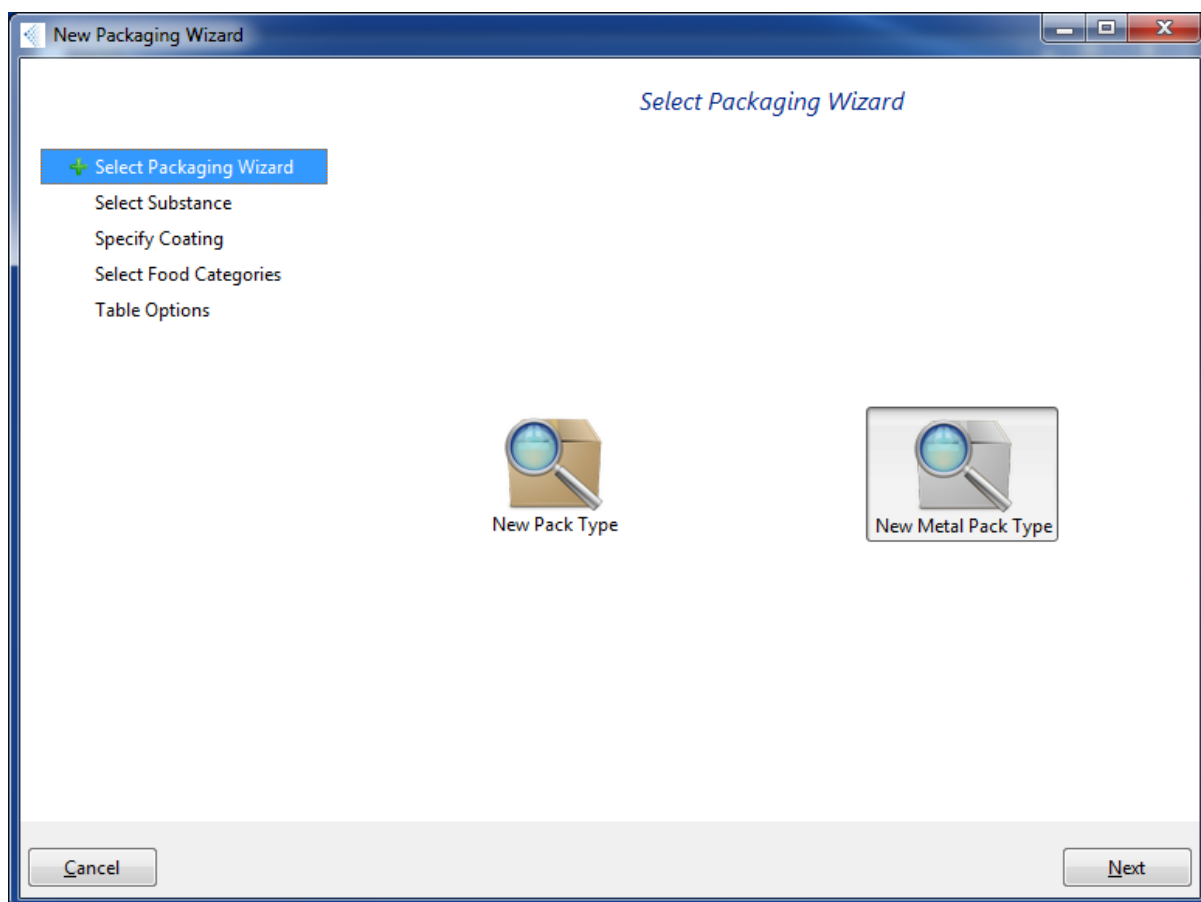


Figure 3-97: New Metal

At this stage, a new substance can be used by entering the appropriate information as is done in Figure 3-98. A suitable “Substance Name” is required as well as “Log(P)” and “Molecular Weight” details for the substance.

New Packaging Wizard

Select Substance

☒ Select Packaging Wizard

☒ **Select Substance**

☐ Specify Coating

☐ Select Food Categories

☐ Table Options

☒ **New Substance**

Substance name:

Log(P):

Molecular Weight: mol

☐ Existing Substance

Search

| | FACET Id | CAS Number | Chemical Name | Alternative Name | Molecular Formula | Molec |
|-----------------------|----------|--------------|-------------------|--------------------|-------------------|-------|
| <input type="radio"/> | 1000 | 0000064-1... | Acetic acid | Ethanoic acid | C2H4O2 | 60 |
| <input type="radio"/> | 1001 | 0000108-0... | Acetic acid, v... | Vinyl acetate | C4H6O2 | 86 |
| <input type="radio"/> | 1006 | 0000079-0... | Acrylamide | 2-propenamide | C3H5N1O1 | 71 |
| <input type="radio"/> | 1008 | 0000079-1... | Acrylic acid | Polyacrylic Acid | C3H4O2 | 72 |
| <input type="radio"/> | 1010 | 0000141-3... | Acrylic acid, ... | n-Butyl acrylat... | C7H12O2 | 128 |
| <input type="radio"/> | 1016 | 0000140-8... | Acrylic acid, ... | ethyl acrylate | C5H8O2 | 100 |
| <input type="radio"/> | 1017 | 0000103-1... | Acrylic acid, ... | (±)-Acrylic aci... | C11H20O2 | 184 |

Nothing selected

Figure 3-98: New Substance

Once the information for the new substance has been entered, the user can follow a similar approach to that taken in Section 3.3.1 where the concentration of the substance in a specified pack type in a particular food is determined. These steps are illustrated in Figure 3-99 to Figure 3-105.

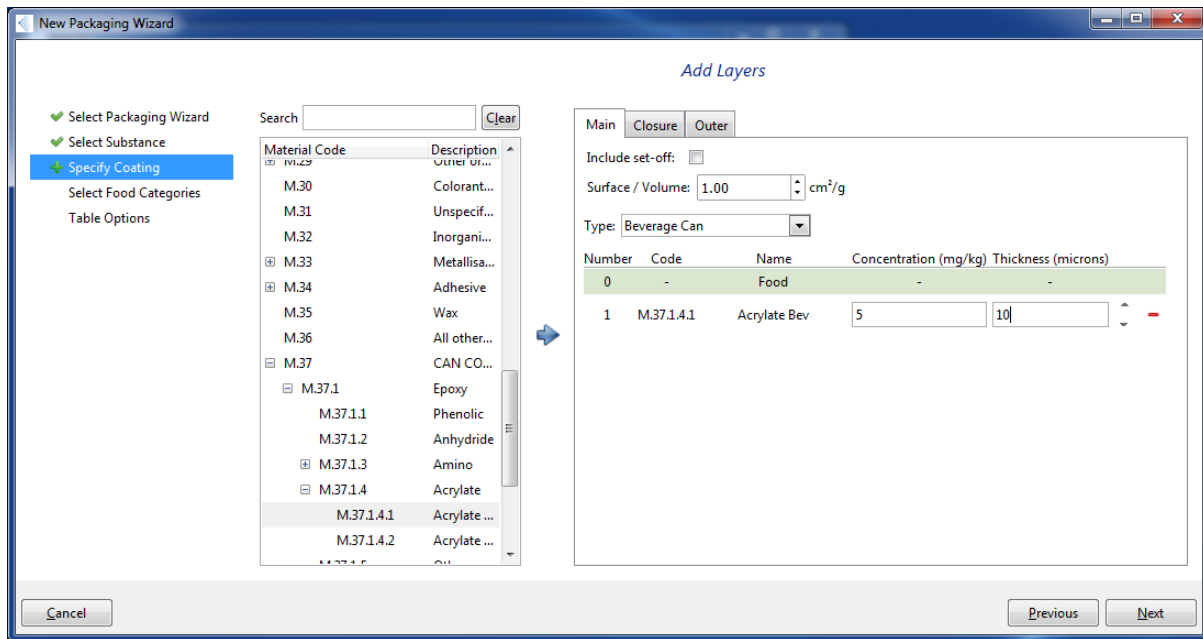


Figure 3-99: Add Layers

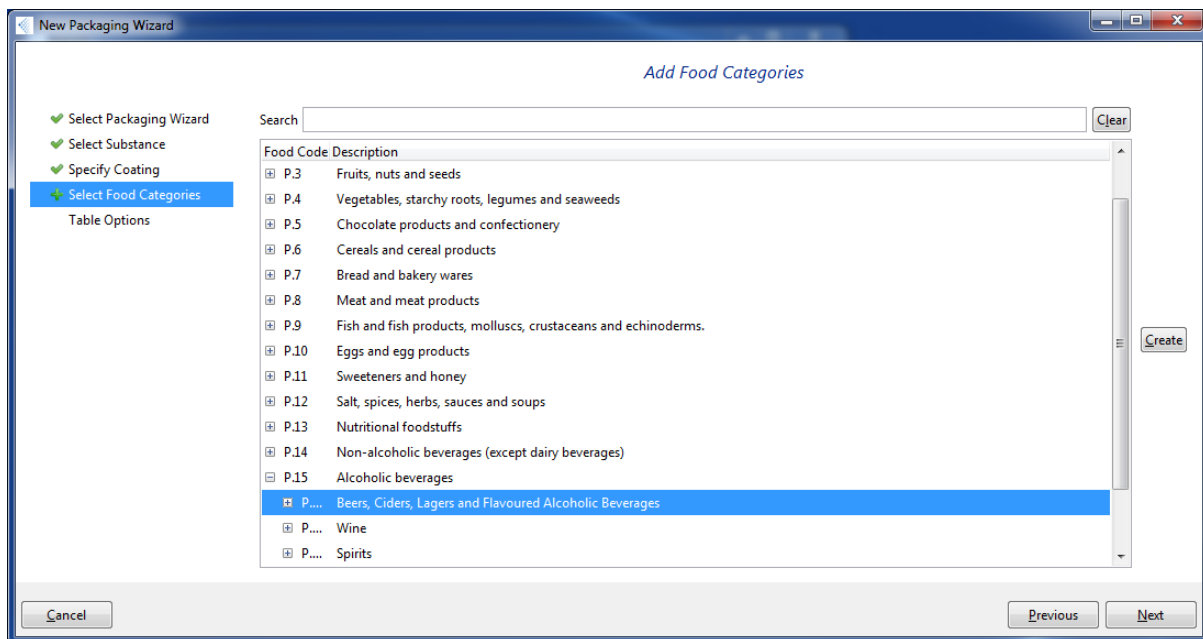


Figure 3-100: Add Food Categories

New Packaging Wizard

Add Food Categories

- ✓ Select Packaging Wizard
- ✓ Select Substance
- ✓ Specify Coating
- ✚ Select Food Categories**
- Table Options

Search: Clear

| Food Code | Description |
|-----------|--|
| P.3 | Fruits, nuts and seeds |
| P.4 | Vegetables, starchy roots, legumes and seaweeds |
| P.5 | Chocolate products and confectionery |
| P.6 | Cereals and cereal products |
| P.7 | Bread and bakery wares |
| P.8 | Meat and meat products |
| P.9 | Fish and fish products, molluscs, crustaceans and echinoderms. |
| P.10 | Eggs and egg products |
| P.11 | Sweeteners and honey |
| P.12 | Salt, spices, herbs, sauces and soups |
| P.13 | Nutritional foodstuffs |
| P.14 | Non-alcoholic beverages (except dairy beverages) |
| P.15 | Alcoholic beverages |
| P.15.1 | Beers, Ciders, Lagers and Flavoured Alcoholic Beverages |
| P.... | Wine |
| P.... | Spirits |

P.15.1 - Beers, Ciders, Lagers and Flavoured... ✖ Remove

Market share: %

Pack size: g

Substance migration rate: mg/dm²

Cancel Previous Next

Figure 3-101: Pack Size and Substance Migration Rate

New Packaging Wizard

Table Options

- ✓ Select Packaging Wizard
- ✓ Select Substance
- ✓ Specify Coating
- ✓ Select Food Categories
- ✚ Table Options**

Output file: Choose

Packaging type: NewMetalPackType

Substance type: New Substance

Substance name: additiveX

Log(P): 0

Molecular Weight: 0 mol

| Layers: | Component | Type | Layers |
|---------|-----------|--------------|--------|
| | Main | Beverage Can | 1 |

Food categories:

| Food Code | Description |
|-----------|---|
| P.15.1 | Beers, Ciders, Lagers and Flavoured Alcoholic Beverages |

Cancel Previous Run

Figure 3-102: Table Options

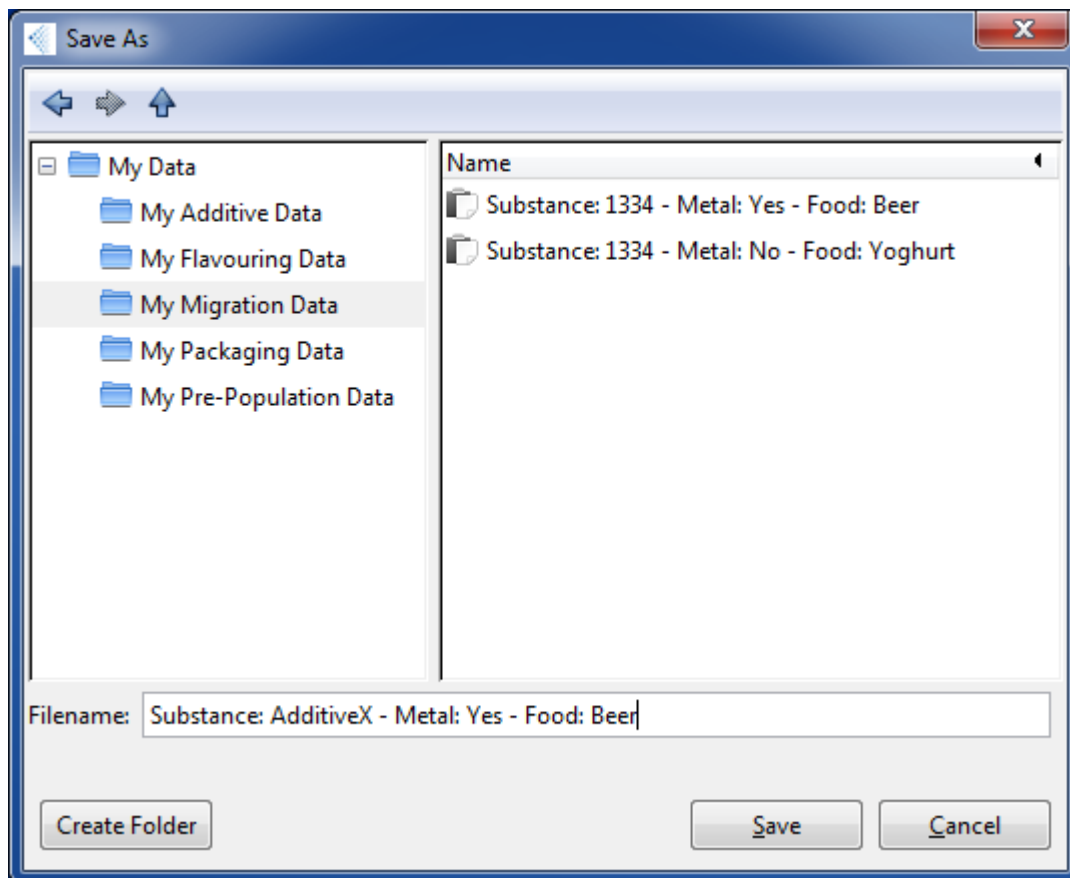


Figure 3-103: Naming Table

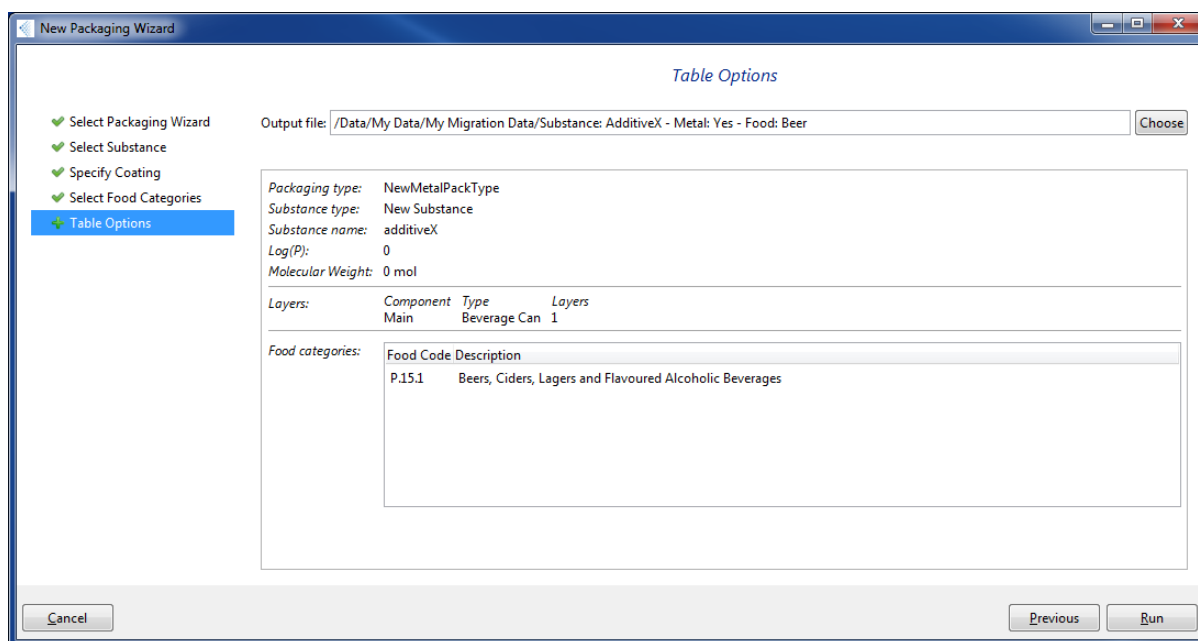


Figure 3-104: Ready to Run

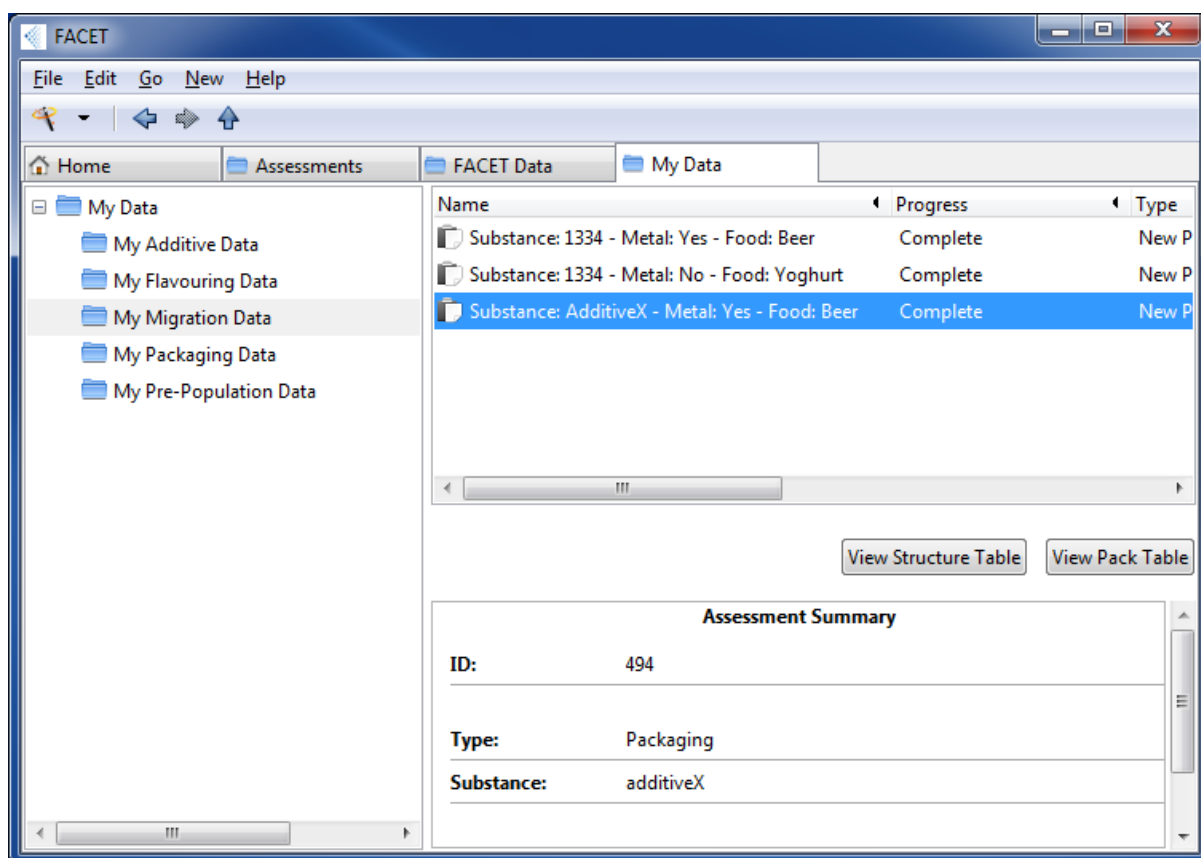


Figure 3-105: Complete

Once the concentration levels are calculated and stored in a table, a packaging assessment can be carried out on the results. This is illustrated in Figure 3-106 to Figure 3-114.

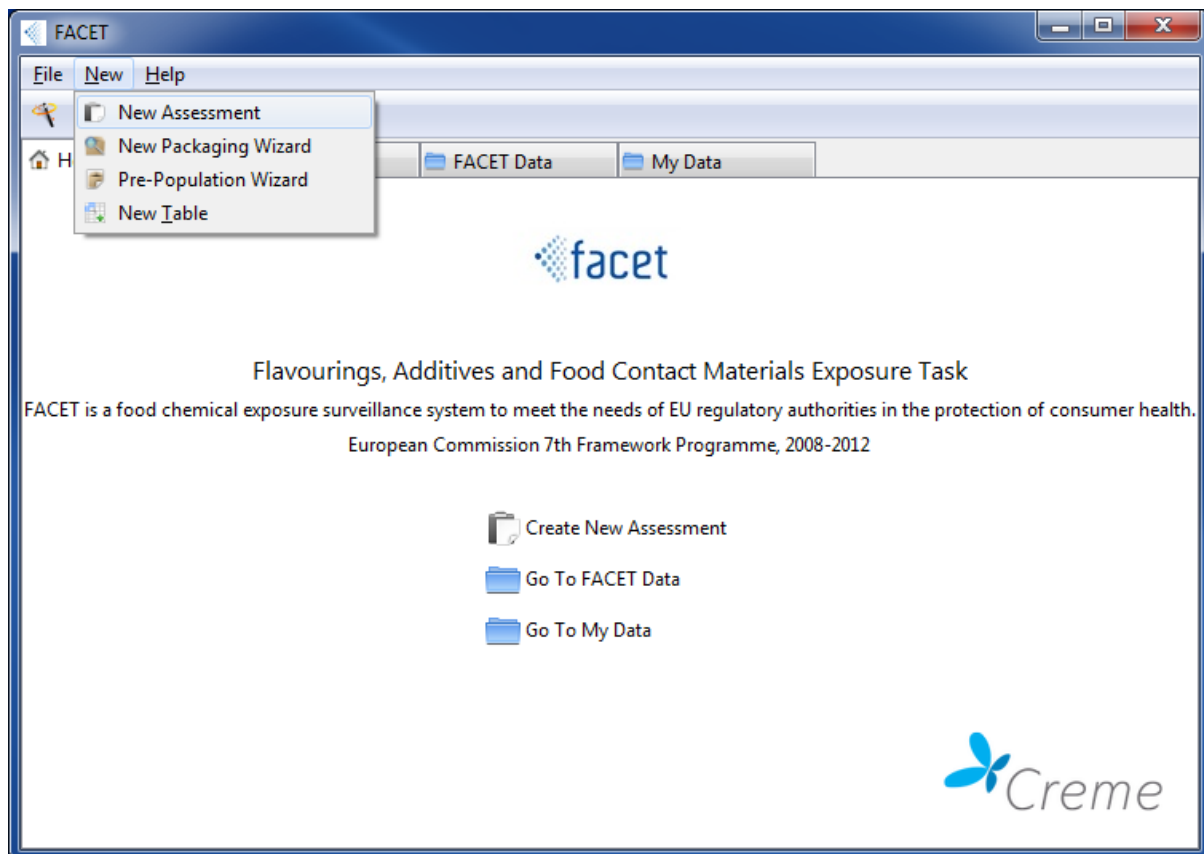


Figure 3-106: New Assessment

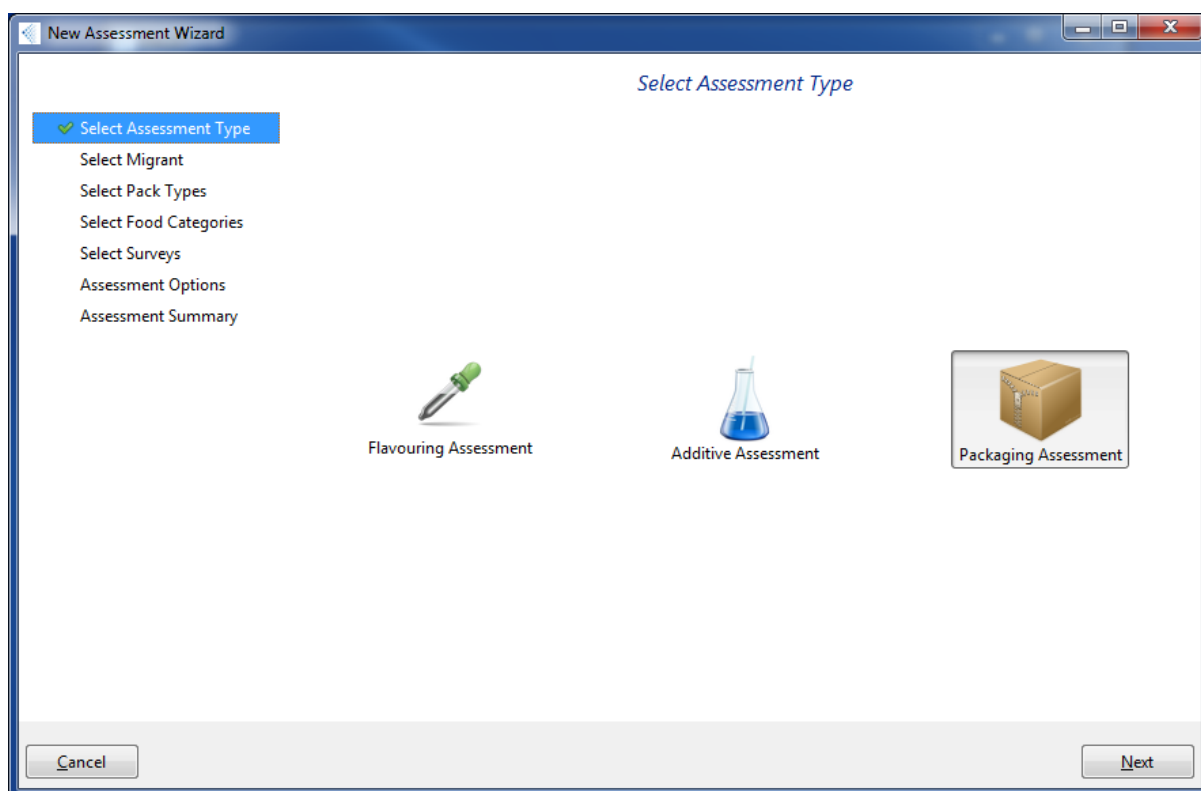


Figure 3-107: Packaging Assessment

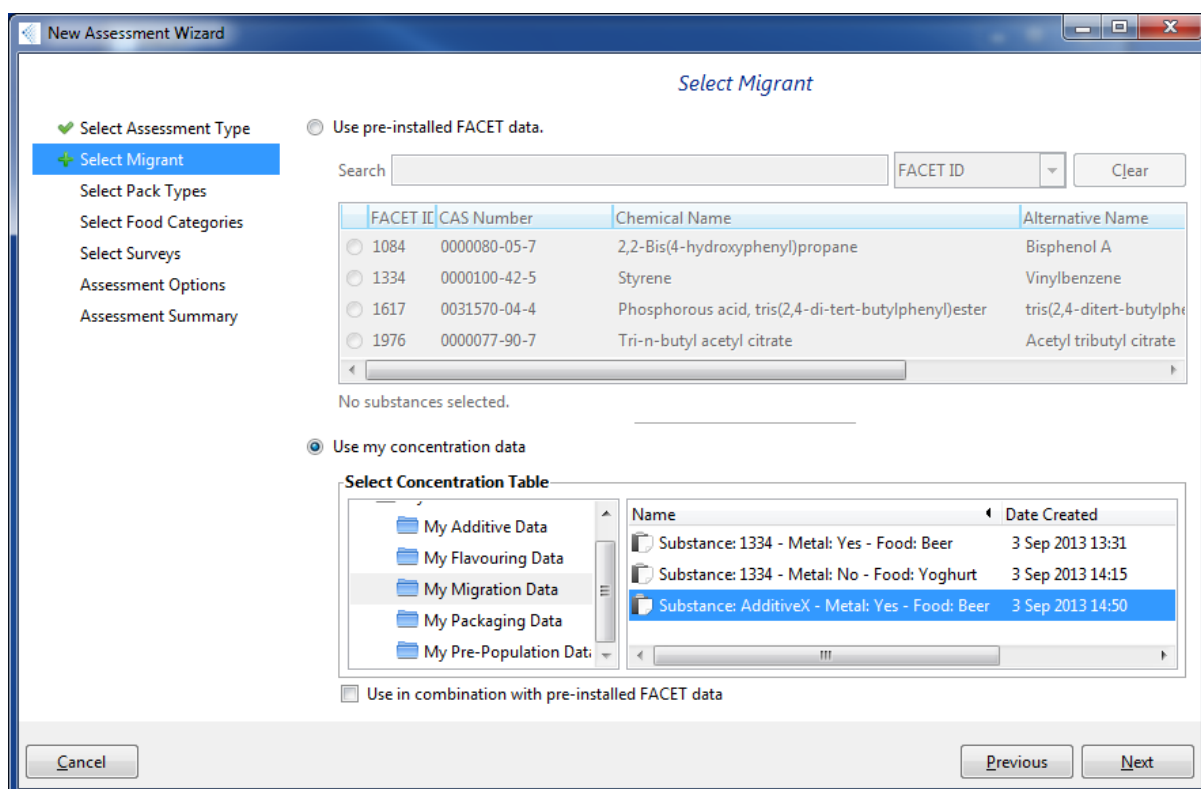


Figure 3-108: Select Table

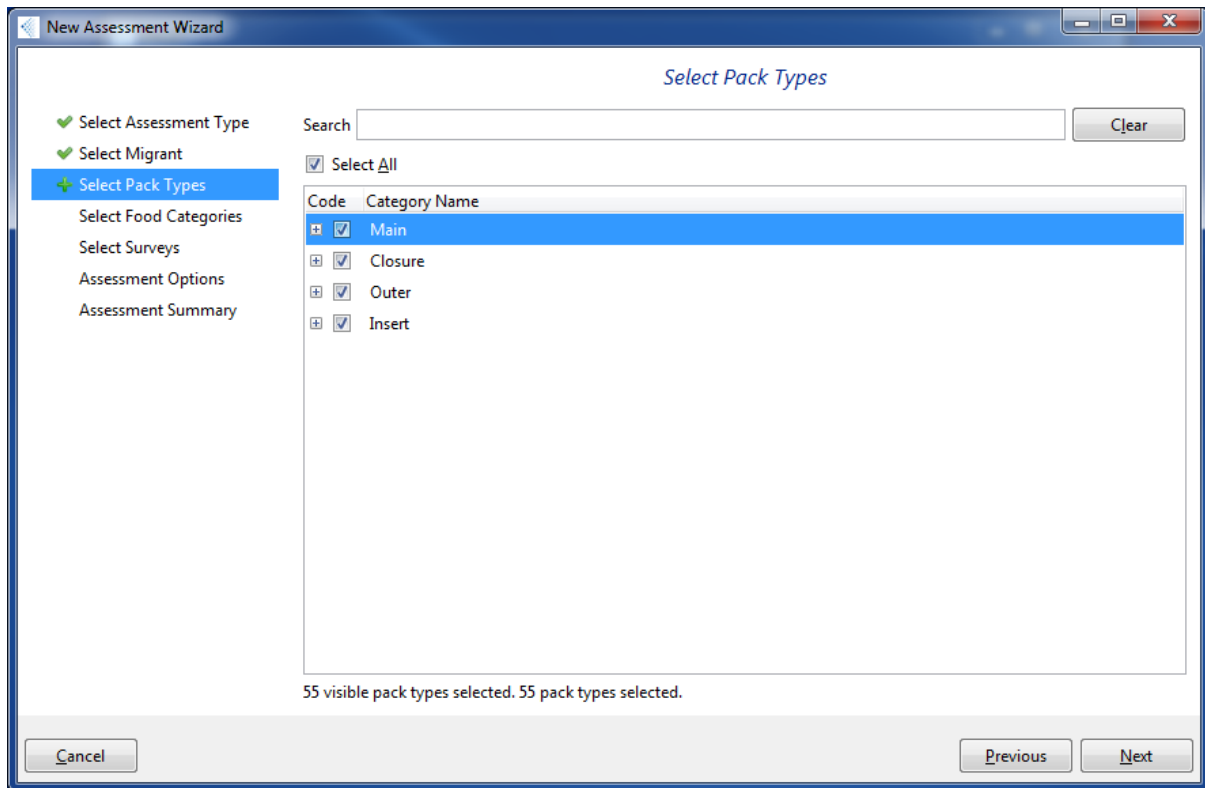


Figure 3-109: Select Pack Types

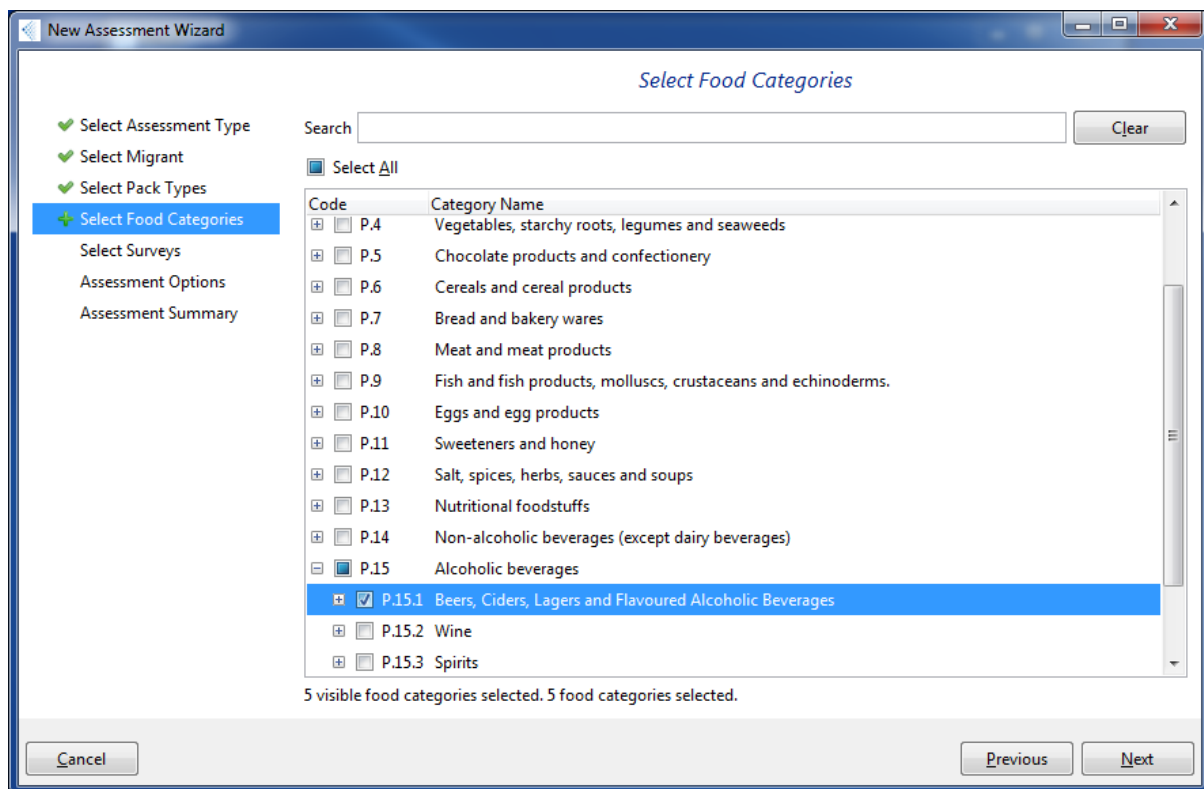


Figure 3-110: Select Food Categories

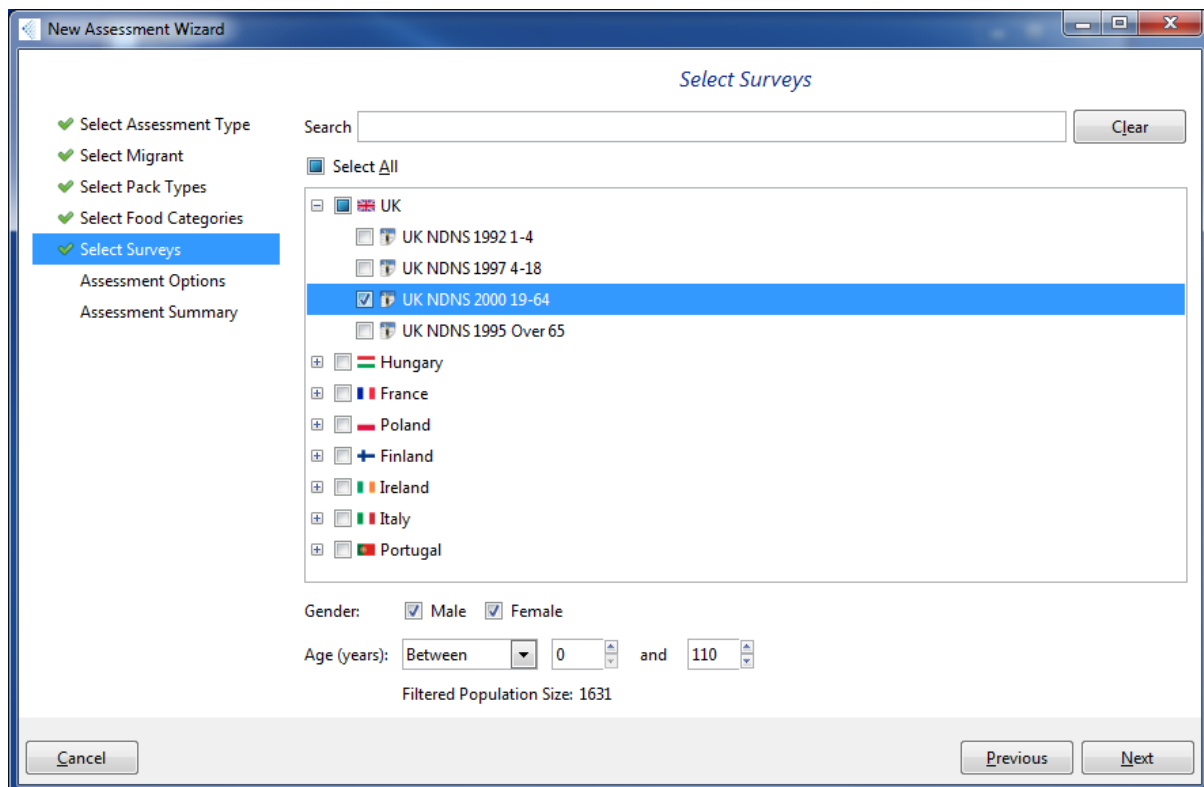


Figure 3-111: Select Survey

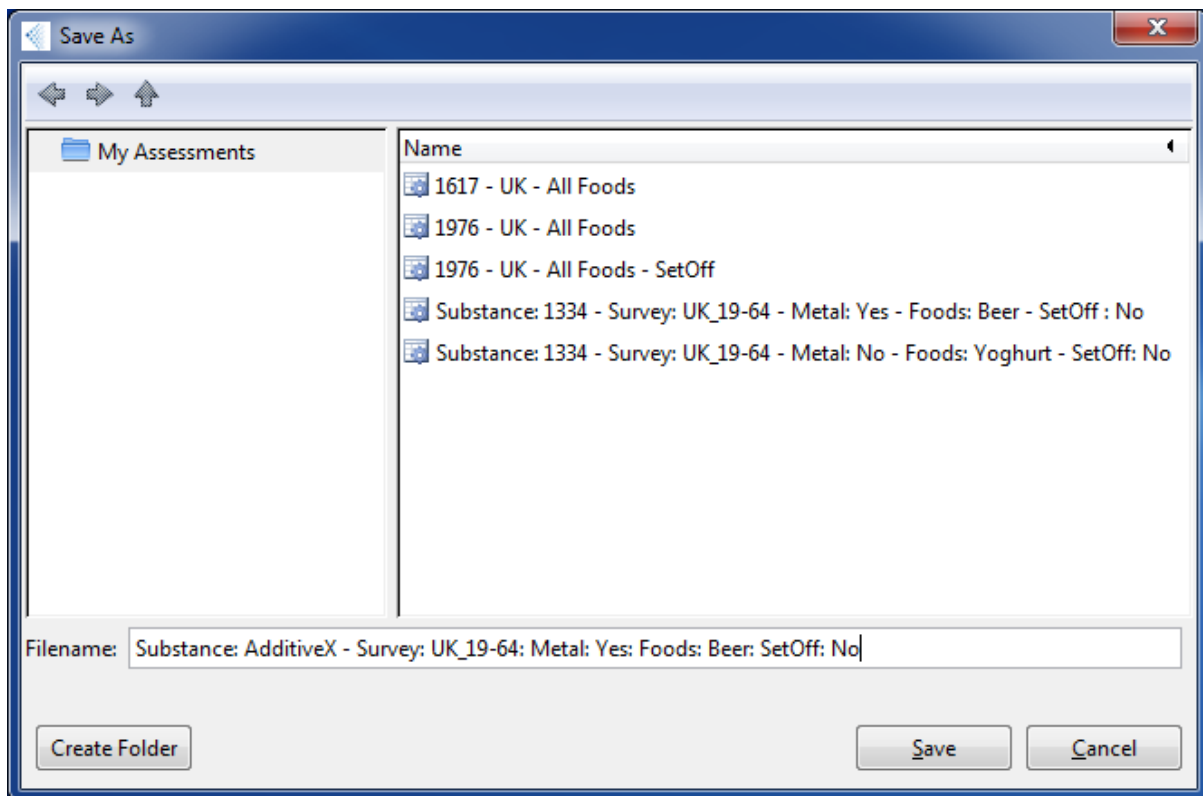


Figure 3-112: Naming Table

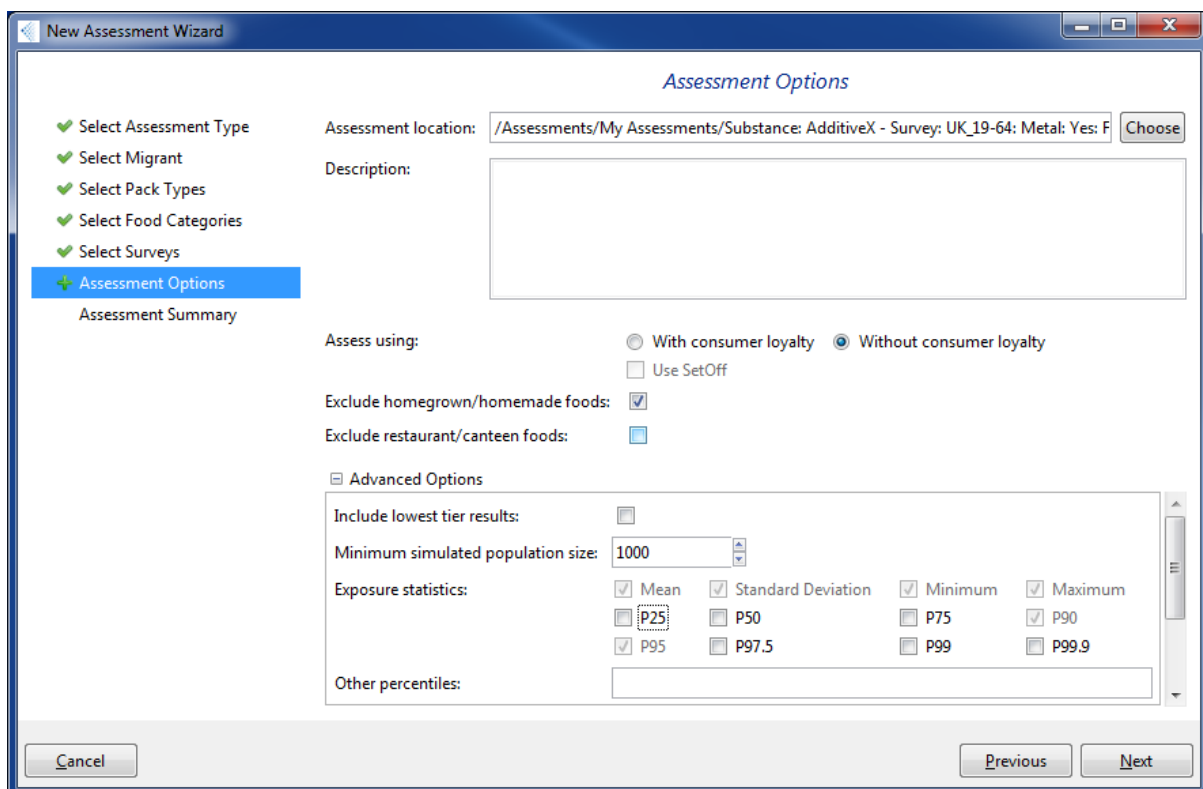


Figure 3-113: Assessment Options

New Assessment Wizard

Assessment Summary

- ✓ Select Assessment Type
- ✓ Select Migrant
- ✓ Select Pack Types
- ✓ Select Food Categories
- ✓ Select Surveys
- ✓ Assessment Options
- ✓ **Assessment Summary**

Type: Migrant
 Substance code: additiveX
 Substance name:
 Concentration data: Use my concentration data /Data/My Data/My Migration Data/Substance: AdditiveX - Metal: Yes - Foo

Food categories:

| Code | Category Name |
|----------|---|
| P.15 | Alcoholic beverages |
| P.15.1 | Beers, Ciders, Lagers and Flavoured Alcoholic Beverages |
| P.15.1.1 | Beer |
| P.15.1.2 | Cider |
| P.15.1.3 | Flavoured Alcoholic Beverages |

Survey(s): UK NDNS 2000 19-64
 Population filter: Gender: Male, Female
 Age: between 0 and 110

Name: Substance: AdditiveX - Survey: UK_19-64; Metal: Yes; Foods: Beer; SetOff: No

☒ I understand that running this assessment means that my computer will be busy for between 5 and 20 minutes per survey. (This calculation time depends on several factors, including the computer's processing ability, the number of food categories selected and the simulated population size.)

Cancel Previous Run

Figure 3-114: Assessment Summary

It is left up to the user to access the output of the resulting assessment (i.e. the assessment Substance: AdditiveX – Survey: UK_19-64 - Metal: Yes - Foods: Beer - SetOff: No)

3.3.4 Importing a Table of Concentration Data

This feature allows users to bypass the migration model by uploading concentrations of substances in foods. To use this feature fill the cells of the relevant template table(the template table can be found here: <http://facet.cremeglobal.com/>), selecting from the drop down lists where appropriate. Save the file in a csv format. Open the software and select “Import New Table” as shown in Figure 3-

115Figure 3-115

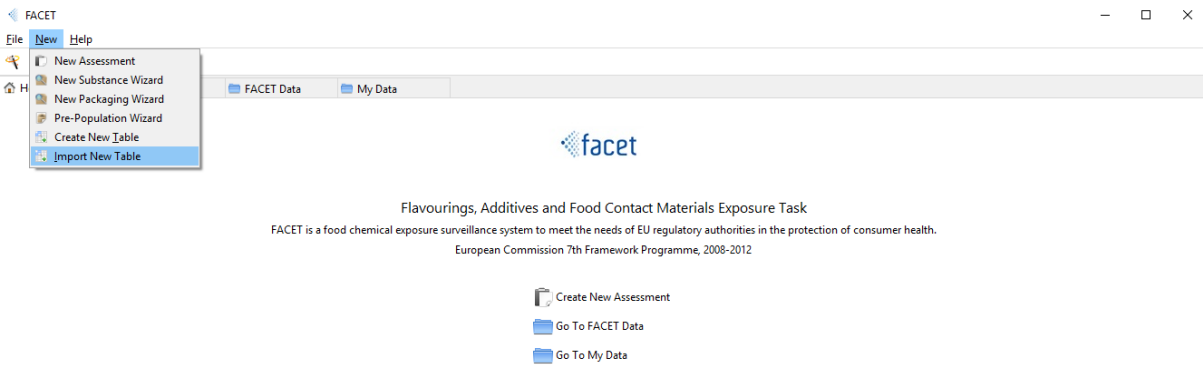


Figure 3-115: Select Import New Table

Select an existing substance or create a new substance. Type in the csv file’s location in the “Input file” field or locate the “Input file” by clicking the “choose” button and select the csv template. In the output field, the name “New Table” is automatically given to the table, you may change this. Click the “Run” button. The new table can be found under the “My Data” tab in the “My Packaging Data” folder as shown in Figure 3-116

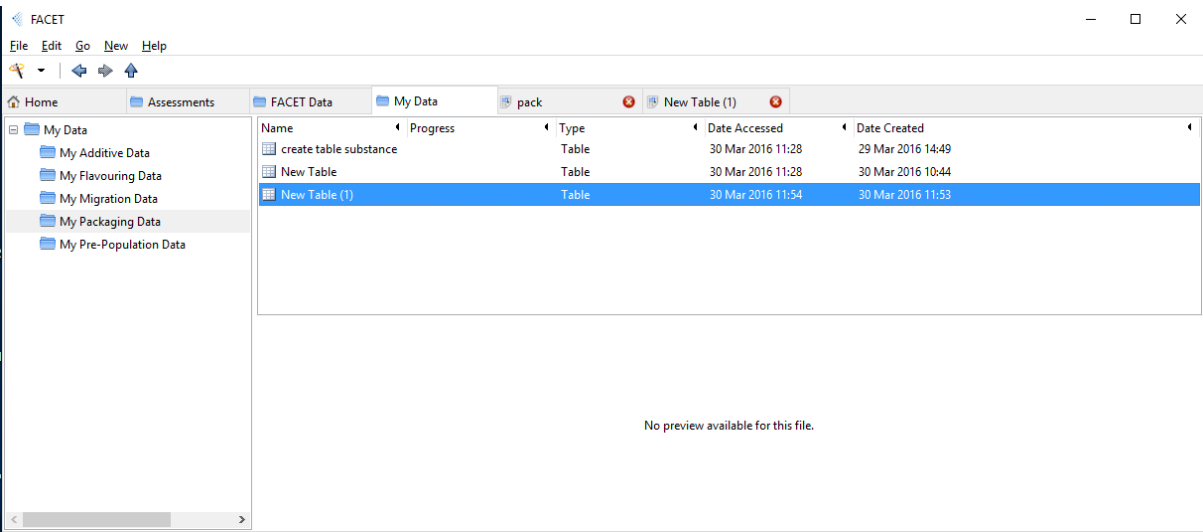


Figure 3-116: The Location of the Imported Table

3.3.5 Exercises for Entering extraction/migration data

Use the “New Packaging Wizard” and “New Assessment” tools to initially establish the concentration levels of the given substance in the chosen foods in (i) and hence run an exposure assessment for the chosen country in (ii).

- (i) Existing Substance in Non-Metal Pack Type
 - a. Metal: No
 - b. Existing Substance: Yes
 - c. Substance: 1976 (ATBC)
 - d. Include set-off: No
 - e. Surface / Volume: 0.6
 - f. (Pack) Type: Flexible Wrapper /Bag/ Pouch
 - g. Material Code: M.9.2 OPP not voided
 - h. Concentration: 900
 - i. Thickness: 25
 - j. Food Categories: P.1.2.1 Processed Cheese
 - k. Pack Size: 1000.00
 - l. Time: 10 days
 - m. Temperature: 40 degrees centigrade

 - n. Table Name: Substance: 1976 – Metal: No – SetOff: No – Food: Cheese
- (ii) Use the results in (i) to run a Packaging Assessment satisfying the following criteria:
 - a. Pack Types: All
 - b. Food Categories: P.1.2.1 Cheese
 - c. Survey: UK NDNS 2000 19-64
 - d. Assessment Name: Substance: 1976 – Metal: No – SetOff: No – Food: Cheese
 - e. Consumer Loyalty: Without
 - f. Use SetOff: No

3.4 Working at Lowest Tier

Earlier we ran the assessment “Substance: 1084 –Survey: UK_19-64 – All Foods” as highlighted in Figure 3-117.

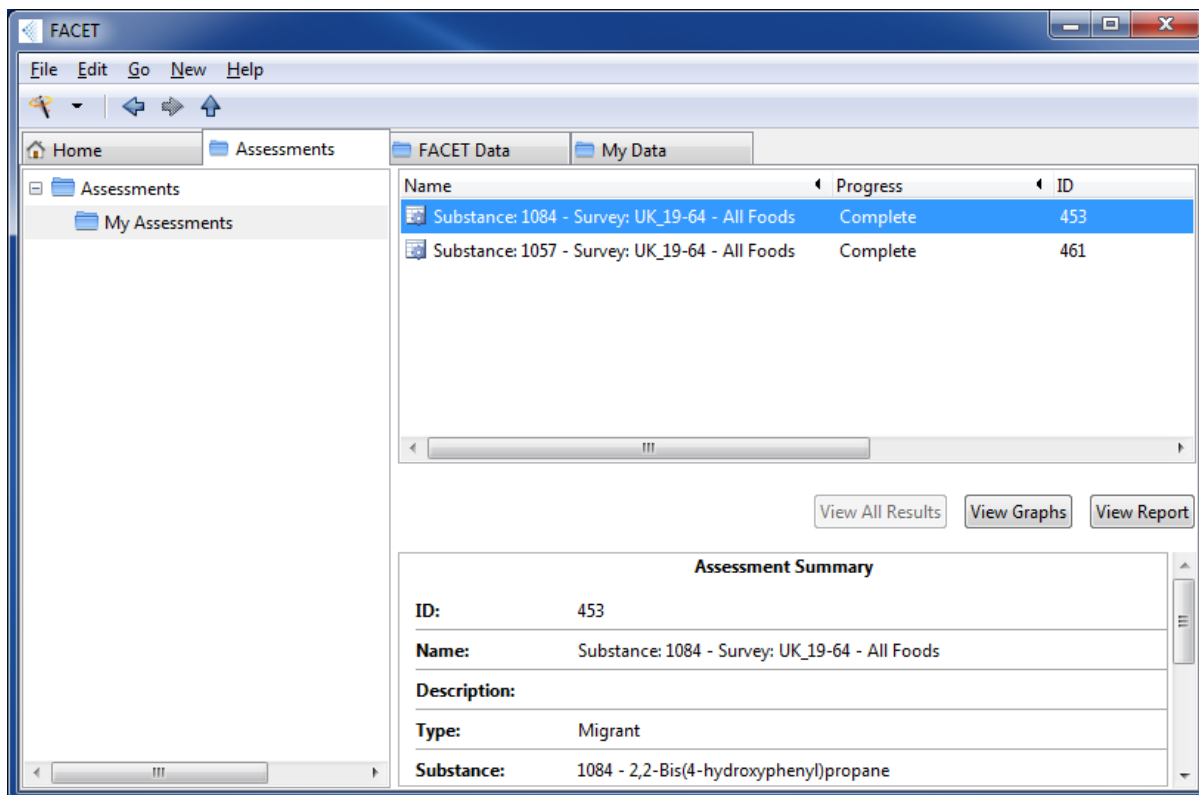


Figure 3-117: Already Run Assessment

Graphs relating to the outputs of the assessment are illustrated in Figure 3-118.

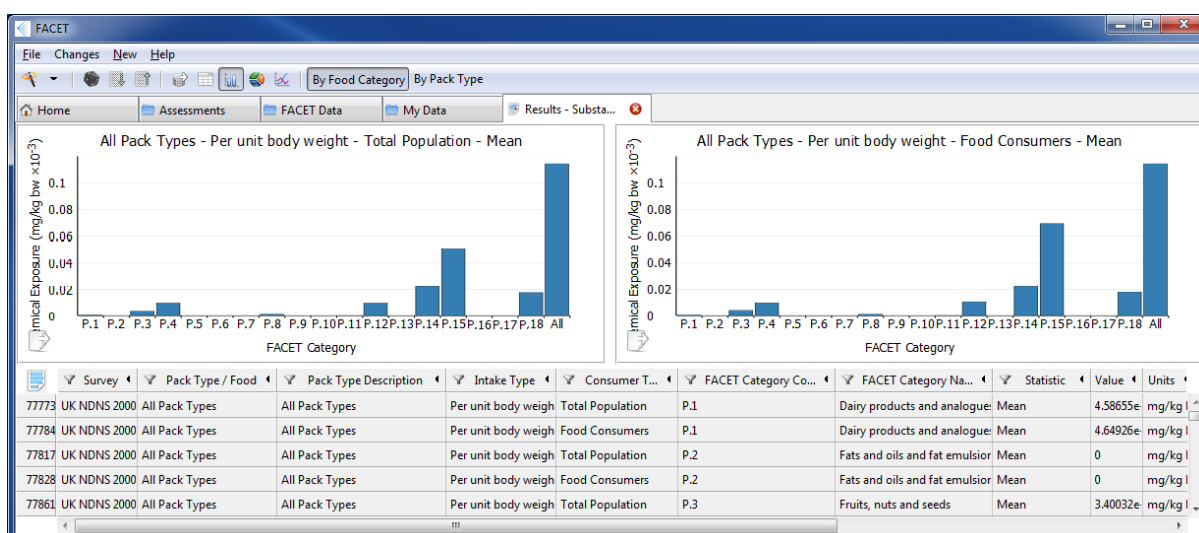


Figure 3-118: View Graphs

We observe that food categories P.15, P.14, P.18, P.12, P.4 are the main drivers, in that order. However no detail is provided at a lower tier. This means that when an assessment is run and

“Include lowest tier results” is not selected, the exposure value for this food is described only for the parent food (e.g. P.15 Alcoholic Beverages) and not the foods at lower tiers (e.g. P.15.1.1 Beer, P.15.1.2 Cider, etc.). We have two options. The first is to repeat the assessment selecting the option at all tiers. This is time and memory intensive. The other option is identify the main drivers of the exposure and repeat the assessment at lower tiers for that food. An example of this is provided below where a lower tier assessment is run for P.15 (Alcoholic beverages). At this point the user follows the steps illustrated in Figure 3-119 to Figure 3-125.

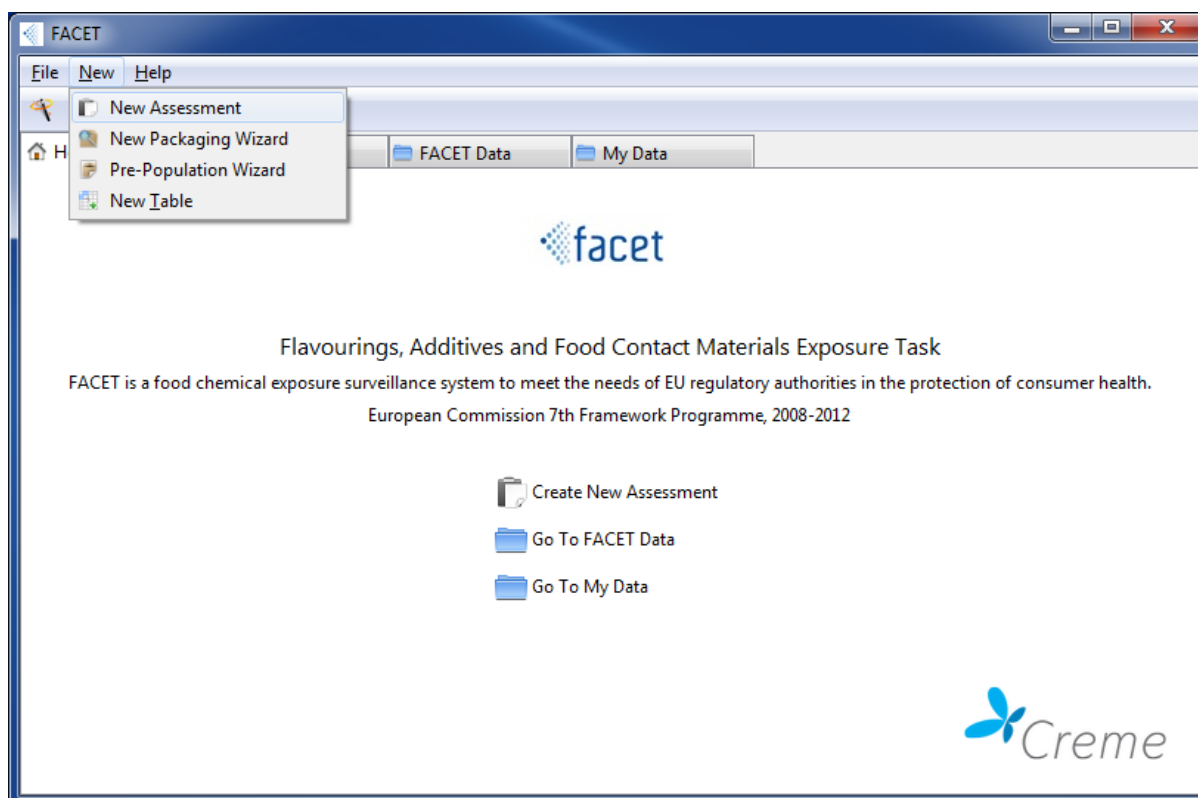


Figure 3-119: New Assessment

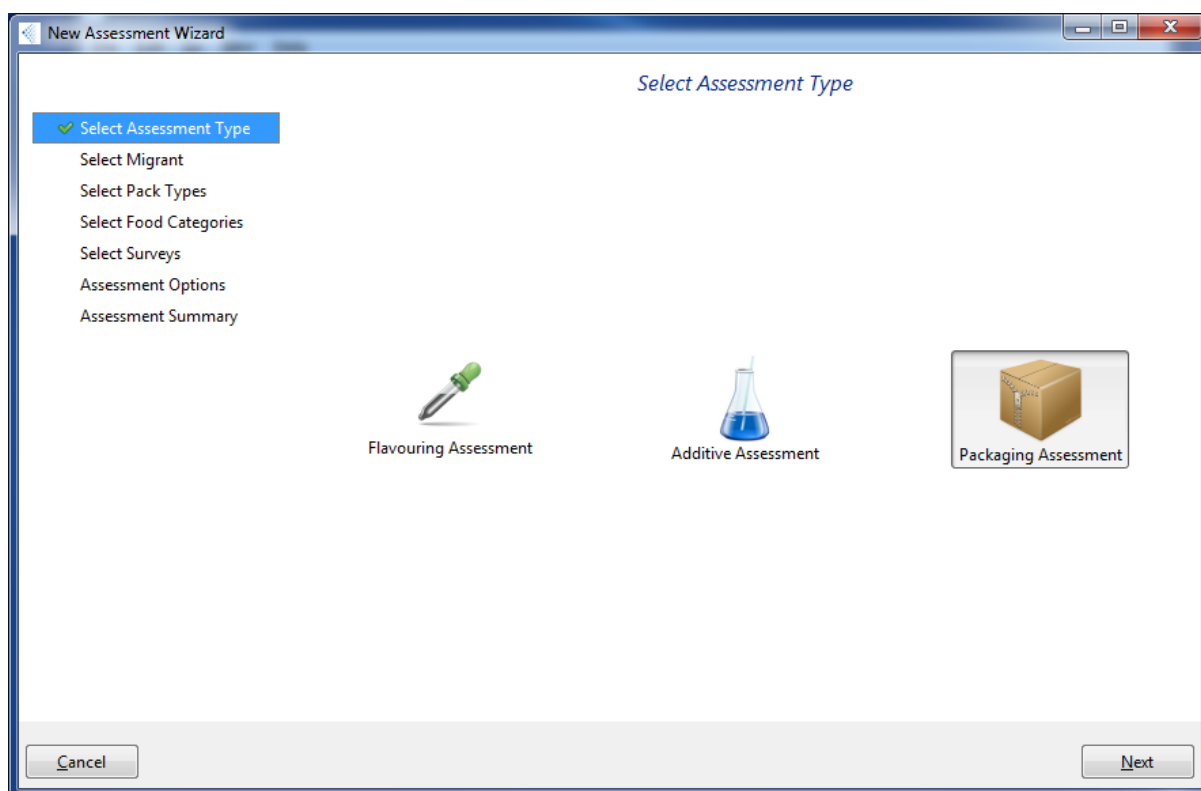


Figure 3-120: Packaging Assessment

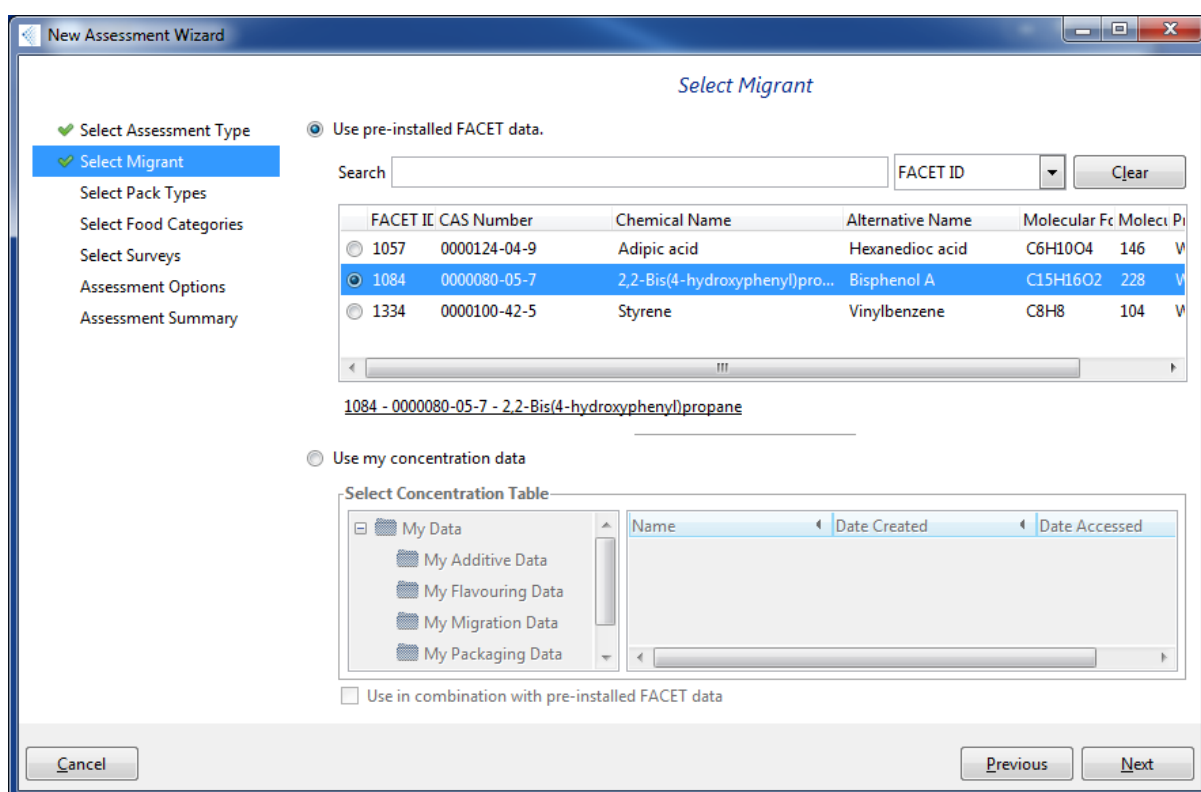


Figure 3-121: Select Migrant

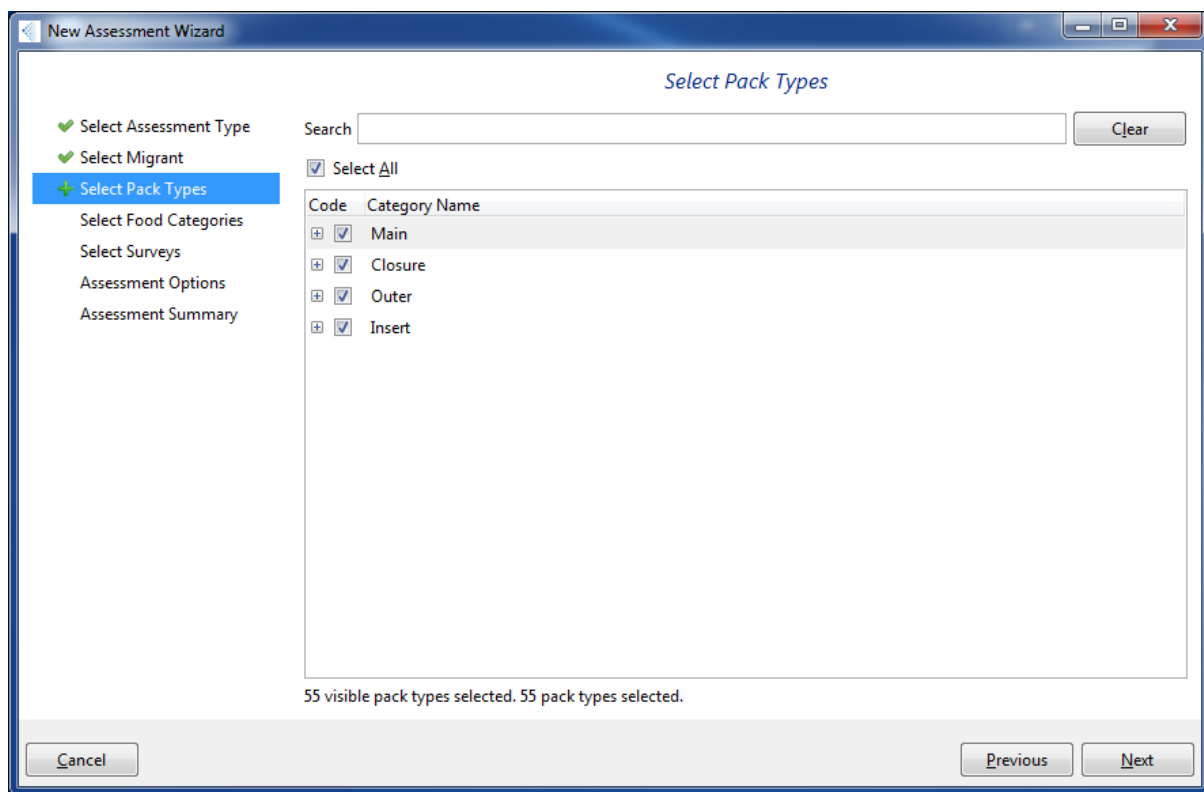


Figure 3-122: Select Pack Types

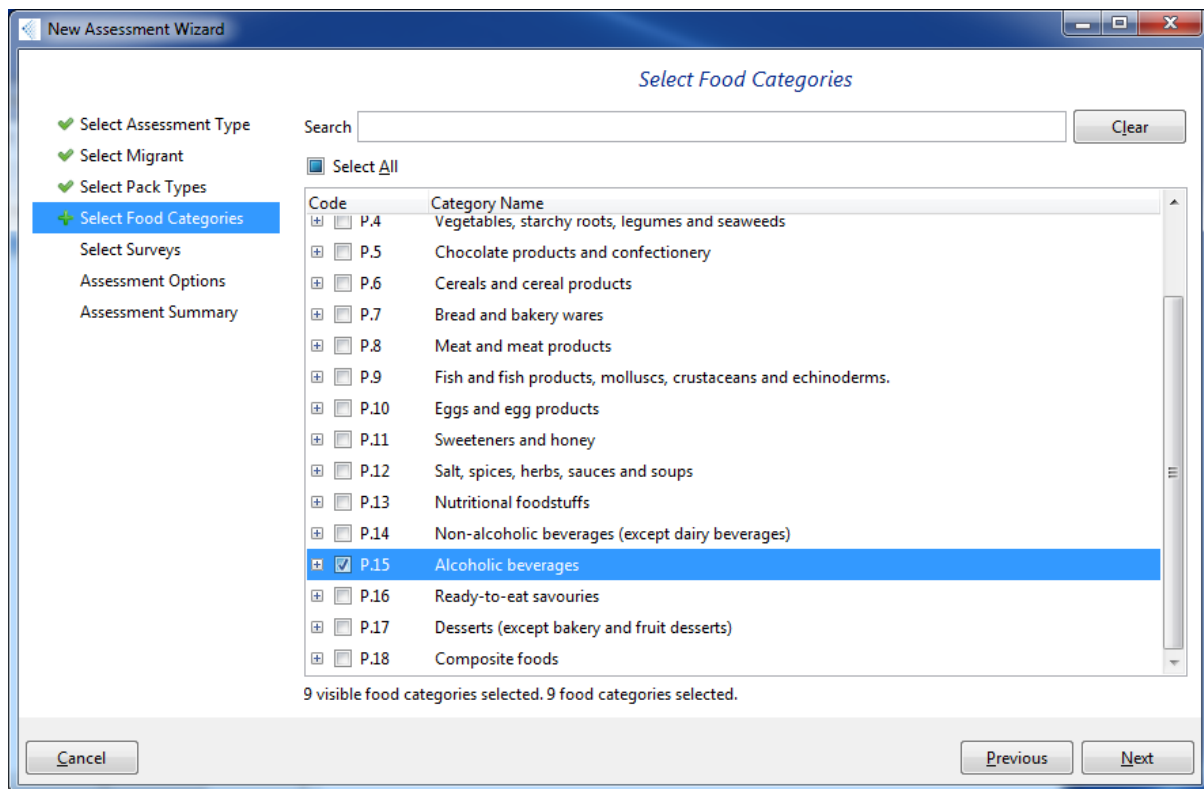


Figure 3-123: Select Food Categories

New Assessment Wizard

Select Surveys

☒ Select Assessment Type
☒ Select Migrant
☒ Select Pack Types
☒ Select Food Categories
☒ **Select Surveys**
 Assessment Options
 Assessment Summary

Search

☒ Select All

- ☐ UK
 - ☐ UK NDNS 1992 1-4
 - ☐ UK NDNS 1997 4-18
 - ☒ UK NDNS 2000 19-64
 - ☐ UK NDNS 1995 Over 65
- ☐ Hungary
- ☐ France
- ☐ Poland
- ☐ Finland
- ☐ Ireland
- ☐ Italy
- ☐ Portugal

Gender: ☒ Male ☒ Female

Age (years): Between and

Filtered Population Size: 1631

Figure 3-124: Select Survey

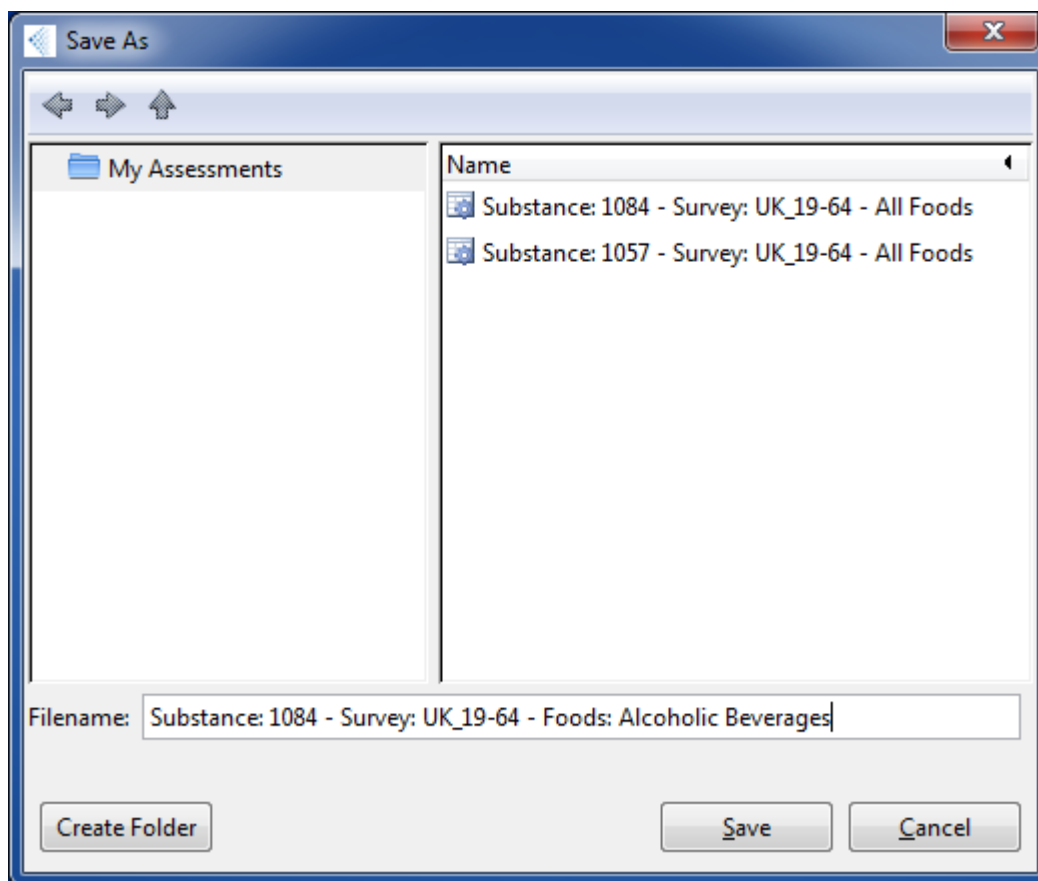


Figure 3-125: Naming Assessment

Now the user can access the “Assessment Options” and in particular the “Advanced Options”. In the “Advanced Options” the user should tick the “Include lowest tier results” option (as shown in Figure 3-126). This has the effect of providing exposure data for every food in the “P.15 Alcoholic Beverages” category. Without selecting this option, the software calculates an exposure only at the highest tier (i.e. P.15 Alcoholic Beverages).

New Assessment Wizard

Assessment Options

- ✓ Select Assessment Type
- ✓ Select Migrant
- ✓ Select Pack Types
- ✓ Select Food Categories
- ✓ Select Surveys
- Assessment Options**
- Assessment Summary

Assessment location: /Assessments/My Assessments/Substance: 1084 - Survey: UK_19-64 - Foods: Alcoholic Choose

Description:

Assess using: ☐ With consumer loyalty ☒ Without consumer loyalty

☐ Use SetOff

Exclude homegrown/homemade foods: ☒

Exclude restaurant/canteen foods: ☒

☐ Advanced Options

Include lowest tier results: ☒

Minimum simulated population size: 1000

Exposure statistics:

| | | | |
|--|--|---|---|
| <input checked="" type="checkbox"/> Mean | <input checked="" type="checkbox"/> Standard Deviation | <input checked="" type="checkbox"/> Minimum | <input checked="" type="checkbox"/> Maximum |
| <input checked="" type="checkbox"/> P25 | <input type="checkbox"/> P50 | <input type="checkbox"/> P75 | <input checked="" type="checkbox"/> P90 |
| <input checked="" type="checkbox"/> P95 | <input type="checkbox"/> P97.5 | <input type="checkbox"/> P99 | <input type="checkbox"/> P99.9 |

Other percentiles:

Cancel Previous Next

Figure 3-126: Selecting Lowest Tier Results

The assessment is now summarised and run as shown in Figure 3-127.

New Assessment Wizard

Assessment Summary

- ✓ Select Assessment Type
- ✓ Select Migrant
- ✓ Select Pack Types
- ✓ Select Food Categories
- ✓ Select Surveys
- ✓ Assessment Options
- ✓ Assessment Summary**

Type: Migrant

Substance code: 1084

Substance name: 2,2-Bis(4-hydroxyphenyl)propane

Concentration data: Use pre-installed FACET data

Food categories:

| Code | Category Name |
|----------|---|
| P.15 | Alcoholic beverages |
| P.15.1 | Beers, Ciders, Lagers and Flavoured Alcoholic Beverages |
| P.15.1.1 | Beer |
| P.15.1.2 | Cider |
| P.15.1.3 | Flavoured Alcoholic Beverages |

Survey(s): UK NDNS 2000 19-64

Population filter: Gender: Male, Female
Age: between 0 and 110

Name: Substance: 1084 - Survey: UK_19-64 - Foods: Alcoholic Beverages

Description:

Assessment location: /Assessments/My Assessments

☒ I understand this running assessment involving output at all food tiers can take 10 - 45 minutes per survey. (This calculation time depends on several factors, including the computer's processing ability, the number of food categories selected and the simulated population size.)

Cancel Previous Run

Figure 3-127: Assessment Summary

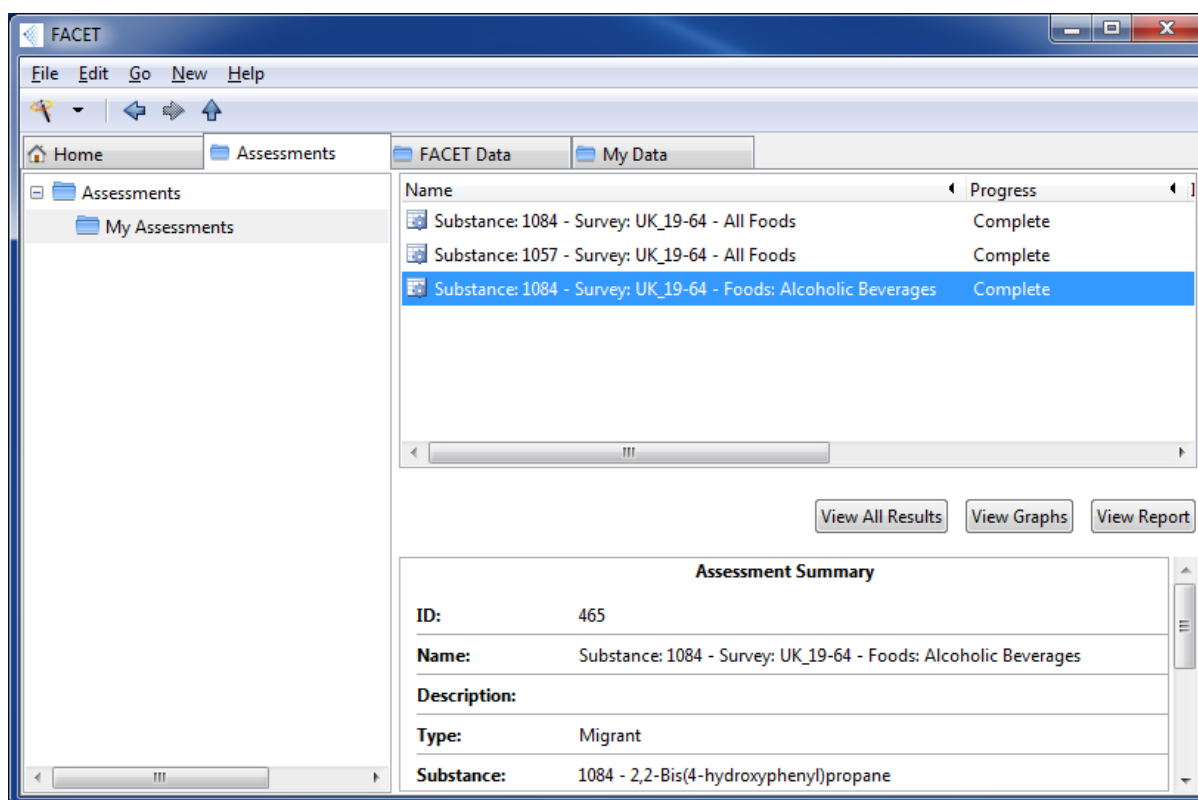


Figure 3-128: Assessment Complete

Following completion, the viewer has different options to view the results. If the user selects the “View All Results” option (shown in Figure 3-129 and Figure 3-130) then it is possible to view the results at the lowest tiers. However the “View Graphs” and “View Report” options still only provide exposure data at the higher tier (i.e. P15 Alcoholic Beverages in this example).

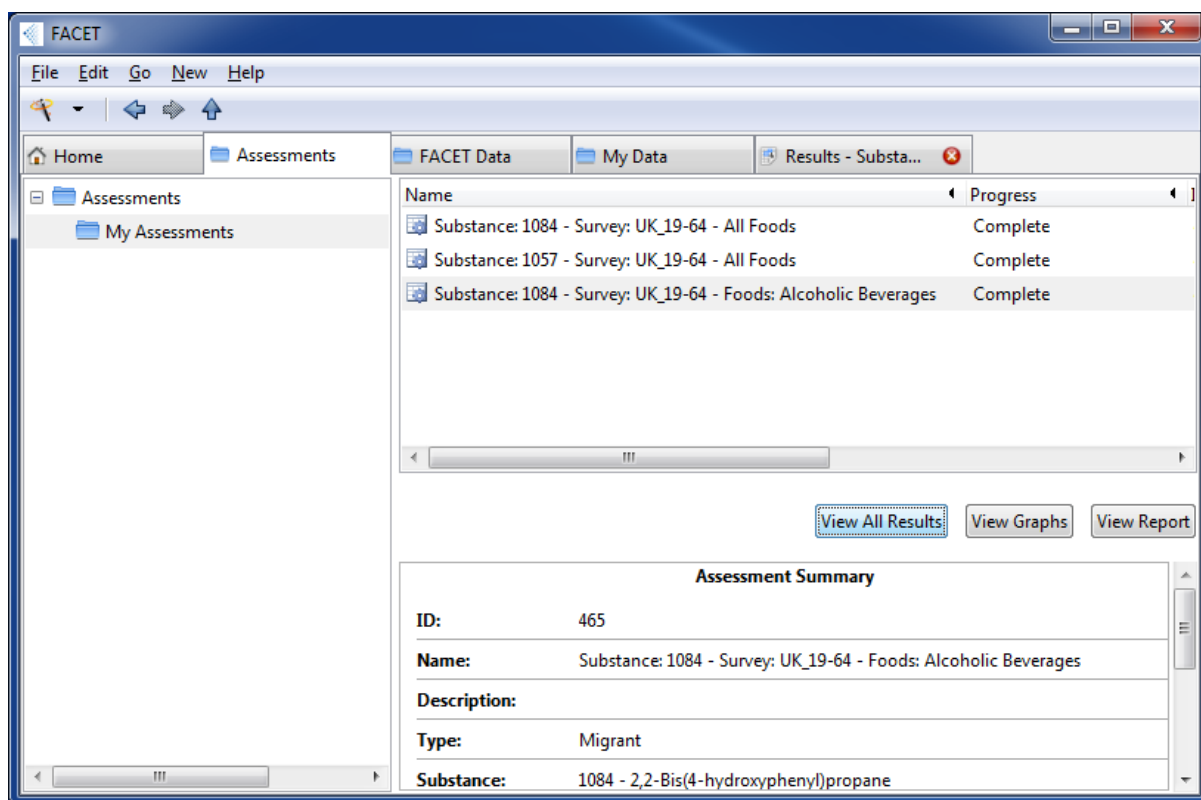


Figure 3-129: Select View Results to check at Lowest Tiers

| | Consumer T... | FACET Food C... | FACET Food N... | Statistic | Value | Units | Standard Error | 90' |
|-------|---------------|-----------------|--------------------------|-----------|-----------|----------|----------------|-----|
| 20199 | Population | P.15.3.1 | Spirits | Mean | 0 | mg | 0 | |
| 20221 | Population | P.15.3.1 | Spirits | Mean | 0 | mg/kg bw | 0 | |
| 20243 | Population | P.15.1.1 | Beer | Mean | 217.287 | g | 10.512 | |
| 20265 | Population | P.15.1.1 | Beer | Mean | 2.77259 | g/kg bw | 0.13542 | |
| 20287 | Population | P.15.1.2 | Cider | Mean | 19.7386 | g | 4.42073 | |
| 20309 | Population | P.15.1.2 | Cider | Mean | 0.272662 | g/kg bw | 0.069255 | |
| 20331 | Population | P.15.1.3 | Flavoured Alcoholic Beve | Mean | 9.95113 | g | 1.37345 | |
| 20353 | Population | P.15.1.3 | Flavoured Alcoholic Beve | Mean | 0.13709 | g/kg bw | 0.0207831 | |
| 20375 | Population | P.15.2.1 | Wine | Mean | 53.1079 | g | 2.6555 | |
| 20397 | Population | P.15.2.1 | Wine | Mean | 0.721355 | g/kg bw | 0.0318761 | |
| 20419 | Population | P.15.3.1 | Spirits | Mean | 6.03594 | g | 0.495681 | |
| 20441 | Population | P.15.3.1 | Spirits | Mean | 0.0822354 | g/kg bw | 0.00642261 | |
| 20463 | Population | P.15.1.1 | Beer | Mean | 0 | mg | 0 | |
| 20485 | Population | P.15.1.1 | Beer | Mean | 0 | mg/kg bw | 0 | |
| 20507 | Population | P.15.1.2 | Cider | Mean | 0 | mg | 0 | |

Figure 3-130: Examining Results

3.4.1 Exercises for Working at Lowest Tier

Exercises for Working at Lowest Tier

- (i) Run a Packaging Assessment (at the lowest tier) satisfying the following criteria
 - a. Substance: 1084
 - b. Pack Types: All
 - c. Food Categories: P.14 Non-alcoholic beverages
 - d. Survey: UK NDNS 2000 19-64
 - e. Loyalty: Without
 - f. Use SetOff: No