Studio Toolkit for Labels

User Guide

ESKO

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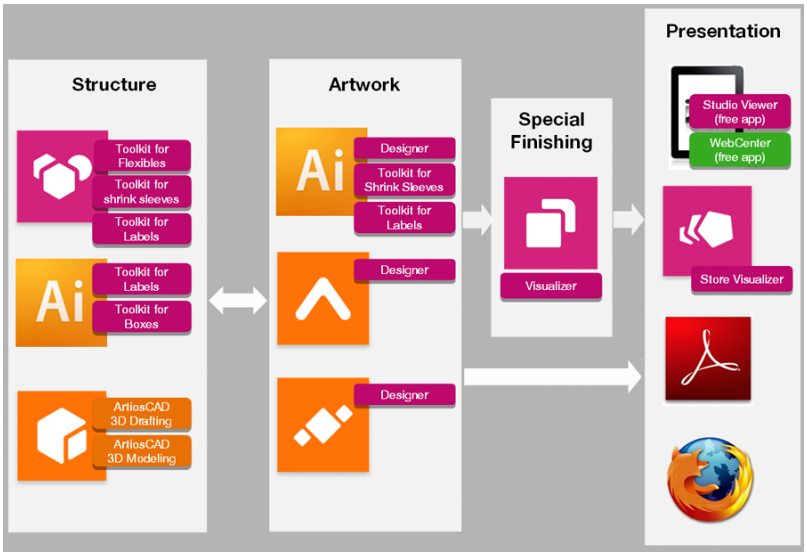
2. Introduction

2.1 About Studio

Studio is a unique set of tools for 3D packaging design made specifically for packaging artwork professionals.

Working in 3D for packaging typically consists of 3 steps: first you create a shape or "structure". Next you apply artwork to that shape. And finally you present the result as an image, movie, etc.

To achieve this, Studio has different modules (shown as purple rectangles in the image underneath). It takes you through different software applications, such as Adobe Illustrator and the Studio Toolkit.



Step 1: Create a Structure

The first step is to prepare a 3D packaging shape, with a matching 2D key line template. This shape can come from one of the Studio Toolkits, from ArtiosCAD or from Esko's Shape server.

The **Studio Toolkits** allow to create or modify structural design files for a specific use or workflow. Every Studio Toolkit consists of an Adobe Illustrator plugin and/or specific functionality inside the **Studio Toolkit** application. The Studio Toolkit application allows to import, create, modify or combine shapes, and save the result as a collada file.

- With the **Studio Toolkit for Boxes** plugin you can clean up die-drawings of boxes, and fold them into a 3D shape.
- You can use the **Studio Toolkit for Flexibles** functions in the Studio Toolkit application to create 3D models of flexible packaging.

- With the **Studio Toolkit for Labels** plugin, you can create round objects with one or more labels, and automatically warp artwork for conical labels. With the Studio Toolkit for Labels functions in the Studio Toolkit applications, you can draw labels on existing shapes.
- With **Studio Toolkit for Shrink Sleeves** in the Studio Toolkit application you can create a heat shrink sleeve around one or more shapes, and simulate the distortion. Using the Studio Toolkit for Shrink Sleeves plugin, you can apply counter distortion to your artwork.

Step 2: Apply Artwork

The second step is to make sure the production artwork fits to the structure.

In Adobe Illustrator, ArtPro or PackEdge, you can use **Studio Designer** to get a preview of the 3D object with its artwork, check every detail, and fix specific issues.

With **Studio Visualiser** you can simulate print substrates and a wide range of print and finishing effects.

Step 3: Share

You can share your 3D design using the Studio Viewer or Webcenter, or use your 3D design in Store Visualizer.

In Studio Designer and Visualiser, you can export your 3D designs to share realistic virtual packaging mock-ups as movies, images or interactive 3D.

2.2 About Studio Toolkit for Labels

Studio Toolkit for Labels consists of two parts: the Labels functionality in the **Studio Toolkit** application, and the Studio Toolkit for Labels Illustrator plug-in.

With Studio Toolkit for Labels, you can

- create a 3D file of a round container, and add one or more labels to it. See *Creating a revolved shape with labels* on page 8
- apply conical distortion on artwork for conical labels. See *Conical Warp* on page 14
- import an existing 3D file of a container, and add one or more labels to it. See *Add a label in Studio Toolkit* on page 17
- create a 3D file of a round container to be used in Studio Toolkit for Shrink Sleeves. See the Studio Toolkit for Shrink Sleeves documentation.

The result is always a Collada file, containing the container (in one or more parts) and the labels, where each label is a printable part.

That Collada file can be used as the Structural Design file to apply artwork on in Studio Designer or Studio Visualizer, or as shape to import in Studio Toolkit, e.g. to apply a shrink sleeve. In this latter case, the shape doesn't need to contain a printable part.

2.3 Trial and Licenses

Local Licenses

This software is protected against unauthorized use. You can try the software for free for 30 days. If you want to use the software after that, you need to purchase and activate a license. To purchase a license, please visit *http://www.esko.com/store* . The Esko Plug-ins window is where you can start the free 30 day trial or activate a purchased license. If this window does not pop up automatically when starting Illustrator, please select **Help** > **Esko** > **Esko Plug-ins...** from the Illustrator menu. There is also a more advanced tool to manage your licenses and trials: the Esko Local License Manager. This application is installed in your Applications folder (Mac) or see **Start** > **Programs** > **Esko** > **Local License Manager** > **Manage Local Licenses...** (PC).

Network Licenses

If you purchased a network license sever (site floating license server), make sure to configure it by selecting **Help** > **Esko** > **Esko Plug-ins...** . Select the **Network License Setup** button at the bottom of the Esko Plug-ins dialog.

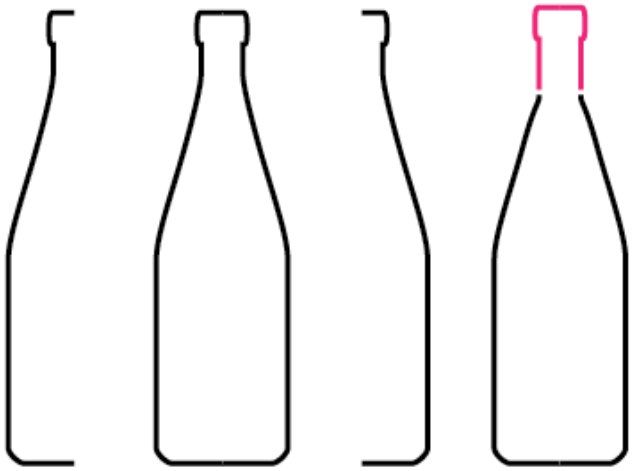
Please note that you need to activate network licenses in the Esko Server License Manager on your Network License server.

3. Creating a revolved shape with labels

In the Studio Toolkit for Labels plugin in Illustrator, you can create a shape (e.g. bottles) based on a profile path, and add labels to it.

3.1 Create a profile path

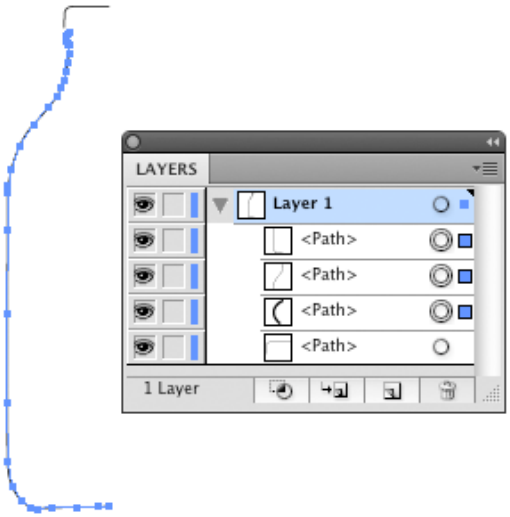
The first step in creating a revolved shape is creating or selecting the Illustrator paths to be used as profile paths.



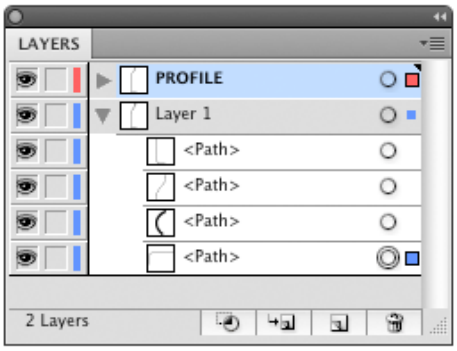
Studio Toolkit for Labels supports half profiles, full profiles and multi-part profiles (based on multiple paths). Multi-part profiles can be used to set different materials for different parts (for example the bottle and the cap).

It is important to connect paths that can share the same material. You can use the **Connect and Clean** function for this.

In the example below, the shape consists of two parts. The bottle itself which will have glass as material and the cap which will be metal.



1. Select the paths that make up the bottle. In the example above, the profile of the bottle consists of three paths.
2. Select **Window** > **Esko** > **Studio Toolkit for Labels** > **Connect and Clean** . This will create a layer called "PROFILE" that contains the connected path.



3. Select this path and the path making up the cap, to go to **Revolve and Add Labels** .

3.2 Revolve a profile and Add Labels

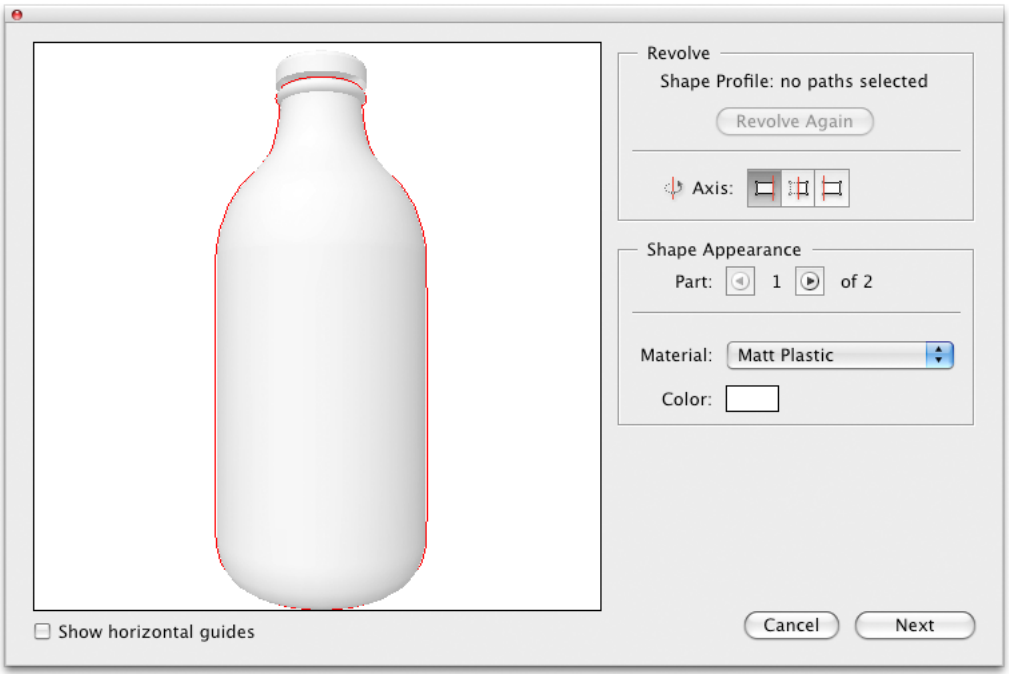
Revolve and Add Labels , the main dialog to create shapes and labels, can be opened from **Window** > **Esko** > **Studio Toolkit for Labels** > **Revolve and Add Labels...**

3.2.1 Revolve

The first step in the Revolve and Add Labels procedure is to create the shape by revolving a profile path.

1. Select one or more Illustrator paths to be used as profile paths.
2. Select **Window** > **Esko** > **Studio Toolkit for Labels** > **Revolve and Add Labels...**

   The **Revolve and Add Labels** dialog is opened.



   On the left is a 3D rendering of the result. You can click and drag to change the viewing angle.
3. Set the **axis** to be used for the revolution.

   The same axis will be used for all paths of a multi-part profile.
4. For each of the parts, define the **Material** . You can choose Matt Plastic, Glossy Plastic, Clear Plastic, Glass or Metal.
5. If necessary, click the **Color** field to define the color for the material.

   Note:

   In this version of Studio Toolkit for Labels, the transparency will NOT be shown in Studio Designer and Acrobat Reader. This will only be visible in Studio Visualizer.
6. Click **Next** .

3.2.2 Add Labels

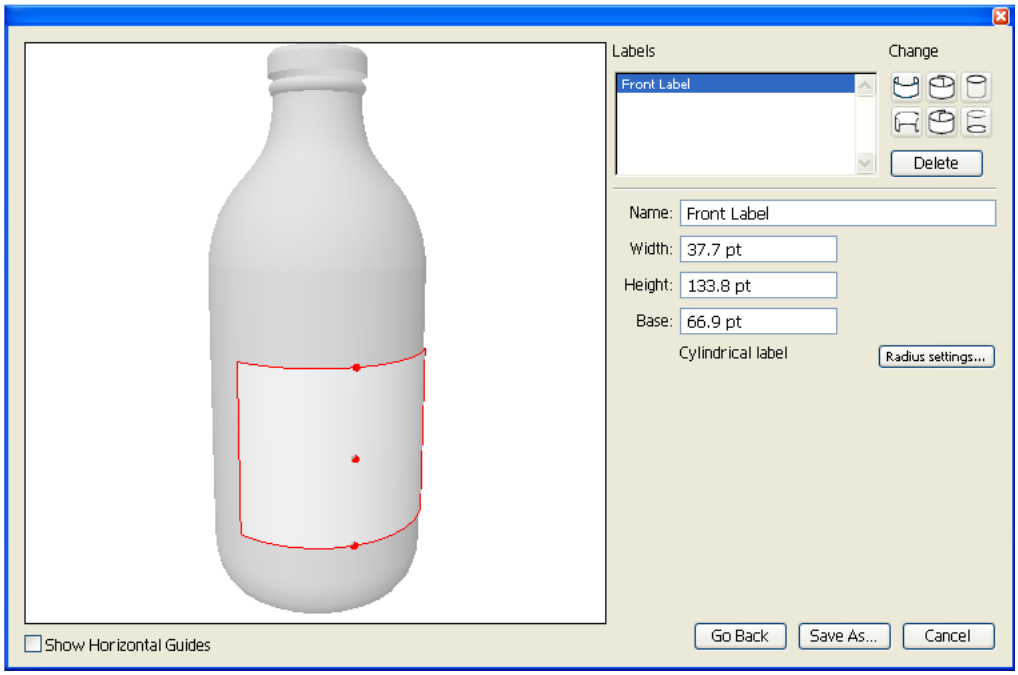
In this second step, you can add the labels.

Note:

If your goal is to create a shape that you then will use in Studio Toolkit for ShrinkSleeves, you do not have to add a label, just click 'Save as' to save the result as a Collada file.

The **Labels** list shows all defined labels.

1. Add a label.



There are 6 types of labels to choose from:

- Front label
- Back label
- Roll around label (right/end over left/begin)
- Roll around label (left/begin over right/end)
- Top label
- Bottom label

2. Select the label by clicking inside the label to change the properties of the label.
3. Enter the **name** for the label.

   The default name is based on the selected type, such as "Front Label" or "Round label".
4. Define the **width** for Front or Back labels. For conical labels, the width is measured at mid height.
5. Define the **Overlap** for Roll-around labels. The overlap is always centered at the backside.
6. Set the **height** for the Front, Back or Roll-around label.

> **Note:**
>
> You can also change the height of a label interactively by dragging the handles in the 3D view

7. Set the **Radius** for a Top or Bottom label
8. Check the **Radius Settings**

   The Revolve and Add Labels dialog will show if the label is cylindrical or conical.

Every label except Top and Bottom has a top radius and a bottom radius. By default, both radius are calculated automatically from the position of the label and the size of the container. If these are equal, the label is cylindrical. If they are different, the label is conical.

To manually change the Radius settings:

a) Click the **Radius Settings** button

The Radius Settings dialog will open

b) Disable **Calculate radius automatically from shape**
c) Enter the Top of Label and the Bottom of Label radius
d) Click **OK**

Note:

The specified radius settings are used for the 2D calculations. Yet the label in 3D still fits perfectly to the container shape.

9. Check the Distortion warning.

See *Distortion* for more information

10. Click **Save As** to save the result as a Collada file.

11. Define the name and location for the file.

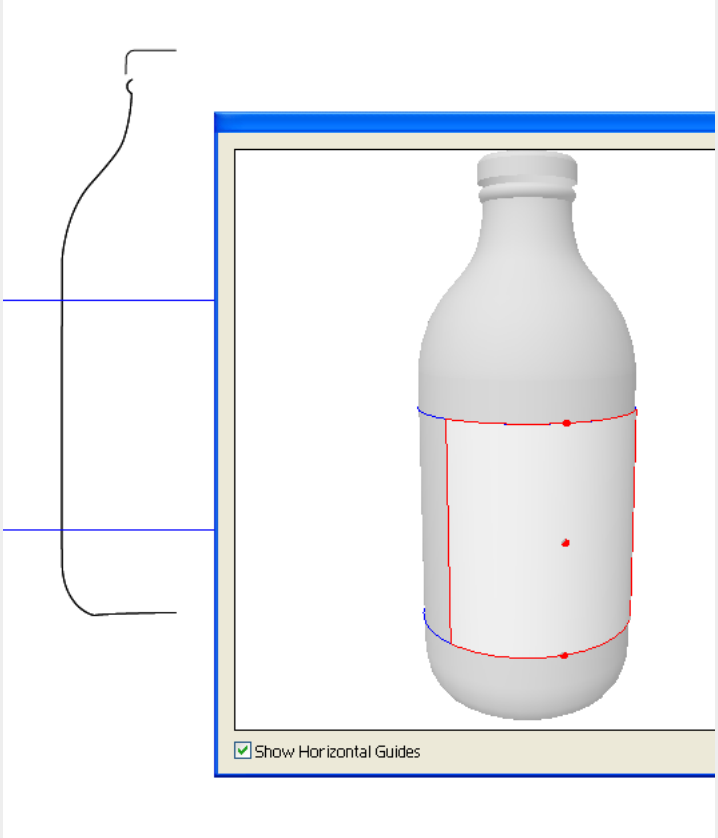
12. You get the option to place the file directly in the document.
If you click **Yes** :

- the **Studio** window will show the Collada file, replacing any earlier ARD or Collada files.
- the selected items will be moved to a locked layer.

You can also use the Collada file in Studio Visualizer or Studio Toolkit for Shrink Sleeves.

Note:

Please note that you can also change the height or the position of your label by dragging the handles on the label in the 3D view. Even more, if you know what the height of your label needs to be in the Illustrator document view, just add two horizontal guides to the Illustrator document view and toggle on 'Show Horizontal Guides' in the Revolve dialog. You now can drag the top and bottom of your label to the horizontal guides.



3.2.3 Distortion

Adhesive labels can always be folded to cylinders or cones, but on many other shapes, some distortion (stretch or wrinkling) is required to make the label fit. A typical label substrate only allows for very small amounts of distortion.

The software allows distortion up to 3%. If there is distortion below 3%, a warning will be shown in the Revolve and Add Labels dialog, and the distorted areas are highlighted.

You can disable the **Allow distortion to fit the shape** option to avoid distortion of your label.

3.3 Conical Warp

Studio Toolkit for Labels contains functionality to warp artwork based on conic labels.

This functionality contains:

- The **Conical Warp** function in **Window** > **Esko** > **Studio Toolkit for Labels** . See *To apply conical warping*
- The **Release Warp** function in **Window** > **Esko** > **Studio Toolkit for Labels** . See *To reverse the conical warping*

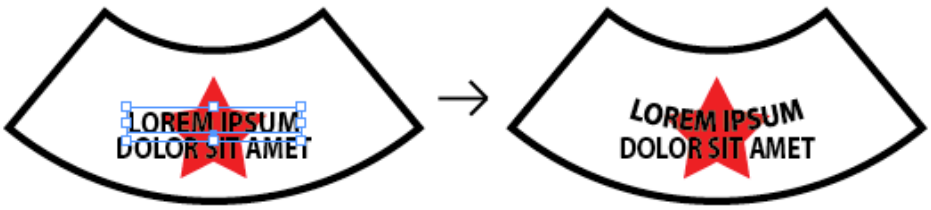
3.3.1 To apply conical warping

Using Studio Toolkit for Labels, you can modify artwork to match the shape of a conic label.

Obviously, this can only be done after creating a shape and adding labels in the **Revolve and Add Labels** dialog.

1. Select the objects you want to modify. Make sure this artwork overlaps with a conical printable part.
2. Select **Window** > **Esko** > **Studio Toolkit for Labels** > **Conical Warp**

This will instantly apply a warp on the selected objects. The warp is calculated around the center of the bounding box of the selected objects.



Note:

The warping is non-destructive, sou you can still easily remove the distortion envelope, and text is still editable.

Note:

To apply the warping, Studio Toolkit for Labels creates Illustrator Envelope Distort objects. Adobe Illustrator has some limitation on Envelope Distort objects: you can not distort linked images. For this, you need to embed the images first.

3.3.2 To reverse the conical warping

1. Select objects that were warped using the **Conical Warp** function
2. Select **Window** > **Esko** > **Studio Toolkit for Labels** > **Release Warp**

The warping of these objects is reversed, restoring them in their original state.

3.4 Using the Collada files in the Structural Design plug-in

Studio Toolkit for Labels creates Collada files with one or more printable parts, so they can be used in Studio Designer and Studio Visualizer, and can be placed and saved using the Structural Design plug-in.

Immediately after creation, you get the option to place the file in the current Illustrator document.

3.4.1 Multiple printable parts in Structural Design

Each label is a printable part.

If there is only one printable part, its boundaries (rectangle or arc-shape) are shown in the locked Structural Design layer, named after the Collada file.

If there are multiple printable parts, a message dialog will show up, allowing to select one printable part from a list with the names of all printable parts. The selected printable part will be placed in the Illustrator file.

3.5 Using the Collada files in Studio Designer

Studio Toolkit for Labels creates Collada files with one or more printable parts, so they can be used in Studio Designer and Studio Visualizer.

Immediately after creation, you get the option to place the file in the current Illustrator document.

The **Refresh** button can be used to update the artwork in 3D based on the current document.

3.5.1 3D Guides

Studio shows 3D guides on ARD folded structures, and provides the same 3D guide feature for conical labels.

A 3D guide is a set of snapping-line segments in your Illustrator document. Whereas on folded structures the guides represent the horizontal and vertical planes in 3D, on a conical label, the horizontal plane is represented by a snapping arc.

4. Add a label in Studio Toolkit

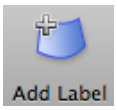
In the Studio Toolkit application, you can "brush" a label on an existing shape (collada file, obj, ...).

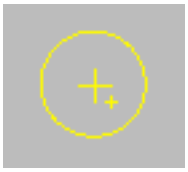
1. Import the shape into Studio Toolkit. See *Import Into* on page 20
2. Add a label, using the **Add Label** tool. A 2D tab will be added for every label you create. See *Drawing a label on a shape* on page 17
3. You can check the maximum distortion, and if necessary use the **Improve Distortion** function. See *Distortion* on page 18
4. If necessary, repeat the previous steps to add another label
5. Save the file in Studio Toolkit.

The result will be a Collada file that you can use in Studio Designer or Studio Visualizer. It will contain a Printable Part for every label.

4.1 Drawing a label on a shape

In Studio Toolkit, you can draw a label on a 3D shape.

1. Select the shape on which you want to add the label
2. Click the **Add Label** button 

The shape will be represented with all the triangles that it consists of.
3. Draw your label.
   - If you click and drag from inside the label, or if no label exists yet, your cursor will be yellow, and anything you brush will **add** the triangles to the label. 
   - If you click and drag from outside the label, your cursor will be blue, and anything you brush will **remove** it from the label.
   - Using the slider at the top of the window, you can define the **Brush size**. You can also change the brush size using the shortcuts **[** and **]**.

   Note: The label you draw can NOT contain any holes. You won't be able to add or remove areas that would result in a hole in the label.
4. To stop drawing the label, click the **Done** button at the top of the window. You can also click the **Add Label** button again, or click the **Modify Area** button in the pane on the right.

Note: After clicking **Done**, it is advisable to check the **Maximum Distortion**. See *Distortion* on page 18

Tip:

- If you received a curve representing the shape of the label (i.e. a die-cut in Illustrator), you can save this as a .PNG or .JPG file, and import it onto the 2D view of the label to check if the brushed area has the right size and shape. See *Using graphic files* on page 21
- If the edges of your label are too rough, and you have Studio Visualizer, you can select a slightly oversized area and use the **Die Cut** operation in Studio Visualizer to trim away the unwanted parts.

4.2 Modifying a label

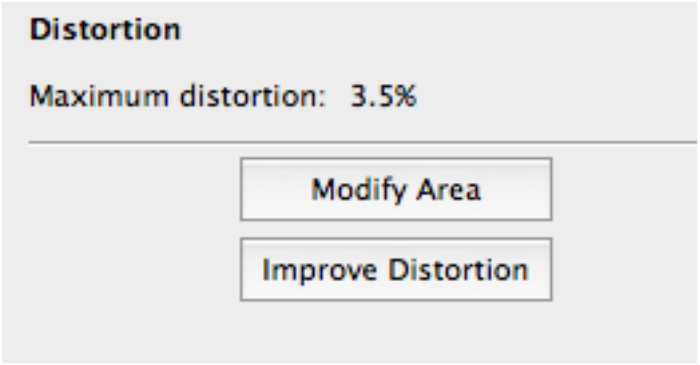
To modify a label you drew earlier:

1. Select the label
2. In the pane at the right, click the **Modify Area** button.

   Note: If you would click the **Add Label** button, you would create a new label instead.
3. Modify the area by adding or removing to the label.

4.3 Distortion

If a label is selected in Studio Toolkit (i.e. not while you are drawing it, but after you clicked **Done**), the pane at the right will show the **Maximum distortion**.



In Studio Toolkit, you can draw a (virtual) label on any surface. However, a real adhesive label (pressure-sensitive label) can not be applied to just any area of a container. It depends on the curving: on surfaces with too much curving, a real label would either have a stretch or wrinkle to fit the shape.

This is shown in the **Maximum distortion** value. A high value means that the virtual label is stretched or wrinkled.

If the distortion is higher than 3% and if you need accurate artwork placement, we suggest you try the **Improve Distortion** function.

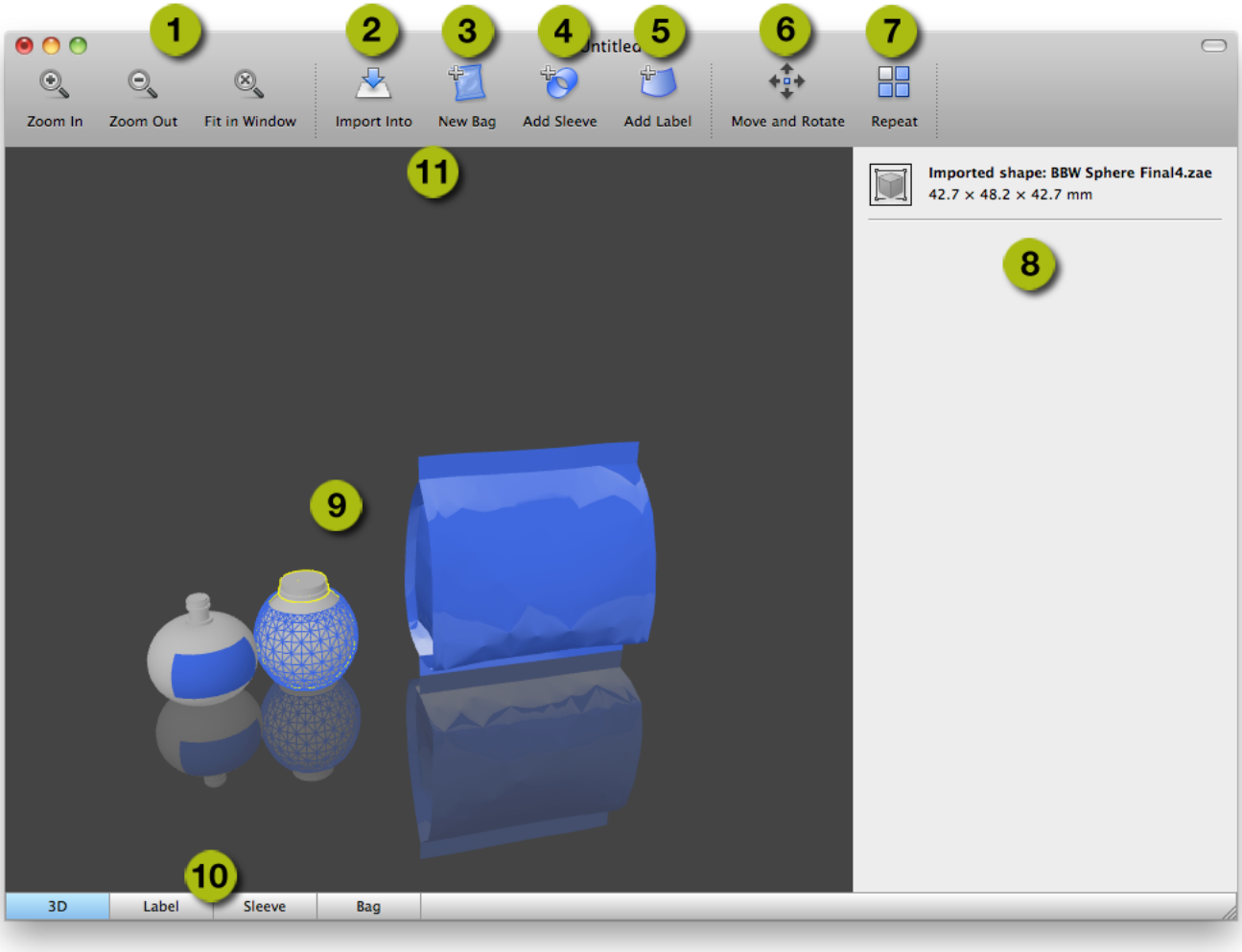
By clicking the **Improve Distortion** button, you can try to change the way the 3D label is unfolded. The process tries to lower the Maximum distortion by distributing the distortion over the complete label. The improvement will continue until you click the **Done** button, or until a message "Reached the optimal distortion" is given.

If after **Improve Distortion** you still have a distortion value that is too high, you have probably selected an area that is not suited for a label.

Note: Modifying the area will reset the improvement.

4.4 Using the Studio Toolkit application

The **Studio Toolkit** application is a standalone application allowing to import, edit and create 3D objects, and save the object(s) as Collada file.



1. The **Zoom** buttons, allowing to change the zoom factor of the preview window. You can click and drag to rotate the view.

2. **Import Into** allows to import 3D or image files. See *Import Into* on page 20
3. The **New Bag** tool, used in Studio Toolkit for Flexibles
4. The **Add Sleeve** tool, used in Studio Toolkit for Shrink sleeves
5. The **Add Label** tool, used in Studio Toolkit for Labels
6. The **Move and Rotate** tool. See *Move and Rotate* on page 22
7. The **Repeat** button. See *Repeat* on page 24
8. The **Settings** pannel, allowing to change or view the parameters on the selected object
9. the **Preview** panel
10. The different **Tabs**. See *Tabs* on page 25
11. When performing some specific functions (such as Move and Rotate, ...), a settings bar is added underneath the Toolbar.

4.4.1 Saving and opening Collada files

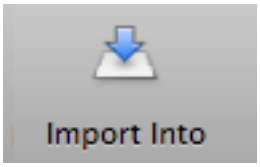
When saving a file from **Studio Toolkit**, the file is saved as a Collada file, containing the shape and all printable parts.

This means the file can be opened by any application that is capable of handling Collada files, such as Studio Designer.

However, the Collada files saved by Studio Toolkit also contains native Studio Toolkit information, allowing to reopen the file in Studio Toolkit, maintaining its editability, the active tab, zoom and view factor, etc.

Note: When dropping a Collada file onto the Studio Toolkit application, Studio Toolkit will determine if it is a Collada file saved in Studio Toolkit or not. A native Studio Toolkit Collada file will be opened, a regular Collada file will be imported.

4.4.2 Import Into

Using the **Import Into** button 

you can import a 3D shape into your open scene. If you already have a 3D object in your scene, the newly imported 3D shape will be placed next to it.

For more info on how to obtain a 3D file, see *Obtain a 3D file for a container* on page 21

When importing a Collada file, any printable parts from this file will be preserved when saving to a Collada file.

Note: Collada files saved by Studio Toolkit can also be opened instead of imported. In that case, the file will be reopened as it was saved, with the same active tab, zoom and view, and maintaining full editability. See *Saving and opening Collada files* on page 20

You can also use the **Import Into** button to import an image (JPG or PNG) in a 2D tab (e.g. the "Sleeve" tab), to get a preview of this image on the corresponding 3D object. See *Using graphic files* on page 21

Note: Studio Toolkit can not import .bag files. If you need to compose flexible bags or boxes saved as .bag files, we suggest you convert these to Collada files in Studio Designer first.

Obtain a 3D file for a container

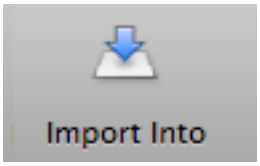
There are several ways to obtain a 3D file :

- You can get a shape on Esko's online Shapes store
- You could hire a 3D artist to make the shape with a 3D modeling tool, such as Cinema 4D, 3DS Max, Maya or Strata. If you are experienced with these tools, you could do it yourself.
- Contact the mold-designer and ask him for a Collada or OBJ file of the container.
- If you have a physical sample of the object, you can use a tabletop 3D laser scanner. See www.nextengine.com for an example of such a scanner. This device can output .obj files.
- If the object is a round shape, you can use Studio Toolkit for Labels to create it yourself. For more information, we refer to the Studio Toolkit for Labels documentation.

The format needs to be collada (.zae or .dae) or .obj. Collada stands for COLLAborative Design Activity for establishing an interchange file format for interactive 3D applications) These 3D files do not need a printable part at this stage, you will add that yourself in the next step.

Using graphic files

In Studio Toolkit you can import graphic files to get a preview of the result, and to assist in positioning e.g. the overlap. You can also use it to place a technical drawing on the sleeve.

Using the **Import Into** button 

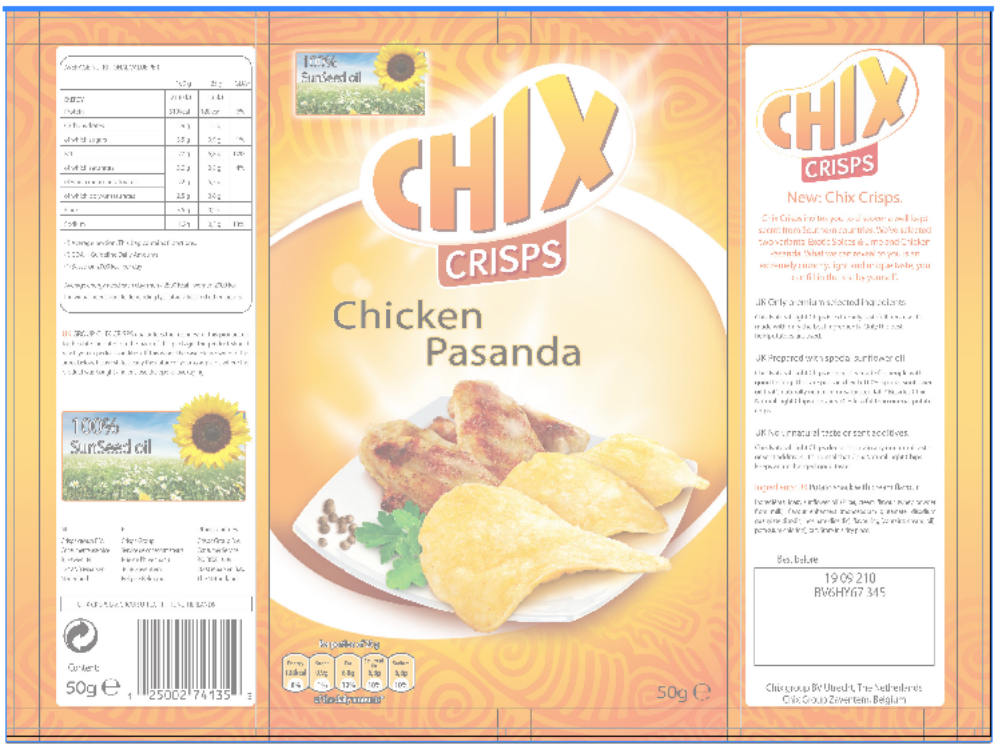
you can import an RGB JPEG or PNG file.

- If a 2D tab is selected, the image will be imported in that tab
- If an object is selected in the 3D tab, the image will be imported in the corresponding 2D tab, and this 2D tab will become active

By default, the image will be aligned with the bottom left corner of the image on the bottom left corner of the printable part. You can move the graphic by clicking and dragging the border. The border (left, right, top or bottom) or corner you clicked, will become magnetic, and snap to the borders and folding lines of the 2D shape, allowing easy alignment.

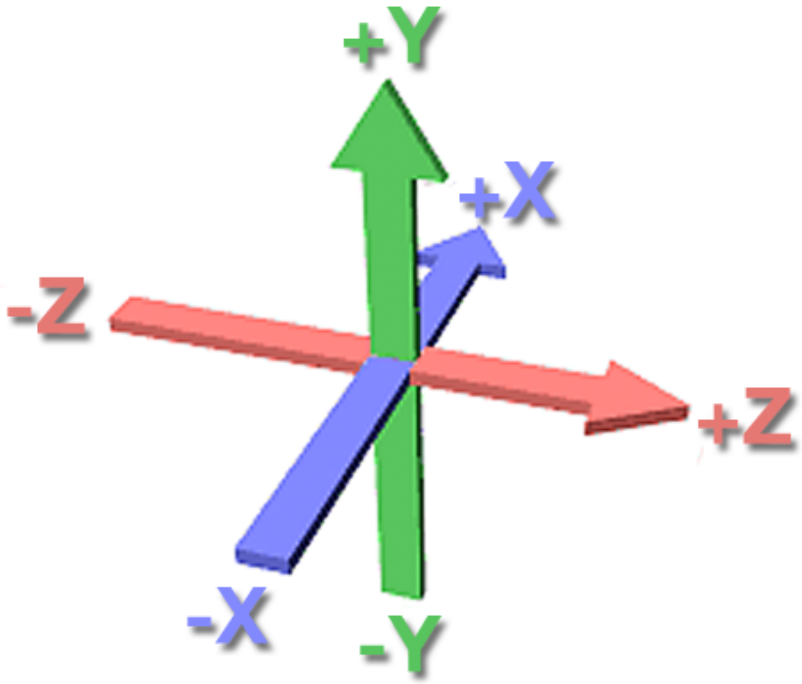
This magnetism is shown using a thick blue line.

The 3D tab will show a 3D representation of the file with the corresponding graphics on it.

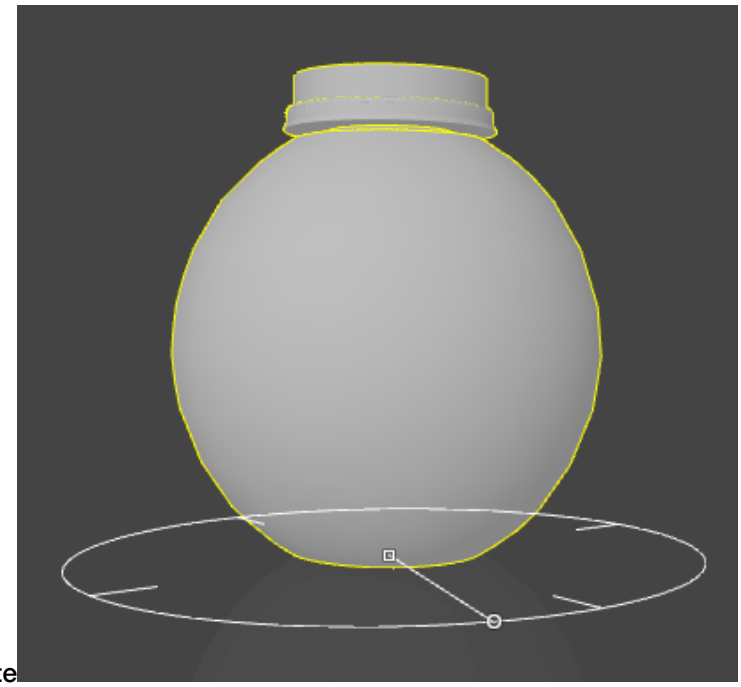


4.4.3 Move and Rotate

Since you are working in a 3D environment, you can move and rotate any object based on 3 axis.

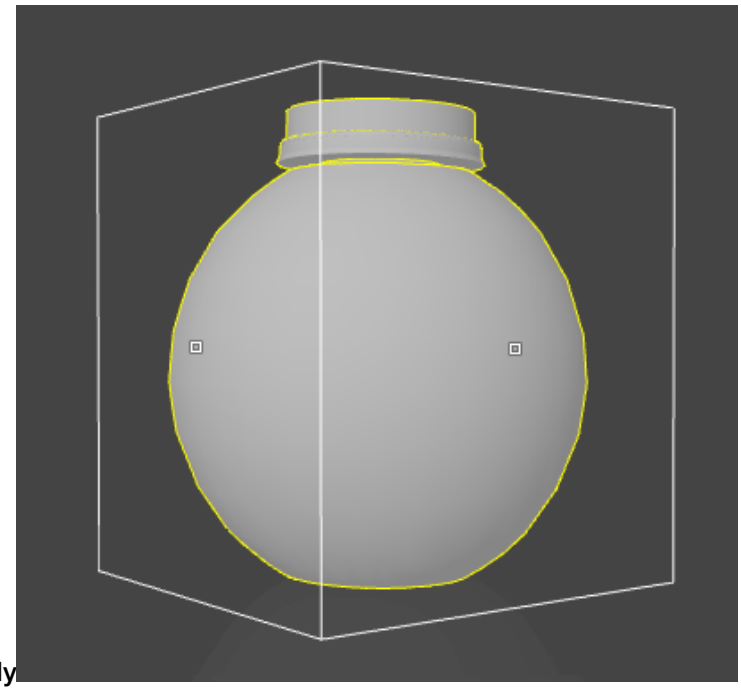


If the **Move and Rotate** tool is selected, you can select one of three modes in the settings bar:

- 

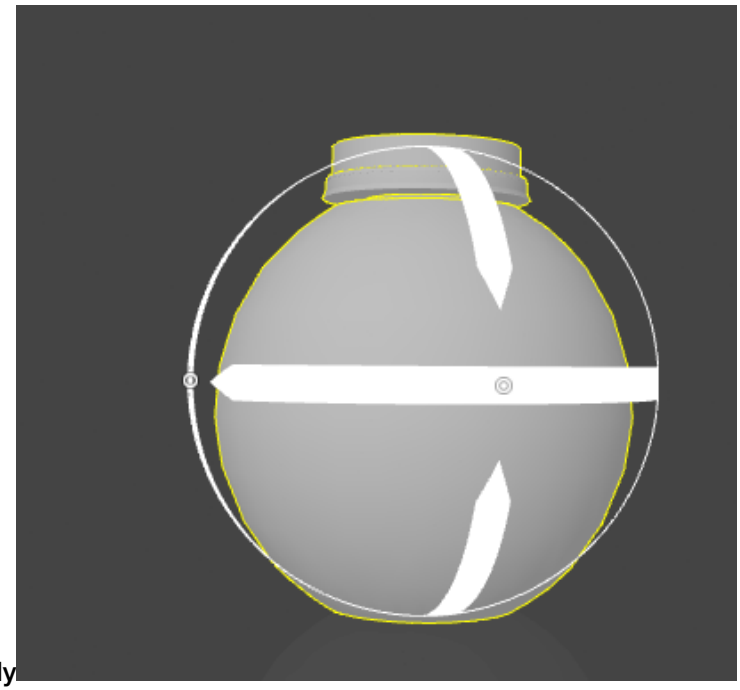
  Simple Move and Rotate

  - Click and drag the center anchorpoint or change the **Offset X** and **Z** value to move the object over the X and Z axis. Holding down the shift while dragging will constrain the movement to either only along the X or Z axis.
  - Click and drag the anchor point on the circle or change the **Rotation** value to rotate the object on the Y axis. Holding down the shift while dragging will constrain rotation to multiples of 45 degrees.
  - Simple Move and Rotate keeps the object aligned with the floor. However, by setting the **Distance from Floor** option in the settings bar, you can also move the object over the Y axis,.

- 

  Move only

- Click and drag any of the anchorpoints or change the **Offset X**, **Y** or **Z** value to move the object over the X, Y and Z axis.

- 

Rotate only

- Click and drag any of the anchorpoints or change the **Rotate X**, **Y** or **Z** value to rotate the object over the X, Y and Z axis. Holding down the shift while dragging will constrain rotation to multiples of 45 degrees.

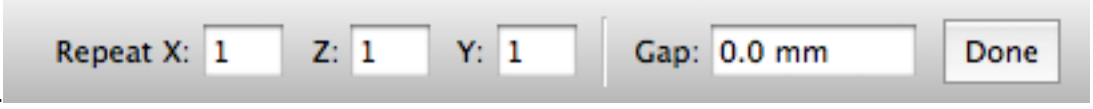
Tip: After rotating, you might need to align the object with the floor again. You can do so by switching to Simple Move and Rotate, and set the **Distance from floor** to zero.

If you click and drag but not on any of the anchor points, you will change the camera position, but the object will NOT move. This might be necessary to make all handles visible.

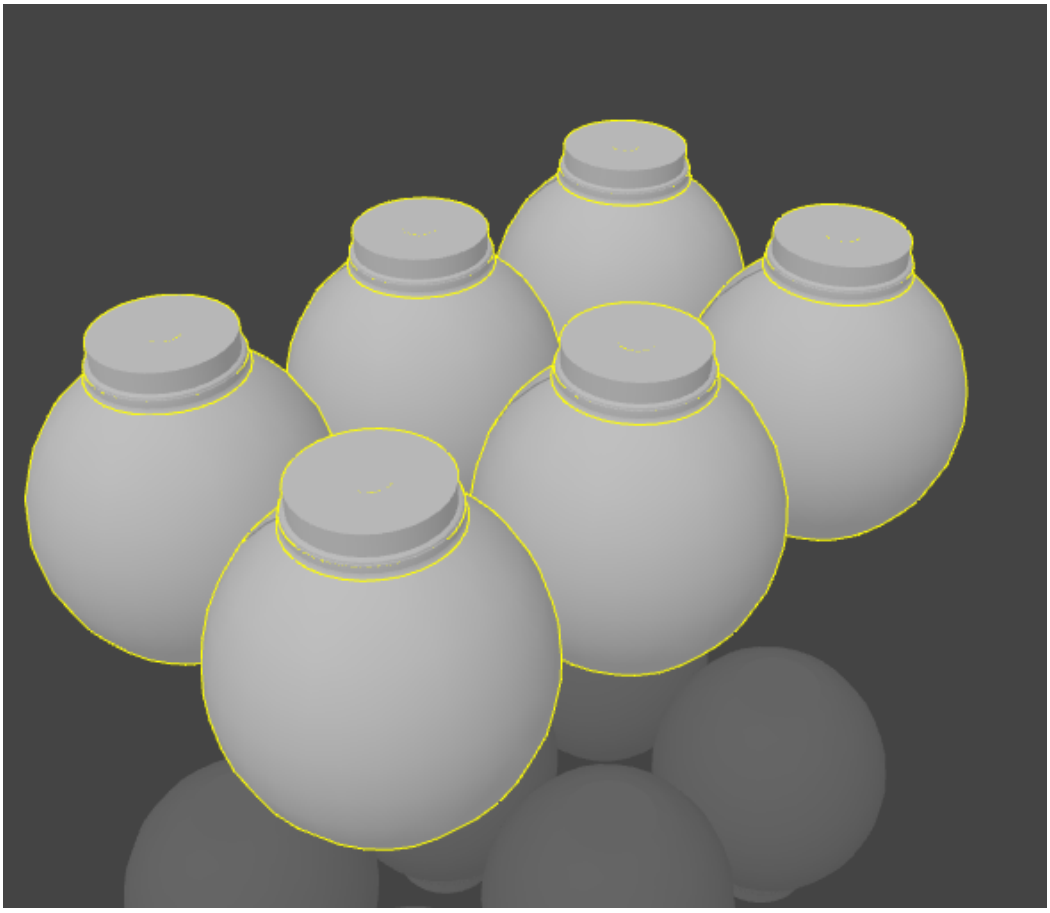
Note: When moving or rotating a 3D shape, the depending parts (sleeves and labels) are moved / rotated along.

4.4.4 Repeat

Using the **Repeat** button, you can create a simple repeat of the selected object(s).



- Enter the number of repeats you want along the X, Z and Y axis
- Enter a **Gap** value to add distance in between the objects
- Click **Done**



After the repeat, you will have multiple instances of a single object. This means making changes to one of the objects will also modify the others, while you can move and rotate the instances independently.

Note: If you have one instance selected, you can use **Edit** > **Select all copies** to select all instances.

4.4.5 Tabs

At the bottom of your Studio Toolkit window, you can see the different **Tabs**.

First is always the **3D** tab. Next to that, a 2D tab is shown for every 2D object created in Studio Toolkit: a Sleeve, a Label, a Bag, ...

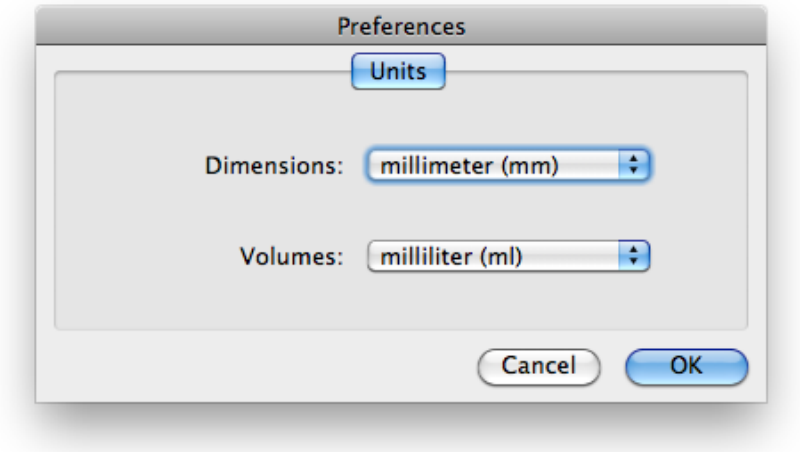
Deleting an object will also delete the corresponding 2D tab. Different instances (created using **Repeat** share the same 2D tab. In that case the 2D tab will be deleted if the last instance of the object is removed.

You can rename any 2D tab by double clicking the name and entering the new name.

Note: The name entered for the 2D tab will be stored as the name for the technical drawing in the collada file, and will thus be used when importing the collada file e.g. in Studio Designer.

You can switch between the 3D tab and the 2D tab of the selected object, by choosing **View** > **Go to 3D** or **View** > **Go to 2D** , or by using its shortcut Cmd-G

4.4.6 Preferences

You can open the preferences by choosing **Studio Toolkit** > **Preferences...** (Mac) or **Edit** > **Preferences...** (Windows).

In the preferences, you can set the unit to be used for **Dimensions** (millimeter, centimeter or inch) and for **Volumes** (milliliter, centiliter or US fluid Ounce).