4.3. Transactional Spreadsheets

Unlike the Aggregated spreadsheet connection, **Transaction spreadsheet connection** is designed to import sales and other data in a form of a set of transactions. Aggregation of the transactions is performed automatically while the data is being imported. There are several data aggregation periods which you can select from before the import has been started. These are:

- Days
- Weeks
- Months

Thus, if you keep sales history and inventory information in a database, ERP, accounting or inventory management system, and have an ability to make an extract of sales transactions as Excel or CSV file, you can use the **Transaction spreadsheet connection** to create a new Streamline project.

Watch a video tutorial (3:20)

Data That Can Be Imported

Transactional spreadsheet connection is able to import the same data types as **Database connection**. To learn more about them, address to the Data types article.

Data Format

Streamline allows importing the data through an Excel or CSV file. Since Excel files are multi-sheet documents, they allow importing almost all the data types. Currently only the Substitutions information can't be imported using Excel files. CSV-files are able to import a significantly narrower range of the data types than Excel files.

CSV Files

A CSV-file should contain data types from both Transactional data and Item information (see the table below).

	Demand Planning	Inventory Planning
Transactional data	• **Date** • **Quantity sold** • **Item code** • **Location** • **Channel** • **Sales price/unit** or **Transaction revenue** • **Transaction profit**	• **On hand** (as remaning) or **On hand change**

	Demand Planning	Inventory Planning
Item information	• **Item categories** • **Location categories** • **Item description** • **Location description** • **Info field** • **Sales price/unit**	• **Last on hand** • **Lead time** • **Lead time variance** • **Order cycle** • **Qty to receive** • **Delivery date** • **Rounding** • **Min lot** • **Max lot** • **Supplier code** • **Supplier's currency** • **Shelf life, periods** • **Purchase price/unit** • **Inventory value/unit** • **Info field**

As you see, Orders-to-receive information is imported here through the **Qty to receive** and **Delivery date** data types.

In this case, you can import the on-hand level using three ways. The data types for each of them are:

1. **On hand change**, and the **Last on hand** that should be matched to the **On hand** option when importing.

2. **Last on hand** by matching to the **On hand** meaning when importing. Use this way if you can only provide the on-hand at the time of import.

3. **On hand** (as remaining).

Unlike the second method, the first and third methods import on-hand history.

An example of the format is presented in the figure below.

A	B	C	D	E	F	G	H	I	J	K
Date	Industry	Group	Item code	Description	Quantity Sold	On hand	Purchace price	Shelf life	Balance value	Supplier code
1/1/2015	Consumer goods	Sporting goods	B05465-R	Basketball 29.5	73	110	11.99		11.99	3850
2/1/2015	Consumer goods	Sporting goods	B05465-R	Basketball 29.5	73	110	11.99		11.99	3850
3/1/2015	Consumer goods	Sporting goods	B05465-R	Basketball 29.5	82	123	11.99		11.99	3850
4/1/2015	Consumer goods	Sporting goods	B05465-R	Basketball 29.5	143	215	11.99		11.99	3850
5/1/2015	Consumer goods	Sporting goods	B05465-R	Basketball 29.5	192	288	11.99		11.99	3850

You can download this example file.

Excel Files

Excel files allow importing almost all of the data types. Each of the data pieces should be on a separate sheet of the Excel document. The first sheet must contain Transactional data. Below, we show the format for each piece of data in an Excel file. The sequences of the data type columns and spreadsheets in the file can be arbitrary.

Transactional Data

A	B	C	D	E
Date	Item code	Quantity Sold	On hand remaining	Price per unit
1/1/2015	B05465-R	73	110	12.98
2/1/2015	B05465-R	73	110	12.98
3/1/2015	B05465-R	82	123	13.97
4/1/2015	B05465-R	143	215	13.97
5/1/2015	B05465-R	192	288	12.98
6/1/2015	B05465-R	213	320	13.97

Transactional data | Item information | Orders to receive | C

The table must contain one transaction per row.

Item Information

A	B	C	D	E	F	G	H
Industry	Group	Item code	Description	Purchace price	Shelf life	Balance value	Supplier code
Consumer goods	Sporting goods	B05465-R	Basketball 29.5 (	11.99		11.99	3850
Food/Beverages	Alcoholic Bevera	50046	Brut Cava 750ml	7.79		7.92	3948
Pharmacies	Pharmacies	05-T48	Cold & Flu Table	2.99		2.97	1012
Consumer goods	Electronics	46689-PC	Computer [seas	448		440	3850
Consumer goods	Building materia	C1020	Concrete block [	3.69		3.96	3850
Food/Beverages	Alcoholic Bevera	002661-1	Dark Beer can 47	1.79		1.98	3948

Transactional data | Item information | Orders to receive | Orders to ship | ...

Rows of this table must be unique by the planning item identifier. If locations are used, the identifier is represented by (**Item code**, **Location**) pair, otherwise, it is **Item code**.
Data of this table is used as a filter for imported planning items, i.e. only those planning items that are in this table will be imported, regardless of any other planning items that may appear in the other pieces of data that are going to be imported.

Pay special attention to importing the following replenishment parameters:

- **Lead time**

- **Order cycle**
- **Min lot**
- **Max lot**
- **Rounding**
- **Lead time variance**

These characteristics depend on the echelon the planning item resides at. If a planning item is sourced from a DC, these parameters define the replenishment process from that DC. In this case:

- **Lead time** – the average time interval to deliver an item from DC to the location at the lower echelon.
- **Lead time variance** – the variance of the **Lead time** defined above.
- **Order cycle** – how often you replenish from DC.
- **Min lot**, **Max lot**, and **Rounding** – the constraints that are put on an item when you order it from DC.

If a planning item is sourced from a supplier:

- **Lead time** – the average time interval to deliver an item by your supplier.
- **Lead time variance** – the variance of the supplier **Lead time**.
- **Order cycle** – how often you send purchase orders to the supplier.
- **Min lot**, **Max lot**, and **Rounding** – the constraints that are put on an item when you order it from the supplier.

If your supply chain is described by a two-echelon model and there is a shelf life limitation on an item at the lower echelon, you should also provide a shelf life for the DC that supplies that item. DC's shelf life must then safisfy the condition:

DC shelf life ≥ **Lead time** + **Shelf life**,

where:

- **Lead time** – the time to deliver the item from the DC to the location at the lower echelon.
- **Shelf life** – the shelf life limitation at the lower echelon.

If the **Supplier code** is not given, Streamline attaches those items to an empty supplier code.

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Orders to Receive

Item code	Delivery date	Qt
565405 Beatles L	1/15/2017	600
565405 Beatles M	1/1/2017	300
565405 Beatles M	3/1/2017	300
565405 Beatles M	2/1/2017	300
565405 Beatles S	1/15/2017	200
565405 Beatles XL	1/15/2017	200

Transactional data | Item information | **Orders to receive**

Orders to Ship

Item code	Date	Qt
565405 Beatles L	1/15/2017	4
565405 Beatles M	1/1/2017	7
565405 Beatles M	3/1/2017	10
565405 Beatles M	2/1/2017	30
565405 Beatles S	1/15/2017	10
565405 Beatles XL	1/15/2017	2

Transactional data | Item information | Orders to receive | **Orders to ship**

Bill of Materials

Assembled item's code	Qty	Material code
1866-MB	200	1866-MB-RO
1866-MB	50	1866-MB-TWG
1866-MB	100	1866-MB-WB
1866-MB	50	1866-MB-OB
1866-MB	50	1866-MB-R
1866-MB	50	1866-MB-CW

... | Item information | Orders to receive | Orders to ship | **Bill of materials**

Promotions Information

item_code	Start Date	End Date	Discount %
456325	2-Dec-18	8-Dec-18	30%
1000513	2-Dec-18	8-Dec-18	30%
10510DH	2-Dec-18	8-Dec-18	30%
456325	9-Dec-18	15-Dec-18	40%
1000513	9-Dec-18	15-Dec-18	40%
10510DH	9-Dec-18	15-Dec-18	40%
456325	16-Dec-18	22-Dec-18	50%
1000513	16-Dec-18	22-Dec-18	50%
10510DH	16-Dec-18	22-Dec-18	50%
456325	20-Jan-19	26-Jan-19	42%
456325	27-Jan-19	2-Feb-19	30%
456325	3-Feb-19	9-Feb-19	55%

Promotions history

Future promotions

Batches Information

Item code	Batch code	Expiration date	On hand
B05465-R	349932	06/04/17	722
50046	558420	09/03/17	141
05-T48	442958	11/01/17	722
46689-PC	497538	08/24/17	90
C1020	153394	10/12/17	15
002661-1	469472	05/22/17	46
1866-MB	406883	07/07/17	30
562156-01	109954	06/14/17	1
L2010	119438	02/02/18	54
120565	684520	03/15/18	129

... | Orders to ship | Bill of materials | **Batches**

Date formats

If you import data from Excel files (XLS, XLSX), Streamline understands any date that is formatted by Excel standards. For text files like CSV, the date should be in one of the following formats:

- `dd.mm.yy`
- `m/d/yy`
- `mm/dd/yyyy`
- `yyyy/mm/dd`
- `yyyy-mm-dd`
- `yyyy_mm_dd`
- `yyyymmdd`

Streamline also recognizes these formats in Excel files.

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You can download an example of the data formatted in Excel file.

Special Case

Streamline allows you to avoid the *Item information* sheet and import these data types through the *Transactional data* spreadsheet (see figure below). In this case, however, the table will contain a lot of duplicated data. Thus, we encourage you to use two sheets – one for *Transactional data* and another one for *Item information*.

A	B	C	D	E	F	G	H	I	J	K	L
Date	Industry	Group	Item code	Description	Quantity Sold	On hand remaining	Purchace price	Price per unit	Shelf life	Balance value	Supplier code
1/1/2015	Consumer	Sporting g	B05465-R	Basketball 29.5	73	110	11.99	12.98		11.99	3850
2/1/2015	Consumer	Sporting g	B05465-R	Basketball 29.5	73	110	11.99	12.98		11.99	3850
3/1/2015	Consumer	Sporting g	B05465-R	Basketball 29.5	82	123	11.99	13.97		11.99	3850
4/1/2015	Consumer	Sporting g	B05465-R	Basketball 29.5	143	215	11.99	13.97		11.99	3850
5/1/2015	Consumer	Sporting g	B05465-R	Basketball 29.5	192	288	11.99	12.98		11.99	3850
6/1/2015	Consumer	Sporting g	B05465-R	Basketball 29.5	213	320	11.99	13.97		11.99	3850

Transactions data | Orders to receive | Orders to ship | Bill of materials

You can download an example of the data formatted in Excel file with merged *Transactional data* and *Item information*.

Connecting Your Data

To create a new project based on transactional data, do the following:

1. Go to the toolbar **New** > **Spreadsheet connection** > **Transaction data**.
2. Select your data file in the **Import** window and click the **Open** button.
3. Configure the **Transactional data connection** dialog.
4. Click **OK**.

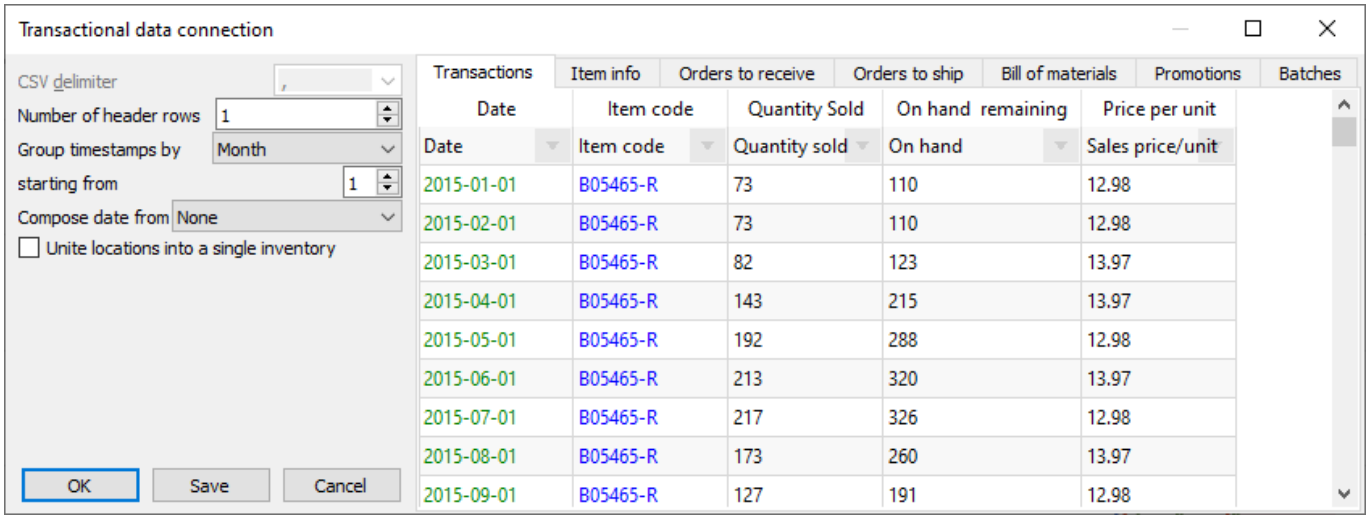
Transactional Data Connection Dialog

The **Transactional data connection** dialog is divided into two parts. The part on the left contains dialog *settings*, and the right part – a *preview* of the data that will be imported.

The preview also shows how Streamline understands the data: the dates are green, the text is blue, and the numbers are black. Thus, if dates have the incorrect format, they will be shown in blue or black color in the preview.

The preview has the following tabs:

- **Transactions** displays the first sheet of the Excel file automatically. This tab is designed to import Transactional data.
- **Item Info** is used to import Item information.
- **Orders to receive** is designed to import Orders-to-receive information.
- **Orders to ship** is intended to import Orders-to-ship information.
- **Bill of materials** is purposed to import Bill of materials.
- **Promotions** is used to import Information on promotions.
- **Batches** is designed to import Batches information.



Dialog Settings

CSV delimiter – allows setting the data delimiter used to parse the CSV file. Streamline always tries to determine the delimiter automatically, and in most cases, it works just fine. If Streamline cannot parse the data correctly, you can choose one of the predefined delimiters (comma, semicolon, space, or tab) or enter a custom delimiter manually. If you are importing an Excel file, the option is disabled.

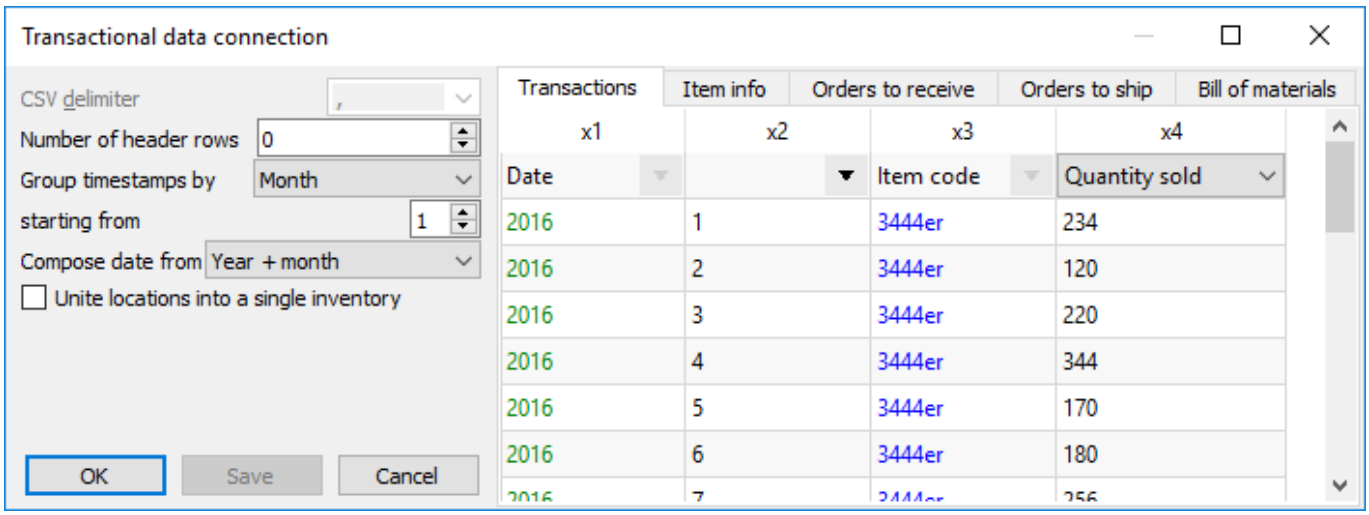
Number of header rows parameter allows setting how many rows in your data table takes the table header. The default value is 1. To ensure that the data table header is loaded properly, take a look at the header of the preview table. If it contains the labels of your header – everything is Ok, if not – adjust the parameter so that the labels will get into the header of the table preview. If the data table has no header, set the control to zero, then the header displays the **x1**, **x2**,... labels.

Number of header rows parameter can also be used to skip a given number of transactions from the beginning of the table, thus importing a slice of your data. Assume that you have a transactional report of **5** years length ranging from 2014 to 2018 year. However, Streamline needs you only to provide the last **36** months (2016-2018). In this case, set the **Number of header rows** to the table row number before the first occurrence of the transaction having 2016 year.

Group timestamps by – used to aggregate the transaction history in the given periods. The options are the **Day**, **Week**, and **Month**. For example, if you want to get monthly forecasts and plans, use the **Month** option.

Starting from parameter works together with the **Group timestamps by** and sets the starting day of the **Group timestamps by** period. For instance, if you need to aggregate your data by month, you can set up Streamline to perform grouping from a given day of the month. The default option is the first day of the month. In the case when you group the data by week and your week doesn't start from Monday, you can choose the proper day of the week in the **Starting from** drop-down.

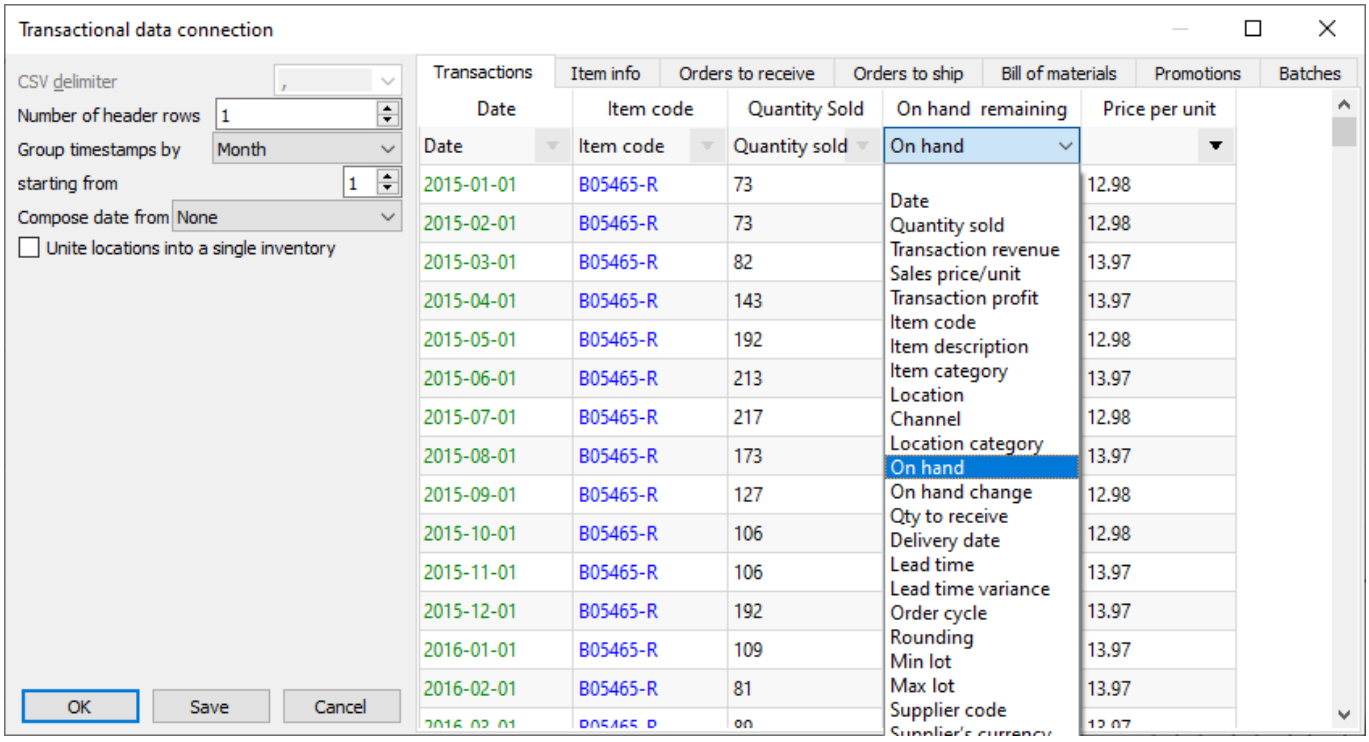
Compose date from – used when the date in the data is represented by two columns. For example, year in one column, and month number in another. There are two options: **Year + month** and **Year + week** (ISO 8601). To compose date properly Streamline requires the two columns to be one after another, and the first one must contain year. Then, choose the appropriate option in the control and set the meaning of the first column to **Date**. If the preview depicts the **Date** column in green, dates are read by Streamline properly.



Unite locations into a single inventory combines all locations into a single virtual location. The locations' on-hand is summed. This option is handy if your warehouses are located next to each other, so they can be treated and planned as a single aggregated warehouse.

Setting the Meaning of the Columns

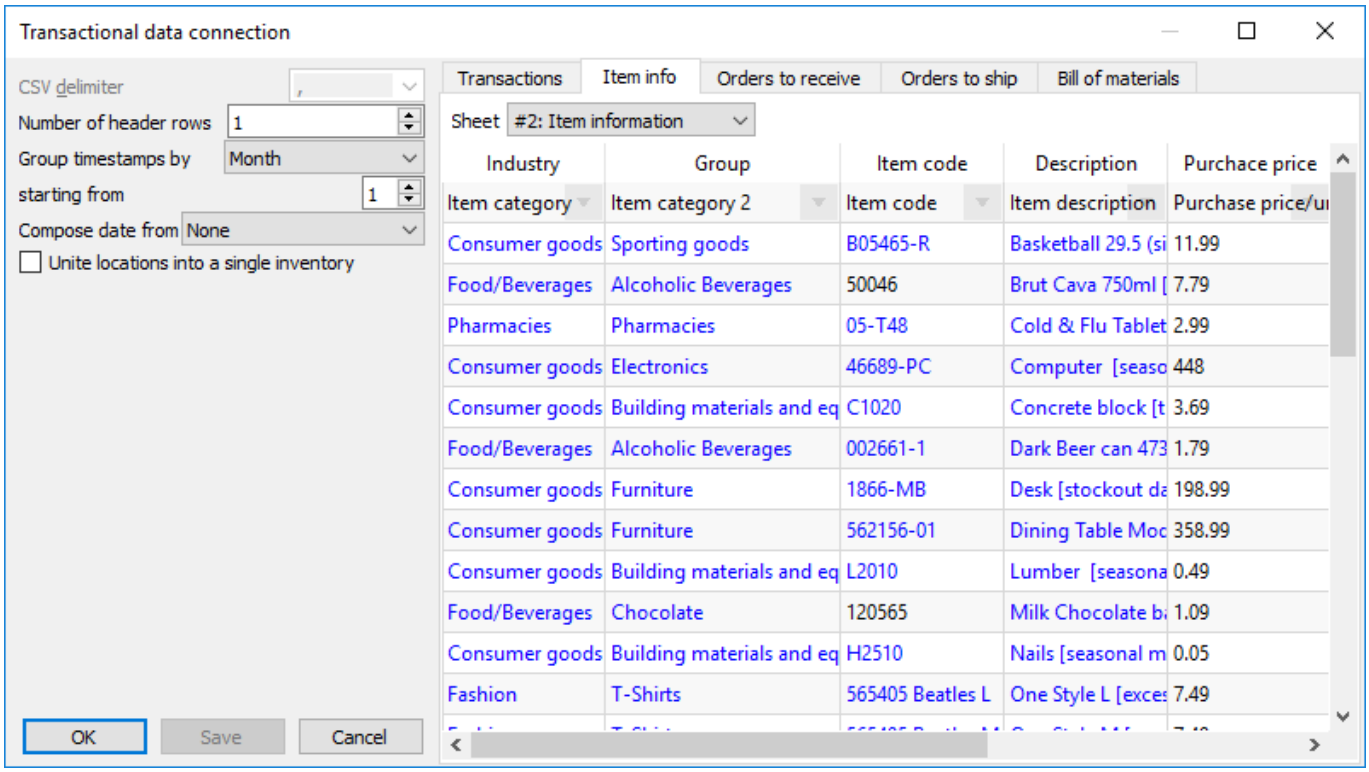
The table of the preview has a special row with a drop-down list in each column. The list displays the data that Streamline understands and can import in the selected tab. The description of the lists' options is given in the Data that can be imported section. Thus, to import your data properly, match the meaning of your data column to the most appropriate option in the drop-down list.



Configuring Item Information

To get item information imported, do the following:

1. Go to the **Item info** tab.
2. Select the Excel sheet that contains the information using the **Sheet** control.
3. Set the meaning of the columns.

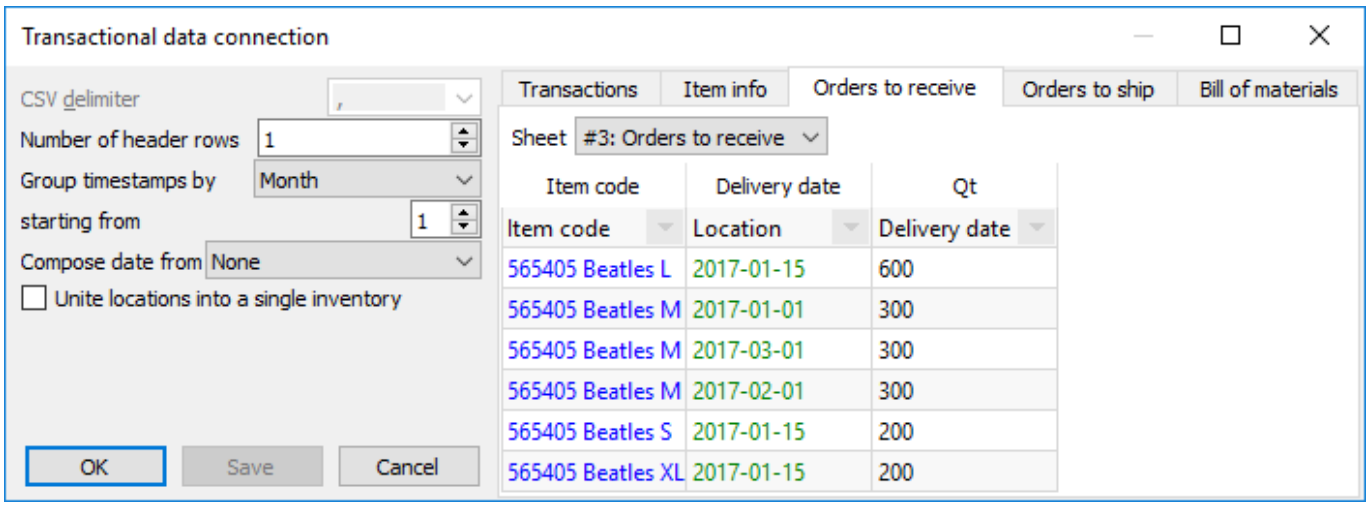


Importing categories

Configuring Orders-to-receive Information

To get in-transition information imported, do the following:

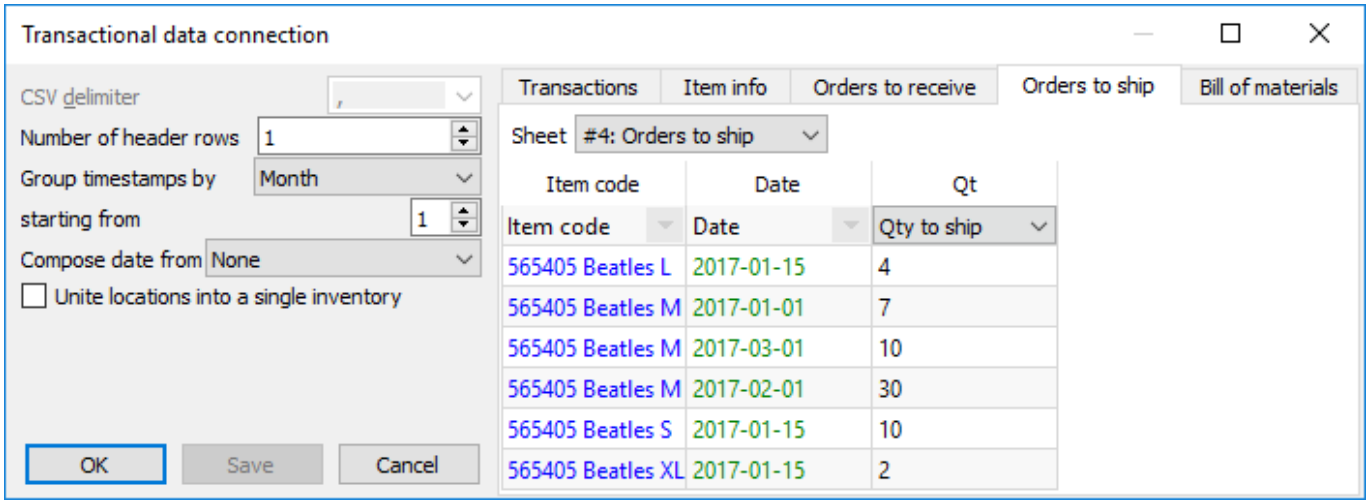
1. Go to the **Orders to receive** tab.
2. Select the Excel sheet that contains the information using the **Sheet** control.
3. Set the meaning of the columns.



Configuring Orders-to-ship Information

To get pending sales orders imported, do the following:

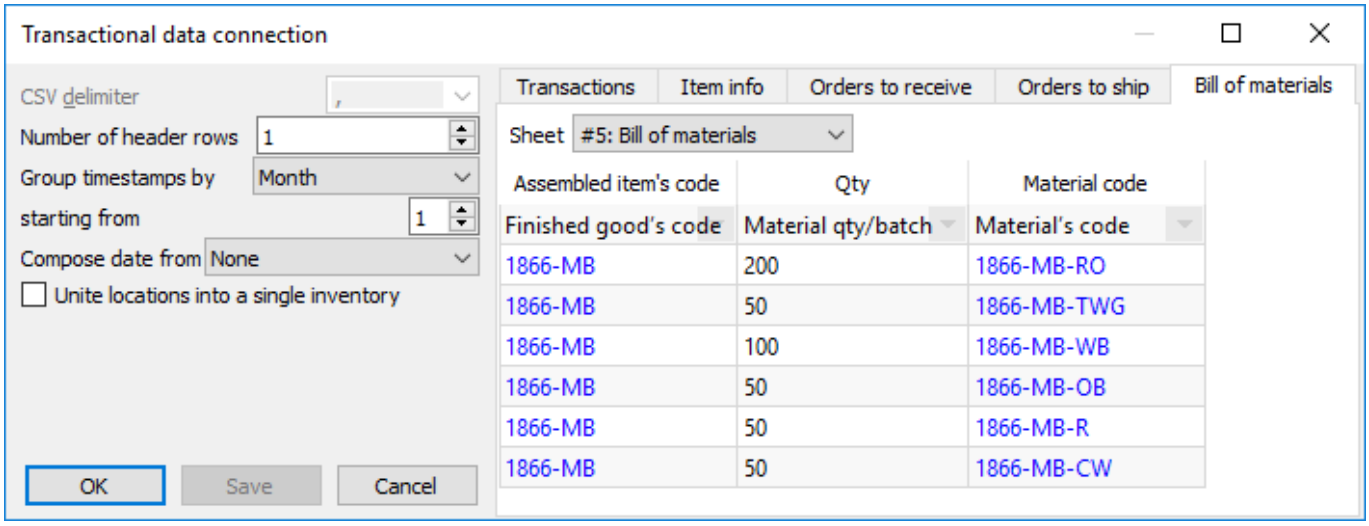
1. Go to the **Orders to ship** tab.
2. Select the Excel sheet that contains the information using the **Sheet** control.
3. Set the meaning of the columns.



Configuring Bill of Materials

To get the bill of materials imported, do the following:

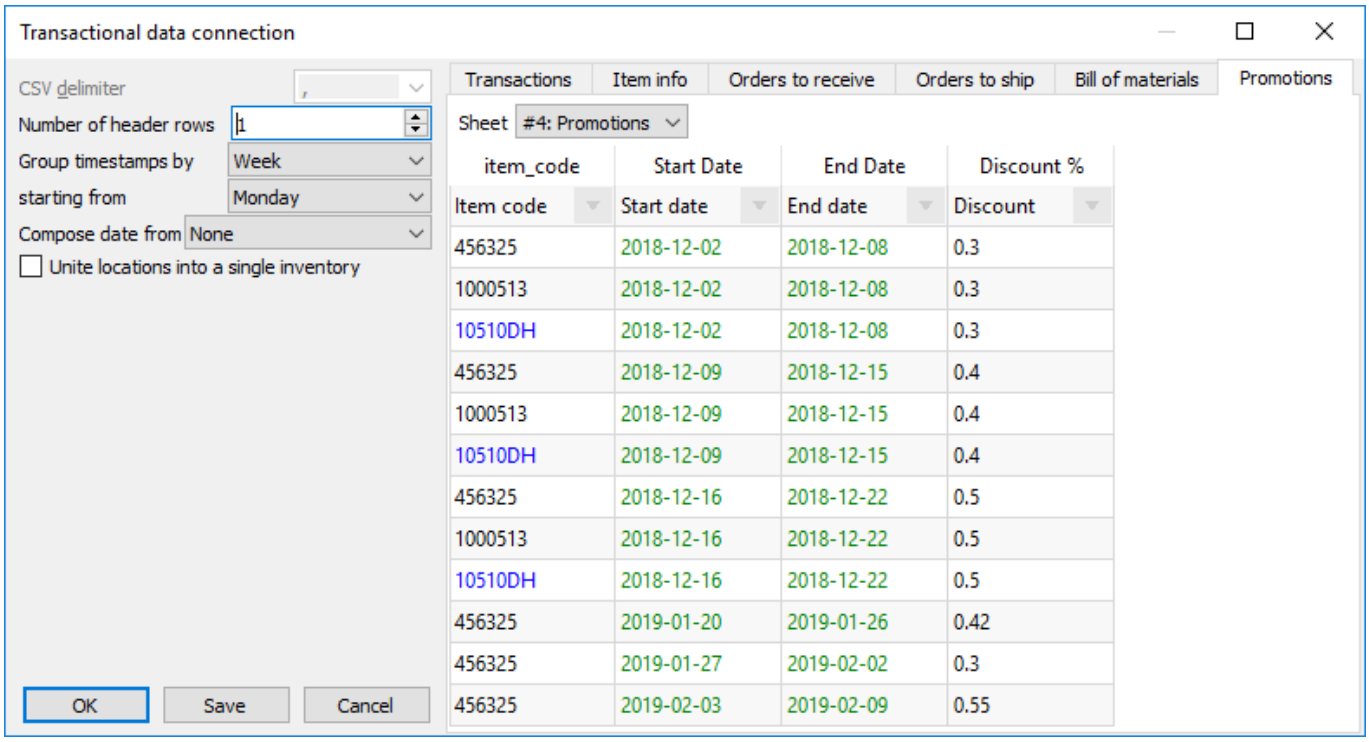
1. Go to the **Bill of materials** tab.
2. Select the Excel sheet that contains the information using the **Sheet** control.
3. Set the meaning of the columns.



Configuring Information on Promotions

To get information on your promotions imported, do the following:

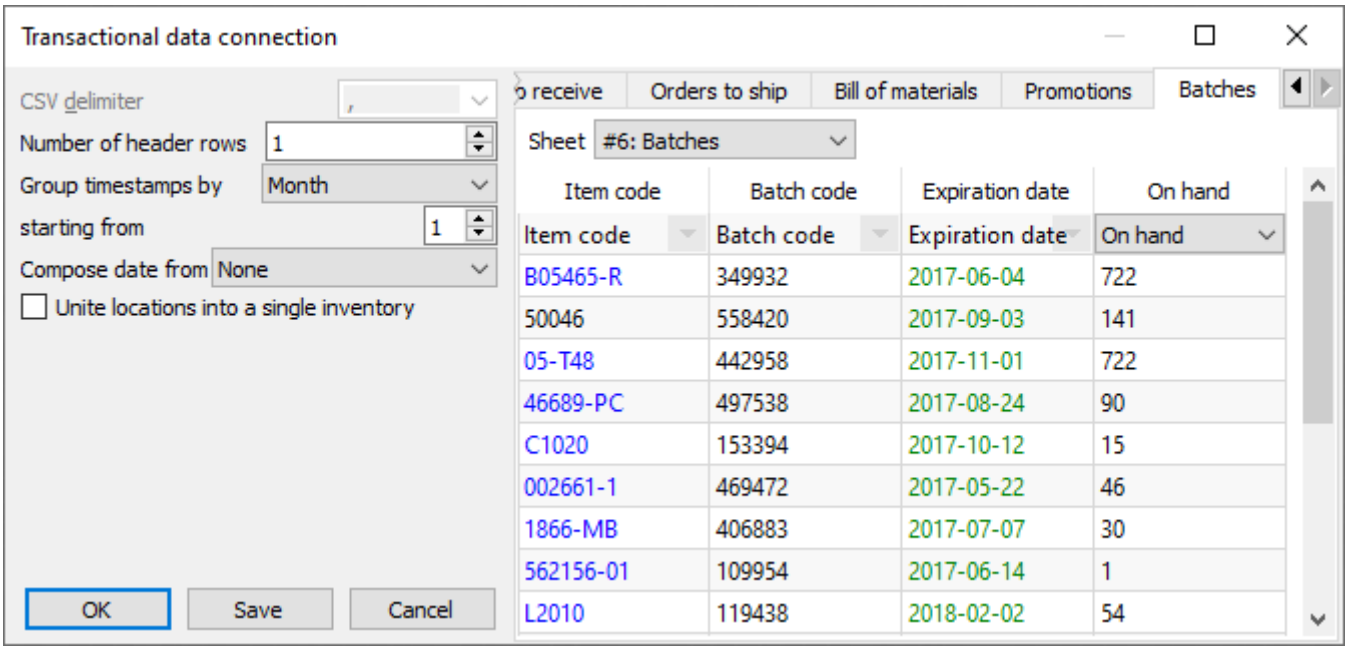
1. Go to the **Promotions** tab.
2. Select the Excel sheet containing promotions using the **Sheet** control.
3. Set the meaning of the columns.



Configuring Batches Information

To import batches information, do the following:

1. Go to the **Batches** tab.
2. Select the Excel sheet containing batches information using the **Sheet** control.
3. Set the meaning of the columns.



Next: Databases

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