

LabSpeed Precious Metals Feature Add-In



LabSpeed

Precious Metals

User Guide

Topos Technologies

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Precious Metals Overview

The Topos Precious Metal Form is a special feature LabSpeed Add-In that adds an interactive View for XRF analyzers (such as SPECTRO xSort™ handheld or the SPECTROTEST™ mobile analyzer) that assay for gold, silver or other precious metal in items such as jewelry, coins, flatware and dental crowns.

Use LabSpeed Precious Metals Form To:

- Combine the assay outputs of an XRF Analyzer and RS-232 scales into a single form
- Automate the payout calculation and generation of a final customer report.

Key LabSpeed Precious Metals Features Include:

- Definable for use with any precious metal, such as Gold, Silver and Platinum
- In Monitor configuration, the analytical results are detected automatically; or the Form can be used with saved analytical data.
- Automatically Imports Item weights from the Ohaus® Adventure Pro Balance and other scales with RS-232 interface. Item weights can also be entered by hand
- Definable formulas for calculating the payout and an optional secondary calculation, such as Karats for Gold.
- Quick connect to a favorite website to obtain the latest Market Price
- Single-Click generation of a final report. The report can be automatically printed before continuing to the next analysis

Gold Analysis LabSpeed Templates

Once installed, three Gold Analysis Templates appear in the Client Template lists for supported XRF instruments (e.g. SPECTRO xSort™ handheld XRF or SPECTROTEST).

1. Gold Analysis Form
2. Gold Analysis Form Print
3. Gold Analysis Monitor

Use these templates to automate the payout calculations for Gold analysis results and to generate customer reports.

The *Gold Analysis Form* Template is used to browse samples that have been stored in files and thus to calculate payouts from historic data. It contains one View:

1. PrecMetalsResView1 – The Special Interactive Precious Metal Form View

The *Gold Analysis Form Print* Template can generate reports and export the results from historic data. It contains three Views:

1. PrecMetalsResView1 – The Special Interactive Precious Metal Form View
2. Gold Report - A standard LabSpeed Report created to display the Gold Form contents in a nice report layout
3. Table 1 – A standard LabSpeed Table used to export the Gold Form contents as text

The *Gold Analysis Monitor* Template is used to monitor the output from live analyses and to automatically import the data into the Form. It contains three Views:

1. Monitor Status View – The Start/Stop Monitor View with Monitor Status
2. PrecMetalsResView1 -- The Special Interactive Precious Metal Form View
3. Gold Report - A standard LabSpeed Report created to display the Gold Form contents in a nice report layout

Precious Metal Form View

Load Sample	Submit for Printing / Exporting	Setup	
<h3>Gold</h3>			
Payout (\$) Σ			
377.53			
(1)	(2)	(3)	
Results (%)	Weight	Weight Units	Market Price (\$)
93.20	.247	oz	1,640.00
	Get Weight	Get Market Price	

PrecMetalsResView 1

The Form is interactive. Sample Weight, Weight Units and Gold Market Price are entered for each sample result before the report is generated by selecting the *Submit for Reporting / Exporting* button.

Note: If the Template contains a Report (for printing) or a Table (for exporting), clicking the Submit Changes button updates them with the latest values. To print, select the Report and click the Print toolbar button; to export, select the Table and click the Export toolbar button.

The precious metal is defined and the Form defaults are setup by clicking the

Setup

Form Features

- Sample weights may be entered manually, or imported from an electronic scale, such as the Ohaus Adventure Pro Balance™.
- Market Price may be obtained from a link to your favorite web site.
- Optionally, a secondary calculation may be performed
- Formulas may be entered to calculate the Payout and a secondary calculation
- Previous and Next Sample buttons are available for traversing a sample list

Payout Calculation

The screenshot shows a web form for calculating the payout for gold. At the top left, the text "Payout (\$)" is displayed in blue, followed by a small square button containing the Greek letter sigma (Σ). Below this, a light blue rectangular box contains the number "382.12".


Below the payout display, there are three numbered input sections:

- (1) Gold Results (%): A text input field containing "93.20".
- (2) Weight: A text input field containing ".25".
- Weight Units: A text input field containing "oz".
- (3) Market Price (\$): A text input field containing "1,640.00".

At the bottom of the form, there are two buttons: "Get Weight" and "Get Market Price".

The Payout for Gold is dependant on the sample analysis result (usually measured in weight %), the market price for Gold (usually in units of \$/oz) and the sample weight (usually in oz). The units are important and should match, but it is possible to work in any weight units, such as grams, even if the market price is in \$/oz, by modifying the Payout *formula* to include a conversion factor.

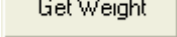
Payout (\$) – This is the calculated payout value of the gold sample. Click on the Σ button to view and modify the current formula that calculates the Payout.

Secondary Calculation - The secondary calculation is optional. It is turned on and the name defined in Setup. Once turned on, click on the  button to view and modify the current formula that calculates the Secondary Calculation.

For example, Karats can be calculated and displayed. In Setup, turn on Secondary Calculation and assign the name as “Karats”. Then in the formula, enter “[AnalysisResult] * .24”. (see Formulas below)

Gold Result (%) - This is the XRF Analysis result, which is obtained from the sample data. It is defined in the Form Setup.

Weight - The sample weight may be entered manually, or imported from an electronic scale.

The scale is defined in Form Setup. If a scale is defined, then the  button will be enabled. Clicking the button will import the weight and weight units from the scale.

Weight Units - If an electronic scale is not used, weight units may be entered. These are used in the final report and not used in formulas.

Market Price



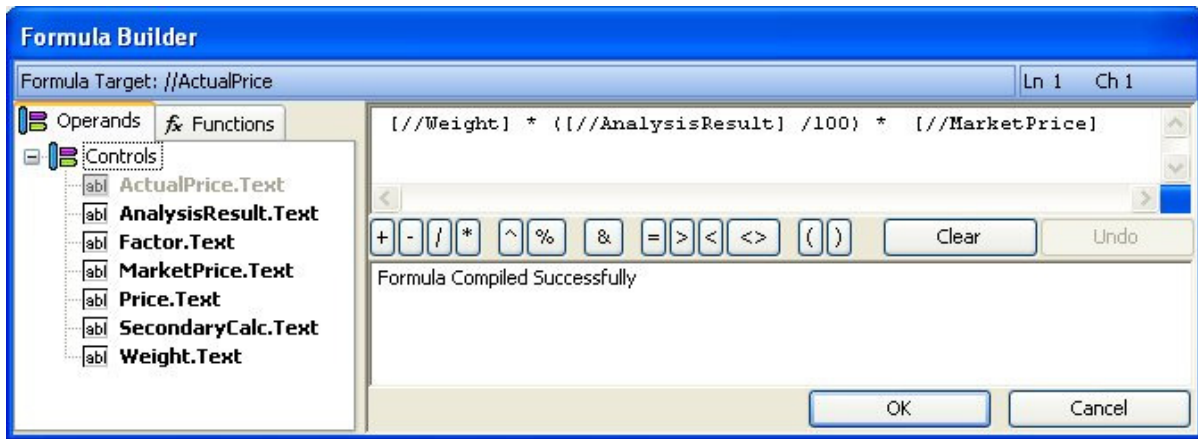
The image shows a software interface for entering market price. It consists of a light-colored rectangular box with a thin border. At the top, the number '(3)' is displayed in a large font. Below this, the text 'Market Price (\$)' is shown. Underneath the text is a text input field containing the value '1,640.00'. At the bottom of the box is a button labeled 'Get Market Price'.

The Market Price for Gold is the price per unit weight, which is in ounces by default. It can be entered in any units, such as ounces or grams but for simplicity, Market Price units should match the units for sample weight. If the Market Price and sample weight units don't match (for example the Market Price is \$/oz and the sample weight is grams), the payout formulas should be modified to account for the conversion to a common weight unit.

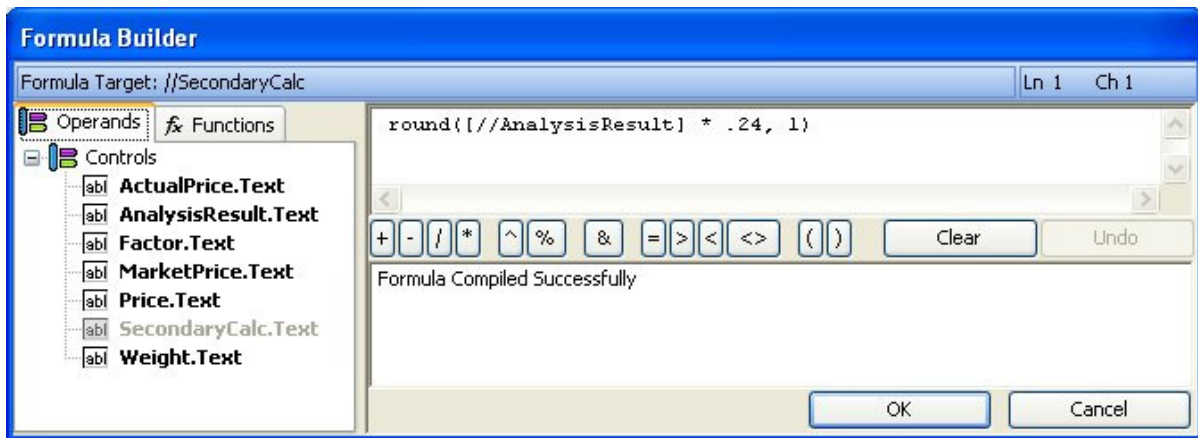
Formulas

Formulas may be viewed and modified for calculating the Payout and optional Secondary Calculation. The LabSpeed formula builder is described in detail in LabSpeed Help; the process is the same here. To access the formula for one of these values, click the Σ button in the field label. The following shows the default Payout formula and it may be modified by you. The secondary calculation example is used to calculate Karats.

Payout



Secondary Calculation (e.g. Karats)

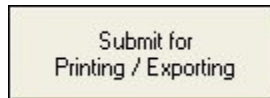


Previous and Next Sample Analysis



Many times the output file from the XRF analyzer will contain more than one sample. For example, it may contain several items analyzed for the same customer. Once the form for one analysis is completed, continue to the next sample by clicking *Next Sample >*. To return to a previous sample, click *< Previous Sample*.

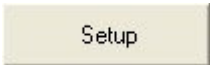
Submit for Printing / Exporting

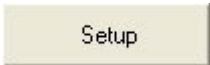


Once all the forms have been filled out for all samples, click *Submit for Printing / Exporting*. All entered information will be provided to all other Views in the Session. Typically, the Template will contain a Report View. After clicking *Submit* the Report will be populated and ready to print.

Note: In the Monitor mode, the report will automatically print (if it has been set up to automatically print) and the next sample analyses will be loaded when available.

Setup



Click the  button to define the precious metal and setup other defaults and behaviors.

Definition

The Gold Form has been pre-setup to map to results generated by the SPECTRO xSort™ handheld and the SPECTROTEST™ mobile XRF analyzers. If you are using a different analyzer you may need to remap some of these fields.

Setup Precious Metal

Definition | Default Settings | Validations | Scale Setup | Market Price Provider

* Required

Element Title: * example: "Gold"

Definitions

Element Column: *

Element: *

Result (%) Column: *

Show Secondary Calculation Name:

Identifier: example: XRF-1, XRF-2, ...

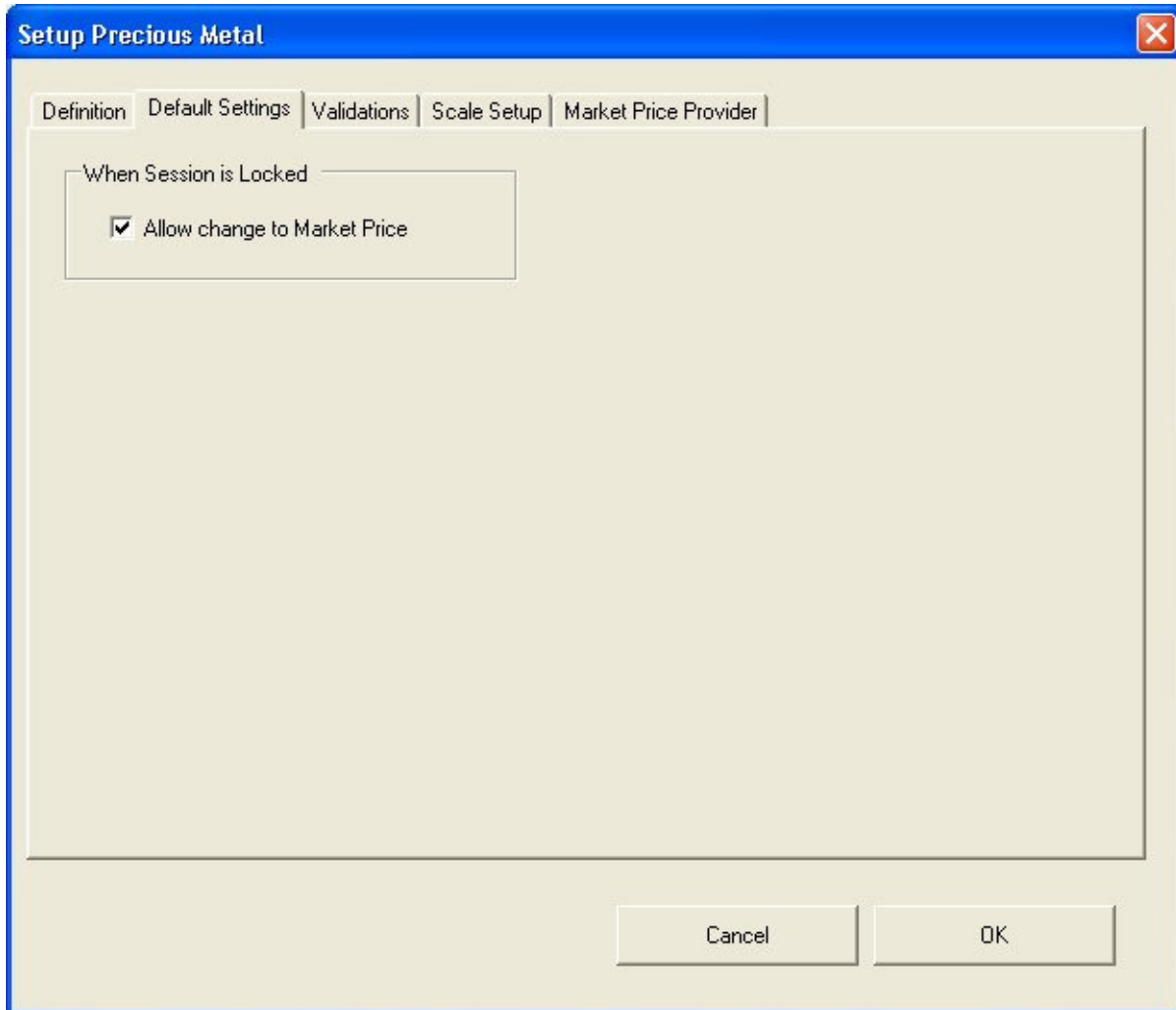
Cancel OK

In order to set the element definitions and field maps, a sample analysis that contains the precious metal of interest must be part of the Session data.

Element Title	This is a display title for the Form and is also available for reporting.
Element Column	Select from the dropdown list of columns. Choose the one that contains the element symbol.
Element	Select from the dropdown list of elements (e.g. Au)
Result (%) Column	Select fro the dropdown list of columns. Choose the one that contains the element concentration or result in weight %
Show Secondary Calculation	Choose to show a secondary calculation on the Form. For example, for Gold, this may be used to calculate and display Karats. If you choose to show a secondary calculation, enter an appropriate Name.
Identifier	If there are multiple XRF stations, you may wish to tag each station with an identifier. The identifier is available for reporting.

Default Settings

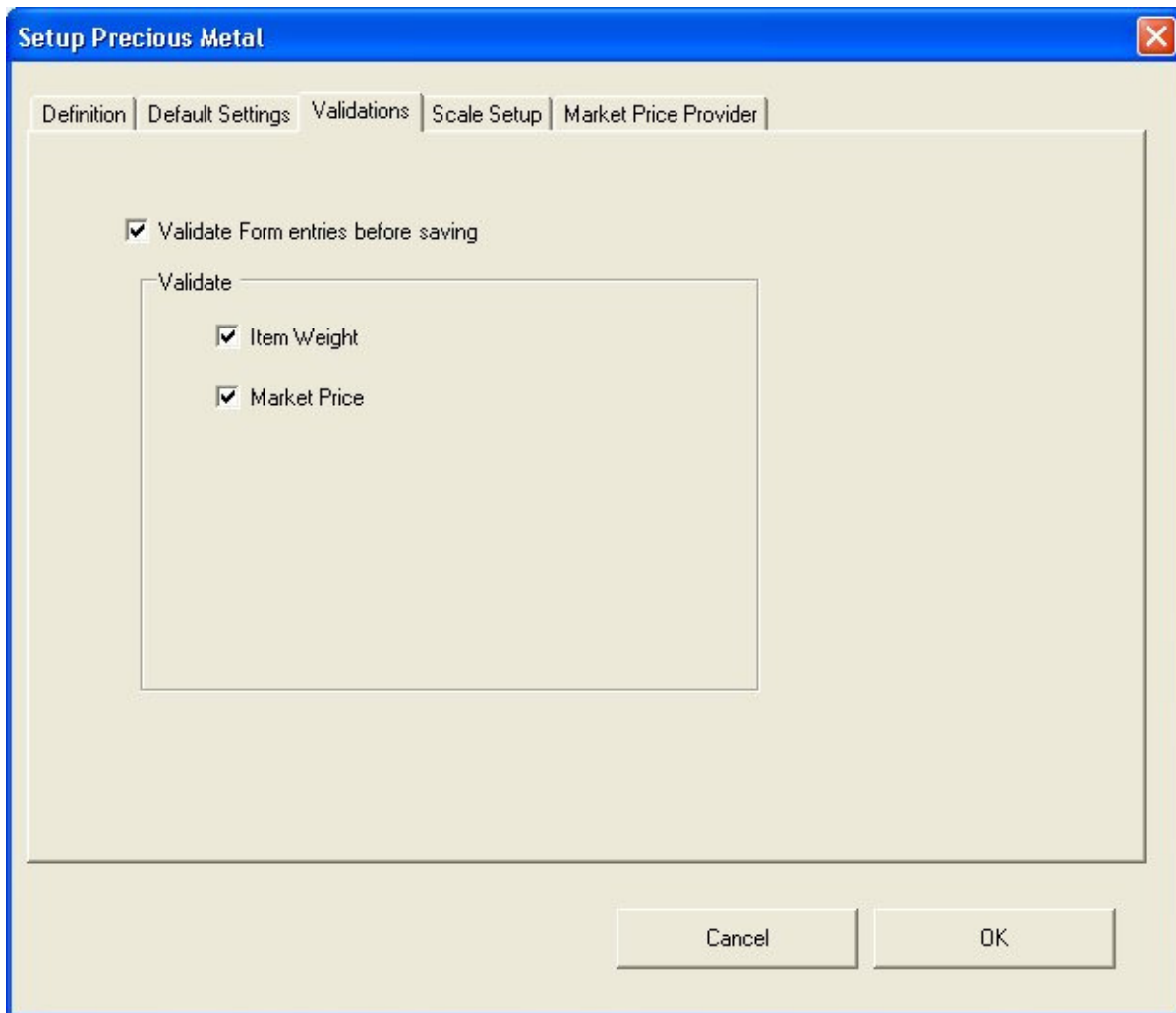
Set up some recurring defaults and set Locked Session behavior.



Session Locked – Allow change to Market Price When the Session is Locked, check this to allow changes to the Market Price.

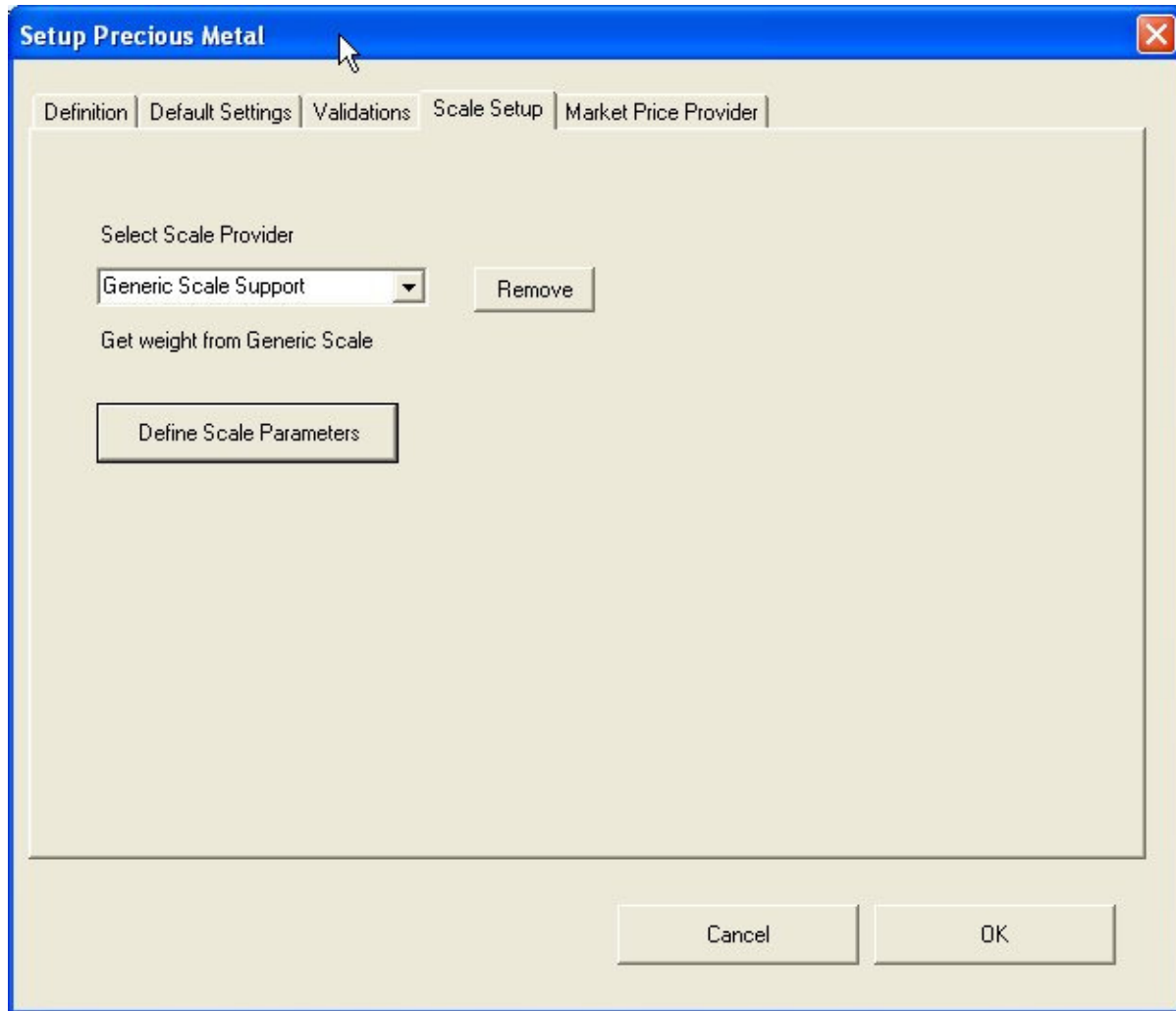
Validations

Individual items on the Form may be optionally validated before saving the entered values, such as when moving to another sample and when submitting changes to the report.



Scale Setup

Item weights may be imported automatically if an electronic scale is used. The Ohaus Adventure Pro Balance™ and a generic electronic scale are available as special feature Add-Ins. If either or both scales have been installed and added to the LabSpeed client list, then they will be selectable here. You can also define the scale parameters, such as the RS-232 port settings and command sequence required to retrieve the weight and weight units.



Scale Parameters – Port settings and Command script can be retrieved from the scale documentation. The command should return the Weight followed by the Weight Units followed by a termination character. Use the TEST button to test the command.

Generic Scale Properties

RS 232 Port Settings

Port Name: COM1

Baud Rate: 9600

Parity: none

Stop Bits: 1

Data Bits: 8

Handshake: none

Command:

Command Termination Character: CR

Expected Results: 3.27 g <CR>
e.g. Weight Units <CR>

Receive Termination Character: CR

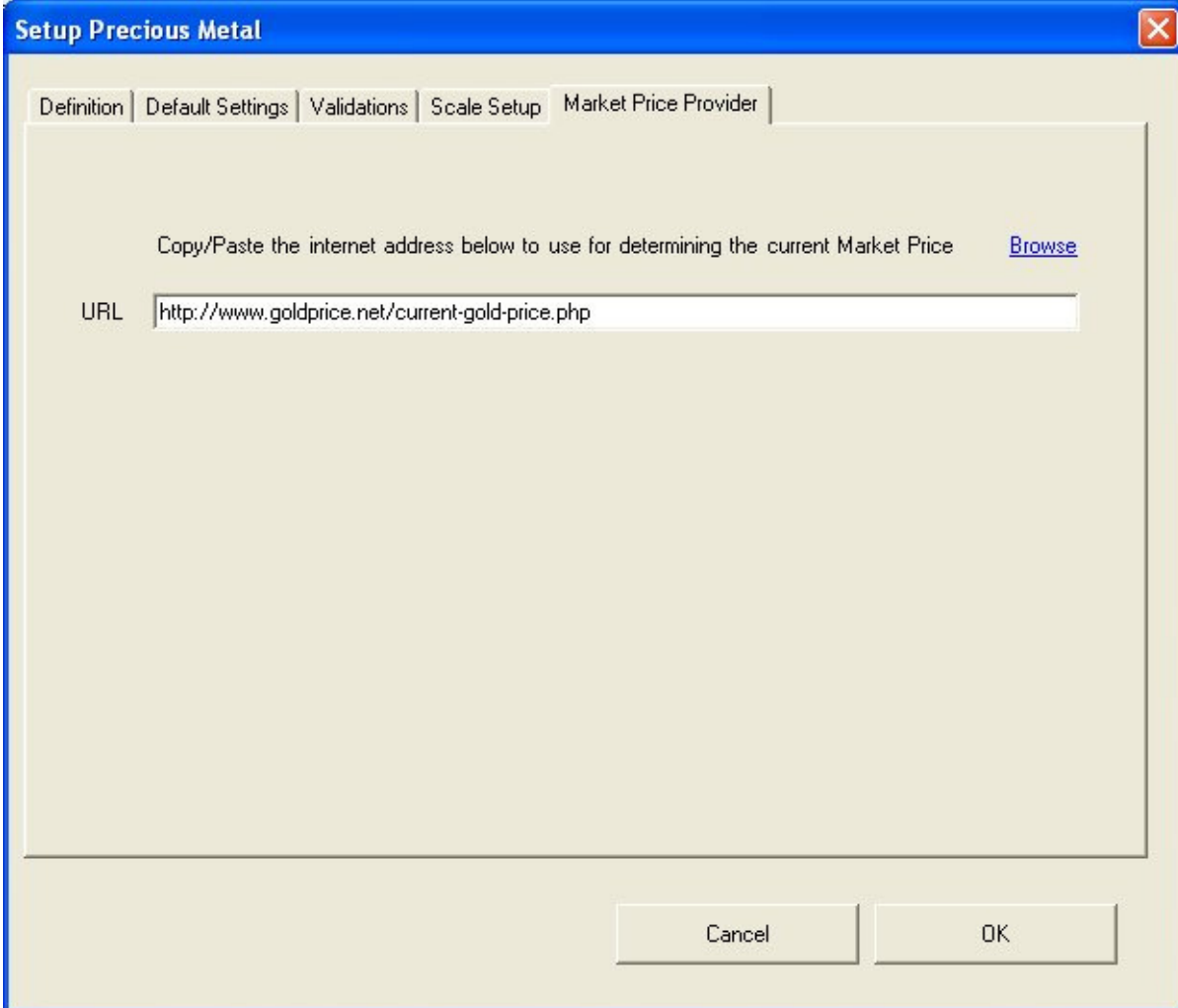
TEST - Get Weight

Read Results:

Cancel OK

Market Price Provider

If you have internet access, enter the web site URL you would like to use for checking the current Market Price. Click on the Browse button to locate the site. Then you can copy the web site address from the Browser URL line to the text box below.



The screenshot shows a dialog box titled "Setup Precious Metal" with a blue title bar and a close button (X) in the top right corner. The dialog has five tabs: "Definition", "Default Settings", "Validations", "Scale Setup", and "Market Price Provider". The "Market Price Provider" tab is selected. Inside the dialog, there is a text area with the instruction "Copy/Paste the internet address below to use for determining the current Market Price" and a blue "Browse" link. Below this, there is a text box labeled "URL" containing the address "http://www.goldprice.net/current-gold-price.php". At the bottom of the dialog, there are two buttons: "Cancel" and "OK".

Accept Your Changes

Click *OK* to accept all changes to all five sections. Each entry is validated and a warning is issued if any problem is found.

Creating a New Precious Metal Form

Creating a New Form for a Different Precious Metal

The Gold Form may be easily modified to create a new Form for a different precious metal, e.g. Silver (Ag), Platinum (Pt) and others. The process is the same.


1. Load an analysis with the metal of interest (e.g. Ag)
2. Select the *Setup* button and change the following
 - a. Re-define the columns for *Element Title* and *Element*.
 - b. If the Secondary Calculation no longer applies, remove it... or change it
 - c. Change the Market Price Provider URL if different.
3. Enter the correct Market Price on the Form
4. Update the Payout Formula. (it may not need to change)
5. Update the Secondary Calculation formula if you are showing it
6. Rename the Gold Report View in the Session explorer (e.g. to Silver Report)
7. Update the Title in the Report View (using Design Mode)
8. Save the Template as a new name (e.g. Silver Analysis Form).

Monitor Mode


The *Gold Analysis Monitor* Template is used to monitor the output from live analyses and automatically import newly acquired data into the Form. The *Gold Analysis Monitor* Template contains three Views:

1. Monitor Status View – The Start/Stop Monitor View with Monitor Status
2. PrecMetalsResView1 – The Special Interactive Precious Metals Form View
3. Gold Report - A standard LabSpeed Report created to display the Gold Form contents in a nice report layout

Use the Monitor Status View to Start and Stop the monitor service that checks for new sample

data. Use Design Mode  in the Monitor Status View to setup the File Monitor Mode parameters, such as file name and path. For more information about File Monitor Mode and setup go to LabSpeed HELP, where it is described in detail.



Once the monitor file directory has been setup, select  on the Monitor Status View. This initiates the service that detects when a new sample file has been saved.

Click on the **PrecMetalsResView1** View to make it the active View. Until a first sample is run, everything is disabled.

An analysis file may contain one or more samples – it depends on how you use the XRF analyzer and when you save the results. When a newly saved file is detected, all samples are loaded into the Form sample list.

For each sample, fill out the Form and complete all information. When done, select the



button. This will populate all pages of the Report and then continue to monitor for the next sample file.

If you want the report to automatically print when Submit is clicked, make sure the Report has been set to Auto-Print (go to the Report View and check this on). You also have the option to auto-export the report in a variety of formats.