

11.0 Product Information Business Processes

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11.1 Introduction and Scope of Effort

This section defines the data exchange interfaces necessary to support Product Information transactions which include the Certificate of Analysis (COA) process among the Buyer, Seller and/or Marketplaces; and for the issuing of a Quality Testing Report (QTR) by Third Party Laboratories to potential and actual product buyers and sellers.

11.1.1 Product Information Messages

The following business transactions are discussed in this section:

CertificateOfAnalysis	The Seller electronically initiates the CertificateOfAnalysis transaction, either directly to the Buyer or through the Marketplace. This transaction contains the Certificate of Analysis data and associated specification limits.
QualityTestingReport	<p>Seller Side Transaction - The third party laboratory issues a QualityTestingReport transaction to a seller or potential product seller. A seller is a potential product seller when it markets its product to potential buyers, and thus issues product information to potential buyers, but a sale has as yet not occurred and may or may not occur.</p> <p>Buyer Side Transaction - The third party laboratory issues a QualityTestingReport transaction to a product buyer or potential product buyer. In the majority of cases, a sale would have been agreed between the buyer and the seller, and the purpose of the QTR would be to verify the quality of the product either before or after delivery.</p>

11.1.2 Key Scope Assumptions

Certificate of Analysis

- Each COA message contains information about one product, and the product contains one or more batches; and each batch contains one or more types of test and associated specification limits. The COA - Seller generates all COA messages which are then transmitted electronically, either through Marketplaces or directly to Buyers (no paper copies).
- The COA message can contain both quantitative and qualitative analysis.
- Only the English language is supported.

Quality Testing Report

- Each QTR message contains information about one product, and the product contains one or more batches; and each batch contains one or more types of test and associated specification limits.
- The QTR message only deals with the data associated with quality assurance samples taken to confirm the quality of a product as part of an actual or a potential buyer/seller transaction.

- QTR - Test results from custody transfer quality assurance samples taken during the loading or discharging of shore-tanks, vessels etc, are outside the scope of this charter. These types of sample are not directly associated with the sale and purchase of products but merely act as samples to ensure the quality of the product.
- Data associated with samples taken to ensure quality of product during a vessel, railcar, container or road truck loading or discharging process are outside the scope of this document.
- As a sale may not have taken place prior to or after issuing of a QTR, the QTR may not always be associated with an actual purchase. The data format and interfaces for the QTR messages must be such that valid messages may be issued with or without associated purchase order data.
- The QTR message transmissions can only take place between the third party laboratory and the buyer; and between the third party laboratory and the seller; and between the third party laboratory and marketplace.
- With permission from the Buyer and/or Seller, third party laboratories can send a QTR to a marketplace.
- The reporting of quantity information on the QTR messages is outside the scope of this message.
- Only the English language is supported.

11.1.3 Key Business Model Assumptions

Pre-Conditions that exist prior to generating a Product Information transaction:

- The COA and QTR messages are part of the product Order to Cash Process and the message design must support that process with the required data elements to satisfy the product Order to Cash Process. Examples of this would include adding the Order number, Bill of Lading Numbers, etc.

Business assumptions that govern the exchange of messages:

- The purpose of a COA message is different from the purpose of a QTR.
- Freight forwarders, banks, lending organizations, customs and carriers fall outside the scope of this charter as the data requirements for transactions to and from these types of organizations fall within the scope of one or more other CIDX sub-committees.
- Due to different test methods, specifications, etc., flexibility must be part of the design which will likely lead to many optional fields.
- The quality of a product does vary to the extent that accurate quality information is required to determine the value of products to be bought and sold.
- QTR – An inherent level of mistrust may exist between the buyer and seller, as well as the potential for misrepresentation of the product by both the buyer and/or seller; at least one of the parties required the testing of the product by an independent party, known and acceptable to both parties, prior to or as part of the buying/selling transaction.

Post-Conditions that are anticipated after messages are sent:

- Both CertificateOfAnalysis and QualityTestingReport are standalone messages, and an electronic response, other than an acknowledgement of receipt of the message, is not anticipated. Business responses to these messages can only be transmitted by non ChemXML means (phone, fax, email, etc.).

11.2 Business Process Information

11.2.1 Business Process Descriptions

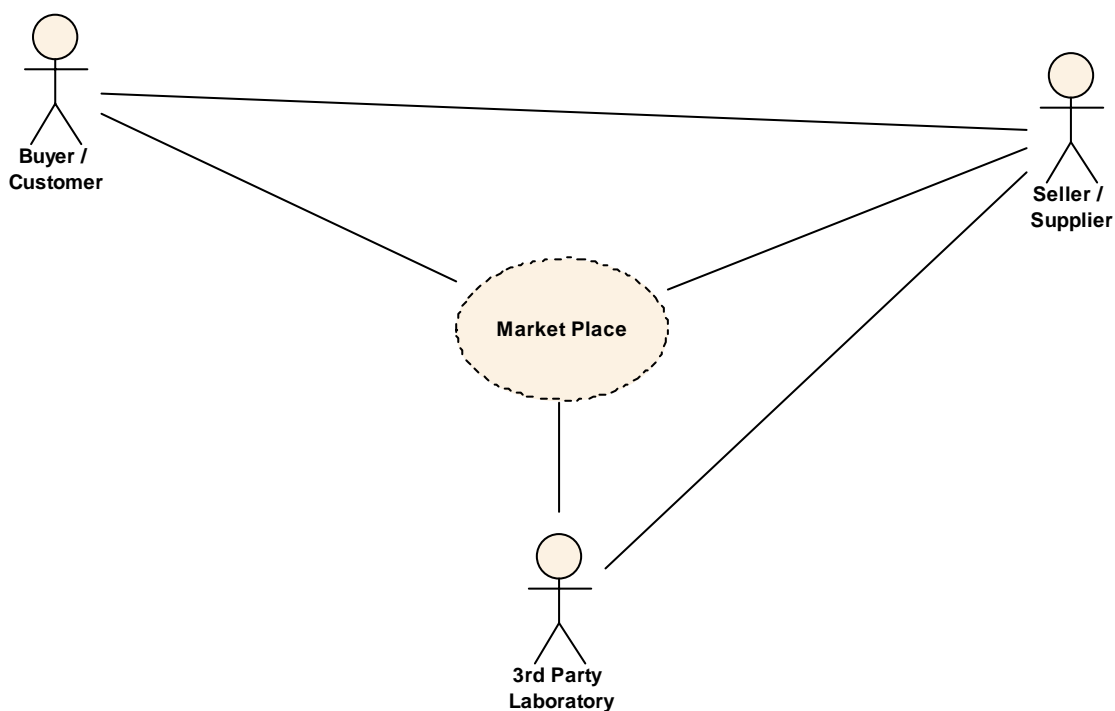
The CertificateOfAnalysis transaction is Seller-initiated. The purpose of the message is to transmit Certificate of Analysis data and associated specification limits in a standard XML message format. The flow of data is from the Seller to the Buyer and/or Marketplace

The QualityTestingReport transaction is Third Party Laboratory-initiated. The purpose of the message is to transmit test result report data and associated specification limits in a standard XML message format. The flow of data is from the Third Party Laboratory to any combination of the following three entities – Buyer, Seller, and Marketplace.

11.2.2 Business Process Diagrams

Certificate Of Analysis

The general business process model for the Certificate Of Analysis and Quality Testing Report transactions are depicted in the following diagrams. Solid thick lines illustrate the transaction from Seller to Marketplace, dashed thick lines illustrate the transactions from Seller to Buyer. The thin lines indicate transactions / activities (ie: communications via phone, fax, or e-mail) that are not supported in these standards.



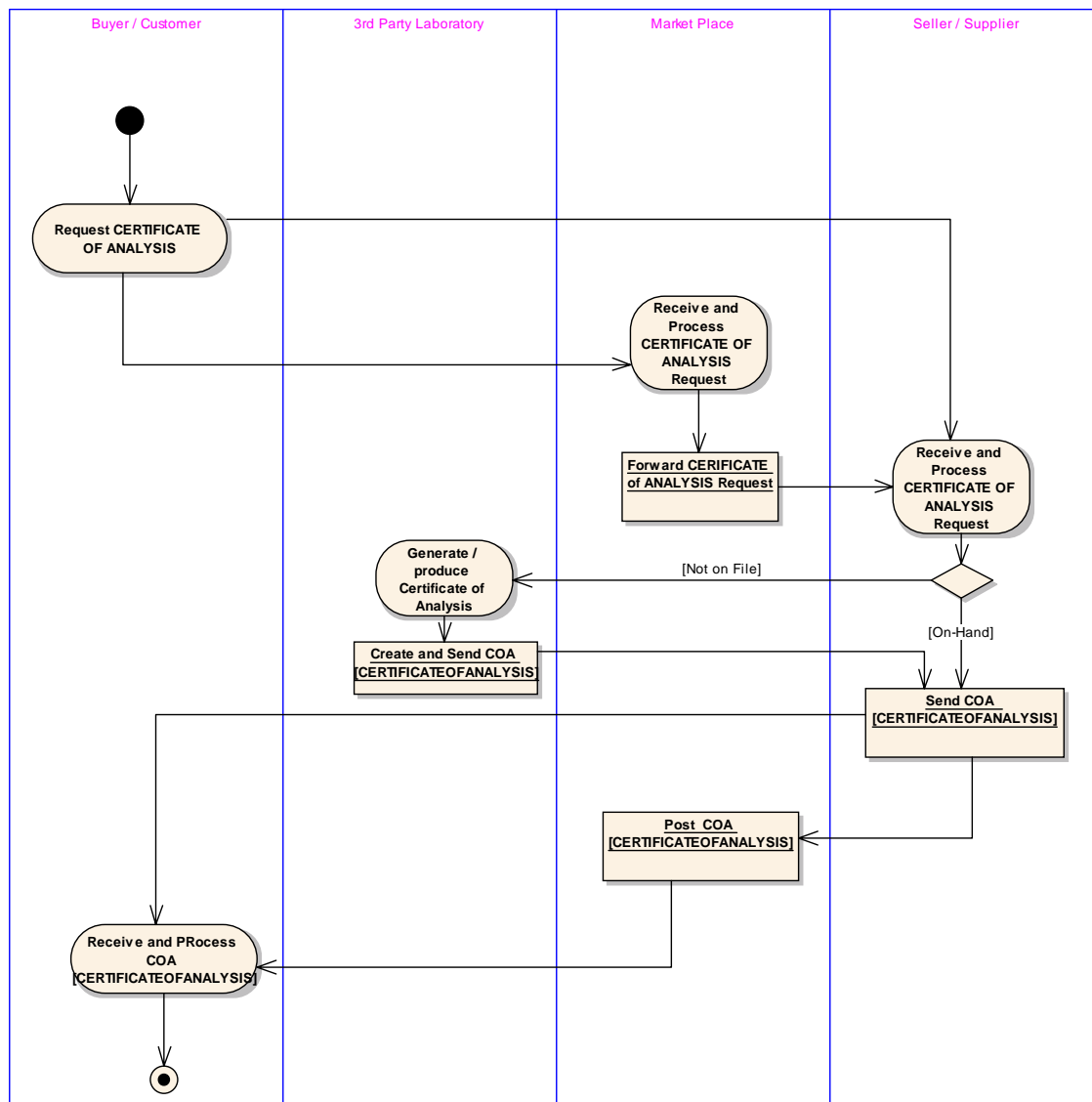


Figure 11.2.2.a: Certificate Of Analysis transactions

Marketplaces and B2B transactions may have different business models for the Certificate Of Analysis message:

Marketplace Model	The Seller sends the COA message to the Marketplace and permits the marketplace to make the COA available for further distribution.
B2B Model	The Seller sends the COA message directly to the Buyer to verify the quality of the product that the Buyer has ordered (or is considering for order).

Quality Testing Report

The general business process model for the Quality Testing Report transactions is depicted in the following diagram. Dashed lines illustrate the transaction between the Third Party Laboratory and Buyer, Seller or Marketplace. Thin lines indicate transactions / activities (i.e.: communications via phone, fax, or e-mail) that are not supported in these standards.

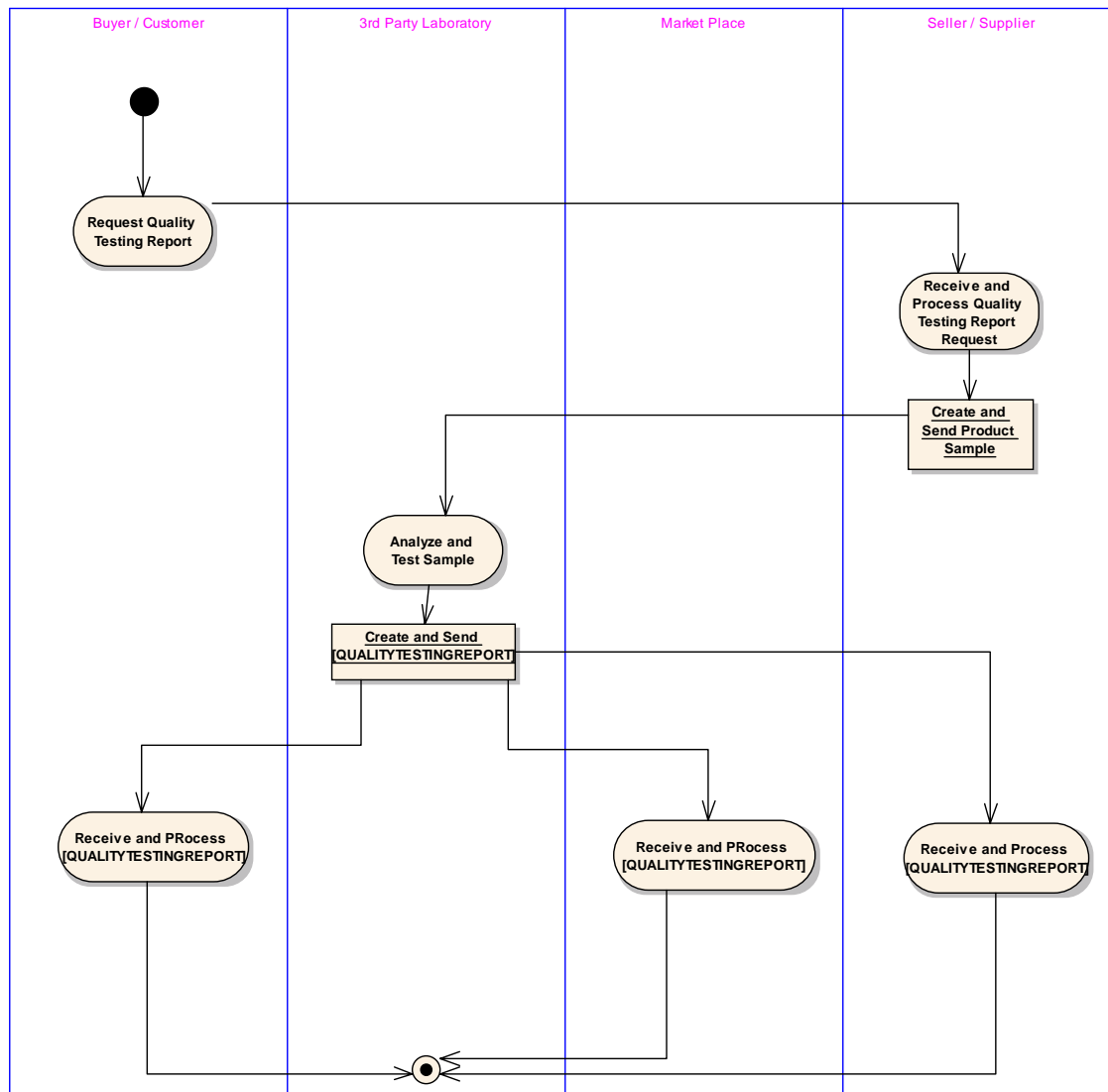


Figure 11.2.2.b: Quality Testing Report transactions

Marketplaces and B2B transactions may have different business models in their use of the Quality Testing Report message:

Marketplace Model	The Third Party Laboratory sends the QTR message to the Marketplace and permits the marketplace to make the QTR available for further distribution
B2B Model	The Third Party Laboratory sends the COA message directly to the Buyer and/or Seller to verify the quality of the product

	that the Buyer has ordered (or is considering for order).
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11.2.3 Business Scenarios for Certificate Of Analysis

Specific scenarios that initiate a Certificate Of Analysis transaction are presented below:

- **Business Scenario 1**

The COA message is assembled and transmitted to the Buyer as part of the delivery process. This may be sent in conjunction with other delivery documents.

A Buyer needs to buy sulfuric acid for an industrial manufacturing process. The acid must have a concentration 93% +/- 0.1 in water and contain less than 100 ppm in metals contamination. The Buyer places an electronic order to the Seller who is a sulfuric acid manufacturer. The Seller manufactures a 93% +/- 0.05 concentration sulfuric acid with less than 80 ppm total metals contamination. The Seller performs concentration assay and metals content analysis as part of the quality process. Since the Buyer has no special testing needs or specification limits the order can be processed by the Buyer with no further intervention. The Seller is able to select lots of Sulfuric Acid that meet the general manufacturing specification.

Within the message the following data may be transmitted:

- Order information if relevant
(Buyer Name and Address, Buyer PO # etc...)
- Material and Lot Identification
(93% Sulfuric Acid, LOT # 123456)
- Test identification, parameters and units
(Assay by Titration, Metals by ICP Mass Spectroscopy)
- Test data- either quantitative or qualitative
(Sulfuric Acid Concentration 92.96, Total Metals 45 ppm)
- Manufacturing Material specifications or limits
(Sulfuric Acid Concentration < 93.1%, > 92.9%, Metals Concentration < 100 ppm)

The Buyer receives the COA message from the Seller and transmits the information into their incoming quality system for later use in their manufacturing process.

In addition, the Buyer may require testing not performed as part of the manufacturing quality process. Additionally the Buyer may require that the specification limits be narrower than the general manufacturing limits. The COA message will contain the elements in Part A with the addition of Buyer Specifications. The Manufacturing Material Specification may or may not be transmitted in this scenario.

As an example the Buyer may require the following-

Sulfuric Acid with a concentration of 93% +/- 0.025%, with an iron concentration of less than 50 ppm. In this scenario the concentration specification limits are tighter than the Sellers manufacturing spec and the Buyer is requesting that an Iron concentration be determined whereas the Seller only tests for total metals. The Seller has agreed to the Buyers request for these additional requirements. When the Buyer transmits a PO to the Seller for 93% sulfuric acid a search is performed to identify lots that meet the special requirements.

The additional Iron level testing can be performed on lots selected that meet the Buyer requirements for assay. If the lots meet the Buyer Iron level requirement then a certificate of analysis message is sent from the Seller to the Buyer. Included in this message would be the element above and the Buyer assay specifications, as well as the Buyer Iron test would be reported.

- **Business Scenario 2**

The COA message can be sent by the Seller to the Buyer, Marketplace and/or third party for reasons other than the direct result of a product delivery.

The Seller is requested by a Buyer to transmit historical COA data on a lot that was purchased a year in the past. Seller's system regenerates the COA message and transmits it to the Buyer.

The Buyer requests test data on several lots of currently in stock material prior to purchase. If the lots are of the same materials then a single message can be sent.

After the Buyer reviews the individual data a lot may be selected for purchase, and a CertificateOfAnalysis message about the selected lot will be sent.

11.2.4 Business Scenarios for Quality Testing Report

Specific scenarios that initiate a Quality Testing Report transaction are presented below:

- **Business Scenario 1**

The buyer has agreed to purchase a product from a seller. The product is transported to the buyer's location and on delivery in the shore tank, the buyer requests a third party testing laboratory to sample and test the product and issue a QTR message to the buyer and the seller.

- **Business Scenario 2**

A seller wishes to sell a product to a buyer. The seller requests that a third party laboratory take a sample and test the sample in order to issue a Quality Testing Report to the seller and a potential buyer. The potential buyer decides not to proceed with the purchase. The seller then asks the third party laboratory for some additional testing and requests that the third party laboratory transmit the QTR message to another potential buyer.

- **Business Scenario 3**

A seller wishes to market a product on a product marketplace. The seller requests the third party laboratory to sample and test the product and issue the QTR message to the product marketplace.