ConnectingChemistry

BRENNTAG

E-invoicing with Brenntag N.V. – Brenntag Nederland BV

From January 1st, 2013, Brenntag NV and Brenntag Nederland BV can provide any invoice to customers located in Belgium or the Nederlands in either printed or electronic format. The electronic format is a pdf version of the printed invoice. We cannot provide structured invoice data.

Customer acceptance

As foreseen by the law, the customer must "accept" to receive the invoice in electronic format.

Brenntag requests the customer

- ✓ •to send an e-mail to:
  - for Brenntag NV: invoice.brenntagnv@brenntag.be
  - for Brenntag Nederland BV: invoice.brenntagnederlandbv@brenntag.nl
- ✓ mentioning
  - the e-mail address to which the electronic invoices are to be sent
  - the telephone number, the first name & the family name of the person responsible for the receipt of these invoices

A few days after the customer has informed Brenntag, all invoices will be mailed automatically in pdf format to that e-mail address.

Brenntag advices that the customer sets up a dedicated e-mail address to receive all electronic invoices, so that the continuity is ensured.

Digital signature

To guarantee the authenticity & integrity of the issued Brenntag invoices, the invoice carries an embedded "human-readable" digital signature.

This digital signature consists of two parts:

- ✓ on the left, we repeat the main data elements of the invoice; the "data text", including the < >
- ✓ on the right, we have the signature per public-key cryptographic (message) standard number 7; PKCS#7 in base-64 encoded text, from the first '-----' to the last '-----'

<12.11.2012;491281;EUR;300,00;57,00;357,00;30003;;
Acatris Netherlands B.V.;3752 LJ;BUNSCHOTEN-SPAKEN
BURG;NL;NL01;NL001375945B01;Brenntag Nederland B.V
.;3316 BM;Dordrecht;NL;#19,00;1;60002023;1,000;300
,00>

-----BEGIN PKCS7-----
MIIDAAYJKoZIhvcNAQcCoIIC8TCCAu0CAQExCzAJBgUrDgMCGgUAMIHdBgkqhkiG
9w0BBwGggc8Egcw8MTIuMTEuMjAxMjs0OTEyODE7RVVEOzMwMCwwMDslNywwMDsz
NTcsMDA7MzAwMDM7O0FjYXRyaXMgTmV0aGVybGFuZHMgQi5WLjszNzUyIExKO0JV
T1ND&R9URU4tU1BBS0VOQlVSRztOTDtOTDAxO05MMDAxMzclOTQlQjAxO0JyZW5u
dGPnIE51ZGVybGFuZCBCLlYuOzMzMTYgQk07RG9yZHJlY2h0O05MOyMxOEwwMDsx
OzYwMDAyMDIzOzEsMDAwOzMwMCwwMD4xggH5MIIB9QIBATBzMGgxCzAJBgNVBAYT
Ak5MMR4wHAYDVQQKExVCcmVubnRhZyBOZWRlcmxhbmQgQlYxFDASBgNVBAsTC0Ut
aW52b2ljaW5nMSMwIQYDVQQDExppbnZvaWNlc3JxMTEwMS5icmVubnRhZy5ubAIH
IBIJJxIwVTAJBgUrDgMCGgUAoF0wGAYJKoZIhvcNAQkDMQsGCSqGSIb3DQEHATAc
BgkqhkiG9w0BCQUxDxcNMTIxMTEyMTMzNjAxWjAjBgkqhkiG9w0BCQQxFgQUUrrz
49j15EWdbpLloflwtAQdrAgwDQYJKoZIhvcNAQEBBQAEggEAY2aI+T3uTJGv6xmF
poIxGO5Fxmr/DwD9NcG5Wsjrbw401cb92GqGPu4sV3chd+3wH/yZnR4k+OBJZbhX
Lv3ZdqMIPQBBjipMRa3+pWHK+Qd7vrr2nW9jYAhbGtf6BldKVkWxGf+imml0g3Z5
7VoLxnzrfRsdBtMJ/0Bis6cp8MiC08dRKB7OfnUNb/pq6X3Rr2tlen6SIpOdJWO8
7g0pGK2alKxj7GylJbWJ//208KUvGlEowEbjXrsasO8FoQ3DpKT5X6h5sM1QUokj
+qywtlKfZC56iSHg8L7xQblum5CRkw4H8qeHvmYIqtpQa+Zo0NxpPV/GCzyXepRm
TBDj0Q==
-----END PKCS7-----

Digital signature: data text

The data text repeats & summarizes the main data elements of the invoice.

The text up-to the first # character is the header information.
The header elements are:

- ✓ Invoice: invoice date, in the format dd.mm.yyyy
- ✓ Invoice: invoice number; Brenntag's accounting invoice number [Not the 9... number which is the sales invoice number]
- ✓ Invoice: currency, eg. EUR, USD, ...
- ✓ Invoice: net invoice amount, ie. excluding VAT
- ✓ Invoice: VAT amount
- ✓ Invoice: total invoice amount, ie. including VAT
- ✓ Payer: Brenntag's number for the Payer
- ✓ Payer: VAT number, where available
- ✓ Payer: company name
- ✓ Payer: postal code
- ✓ Payer: city
- ✓ Payer: country
- ✓ Issuer: Brenntag's sales organisation identifier
- ✓ Issuer: VAT number
- ✓ Issuer: Brenntag company name
- ✓ Issuer: postal code
- ✓ Issuer: city
- ✓ Issuer: country

The header line is followed by further details per VAT percentage; each separated by a # character:

- ✓ VAT percentage
- ✓ number of invoice lines, on which this VAT percentage is applied; sometime several invoice lines are aggregated to one in the invoice layout
- ✓ sum of the material numbers, for verificatino purposes; the sum has no real meaning
- ✓ sum of the quantity fields, ignoring any differences in unit of measure
- ✓ net amount, on which this VAT percentage is applied

This data should properly represent the traditional invoice data and repeat most legally required information on the invoice.

Digital signature verification

We have assumed that, as has been the case for paper invoices, the customer would only really verify an invoice when there is a suspicion of tampering. When in doubt, the easiest is probably to ask Brenntag for a copy of the invoice. If you want to truly verify an invoice then the following steps can be followed.

OpenSSL is the standard free tool to work with digital signatures

OpenSSL is maintained at openssl.org.
You can get OpenSSL for Windows at http://slproweb.com/products/Win32OpenSSL.html; the latest "Light" version should be suitable.

Getting the necessary text files together

- ✓ •PKCS7.txt: ◦open a text editor (eg. notepad)
  - open the pdf invoice; select the text of the PKCS7, from the first '-----' to the end of the last '-----'.
  - copy the selected text & paste into the text editor & save the result as, in line with this procedure, "PKCS7.txt"
    - Make sure that there are no leading or trailing spaces on the lines
    - Preserve the lines; do not alter the number of lines!!
- ✓ •datatext.txt: (this is optional)
  - open a text editor (eg. notepad)
  - open the pdf invoice; select the data text, from the first '<' to the end of the last '>'
  - copy the selected text & paste into the text editor & save the result as, in line with this procedure, "datatext.txt" Make sure you bring everything together on one line!! Without line-ending; the last character must be the >
- ✓ •Brenntag certificates:
  - Download the Brenntag public certificate, which includes the StartSSL CA root & intermediate certificates
    - For Brenntag NV: invoicesrp1101.brenntag.be.20141113.crt [use Save As...] (valid until 13.11.2014)
    - For Brenntag Nederland BV: invoicesrp1101.brenntag.nl.20141115.crt [use Save As...] (valid until 15.11.2014).
  - In line with this procedure, rename the downloaded file to "brenntag.crt".

Performing the verification

We assume that the PKCS7.txt, datatext.txt & brenntag.crt are saved under the "C:\".
We assume that you have opened a command prompt & have the openssl.exe directory as your active directory.

We have to use the option "-purpose any" as we are verifying a server SSL signature on a smime type message.
SAP only supports server SSL signatures, and "multipurpose" certificates are not available.
This does not affect the validity of the result.

The command line to verify the PKCS7.txt is:

```
openssl.exe  smime  -verify  -in "C:\PKCS7.txt"  -inform PEM
-CAfile "C:\brenntag.crt"  -certfile "C:\brenntag.crt"  -purpose any
```

The result should be the data text string followed by "Verification successful".
You have guaranteed the authenticity and integrity of your invoice, when the data in the invoice layout corresponds with the data text on the invoice and in this openssl verification result.

Alternatively, the command line to verify the PKCS7.txt against the datatext.txt and the signature in one go is:

```
openssl.exe  smime  -verify  -in "C:\PKCS7.txt"  -inform PEM
- content "C:\datatext.txt"
 - CAfile "C:\brenntag.crt"  -certfile "C:\brenntag.crt"  -purpose any
```

The result should be the data text string followed by "Verification successful".
You have guaranteed the authenticity and integrity of your invoice, when the data in the invoice layout corresponds with the data text on the invoice and in this openssl verification result.

Once the validity of the signature has expired you can still verify that content & signature have integrity, use the same command line and add "-noverify" as an option; this option skips the verification of the signature as a valid signature.

Do not hesitate to contact us when you have further questions relating to the verification of Brenntag invoices.