

Note: 000100

Overview

Number	000100
Description	Advanced Development - High Pressure Hydrogen Quantity Conversions
Version	01 from 13.07.2022
Status	Released to Customer
Language	EN
Responsible	Markus Seng
Product	BCG
Category	Advanced Development

Symptom

Increasing industry demand for hydrogen quantity conversions.

Cause

Climate change.

Solution

With this note, the Advanced Development (AD) - Development Phase HPH 1 – High pressure hydrogen gas calculations – volumes and masses - <u>as defined in the QuantityWare Development Strategy -</u> <u>Hydrogen Quantity Conversions</u>, is delivered.

Four new template hydrogen conversion groups may be configured - with this AD in place - by certified BCS consultants. Details concerning the configuration and implementation are provided in the working paper "High Pressure Hydrogen Quantity Conversions".

With the next BCS 3.0 CSP, the complete configuration will be included into the BCG 3.0 BC set:

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2 <u>QTH</u>	<u>1 QTH0</u>	QTH0	<u>QTYW</u> QX	HYDRO	GEN HIC	SH PRE	ESG 15	°C / 101	.325 KP	<u>РА</u> В	0.50	0.1	10	0.10	0.	50	
3 <u>QTH</u>	2 <u>QTH2</u>	QTH2	<u>QTYW QY</u>	HYDRO	GEN HIG	SH PRE	ESA 60	°F / 14.6	96 PSI	В	0.50	0.1	10	0.10	0.	50	
4 <u>QTH</u>	<u>3 QTH2</u>	QTH2	<u>QTYW QY</u>	HYDRO	GEN HIG	SH PRE	ESG 60	°F / 14.	<u> 96 PSI</u>	в	0.50	0.1	10	0.10	0.	50	

Oil & Gas Test Calculator Examples:

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- a. Calculation of molar densities and compression factors is achieved via a new NIST ABAP function, defined in J. Res. Natl. Inst. Stand. Technol. 113, 341-350 (2008) - Revised Standardized Equation for Hydrogen Gas Densities for Fuel Consumption Applications.
- b. Masses and volumes may be calculated & converted; volume UoM need to be either at observed conditions (no temperature and no pressure value assigned to the UoM) or at defined standard reference conditions (temperature and pressure value assigned to UoM).
- c. Typically, the volume at flowing conditions is the transaction quantity. However, any UoM of SAP Dimension ID MASS or VOLUME may be used as transaction UoM (symmetric model implementation), if the requirement described in (b) for volume UoM is considered.
- d. The molar mass and the heating values are read from the assigned physical property data set. The density value is calculated from the molar density value.

Transport Reference

SAP Release	Transport	File Name	Notes
ECC600	QOIK900370	NOTE-00100-30x.SAR	
S/4 HANA	QOIK900370	NOTE-00100-30x.SAR	

Validity

SAP Release	From SP	To SP	In SP Shipment
ECC600	BCS 3.0 CSP02	BCS 3.0 CSP03	BCS 3.0 CSP03
S/4 HANA	BCS 3.0 CSP01	BCS 3.0 CSP02	BCS 3.0 CSP02