Handheld Stick 2 in 1 Salt in Crude Oil and Temperature analyser

METHOD(S)- ASTM D 3230 AND IP 265.
SAMPLE TYPE- CRUDE OIL.

BACKGROUND

The D-2 Inc. “Stick” Sensor (JF-1A-HH-ST) is designed to measure salt in crude Oil according to ASTM 3230 and IP 265. The Stick primarily measures Conductivity using our patented AC Measurement technology and also offers the auxiliary measurement of Temperature.Results are displayed on a 128 x 32 OLED Graphic display that switches between the two different units of measure, Salt in Crude and Temperature. This continues for a minute’s time after measure to ensure the user can comfortably read the measurement even after the sensor has been removed from the sample. The sensor can also output ASCII formatted data via a built in Infra-red communications port. This communications port is utilized with our field calibrating device.The Stick Salt in Crude Oil unit is compact and can be used in just one hand. A pressure sensitive switch at the top of the stick is used as an on/off switch as well as a control in the sampling process.The Stick Sensor is supplied with long lasting “off the shelf” batteries using lithium technology which are field replaceable. The sensor has an auto-shutdown feature to ensure minimal power drain if accidentally left in the on position, allowing for thousands of samples per battery set. The sensor is provided in a rugged protective sheath, equipment with user friendly belt loop for easy transportation and use.The Instruments novel low profile diameter allows for sampling directly in standard fuel sample collection bottles.

TEST PROTOCOL

Transfer 10 ml of the crude oil sample into the 100 ml graduated glass-stoppered cylinder. Make up to 50 mL with xylene and shake the cylinder vigorously for approximately 60 sec. dilute to 100 ml with mixed alcohol solvent, and again shake vigorously for approximately 30 sec. after allowing the solution to stand for approximately 5 min, pour it into the dry test beaker then start the measurements using D2Inc. stick salt-In- Crude analyzer.The D2Inc. Stick Salt-in-Crude Analyzer is a robust and portable instrument for determining the chloride (salt) content of crude oils in full conformity to ASTM D 3230, IP 265 and equivalent test methods. The Analyzer is pre-calibrated and automatically displays salt concentration measurements in g/m3 or lbs./1000bbl (pounds per thousand barrels) and Temperature in degree C or F, this avoids the need to mix salt calibration standards and makes testing a simple and fast procedure.

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APPLICATIONS

Salts basically chlorides might be formed in Crude oil which creates a serious problem during drilling,
pumping and refining processes as well as it is a concern during Oil transportation. Excessive salt
levels may cause multiple problems such as corrosion problems, clogging of pipelines, refining and
catalytic processes.

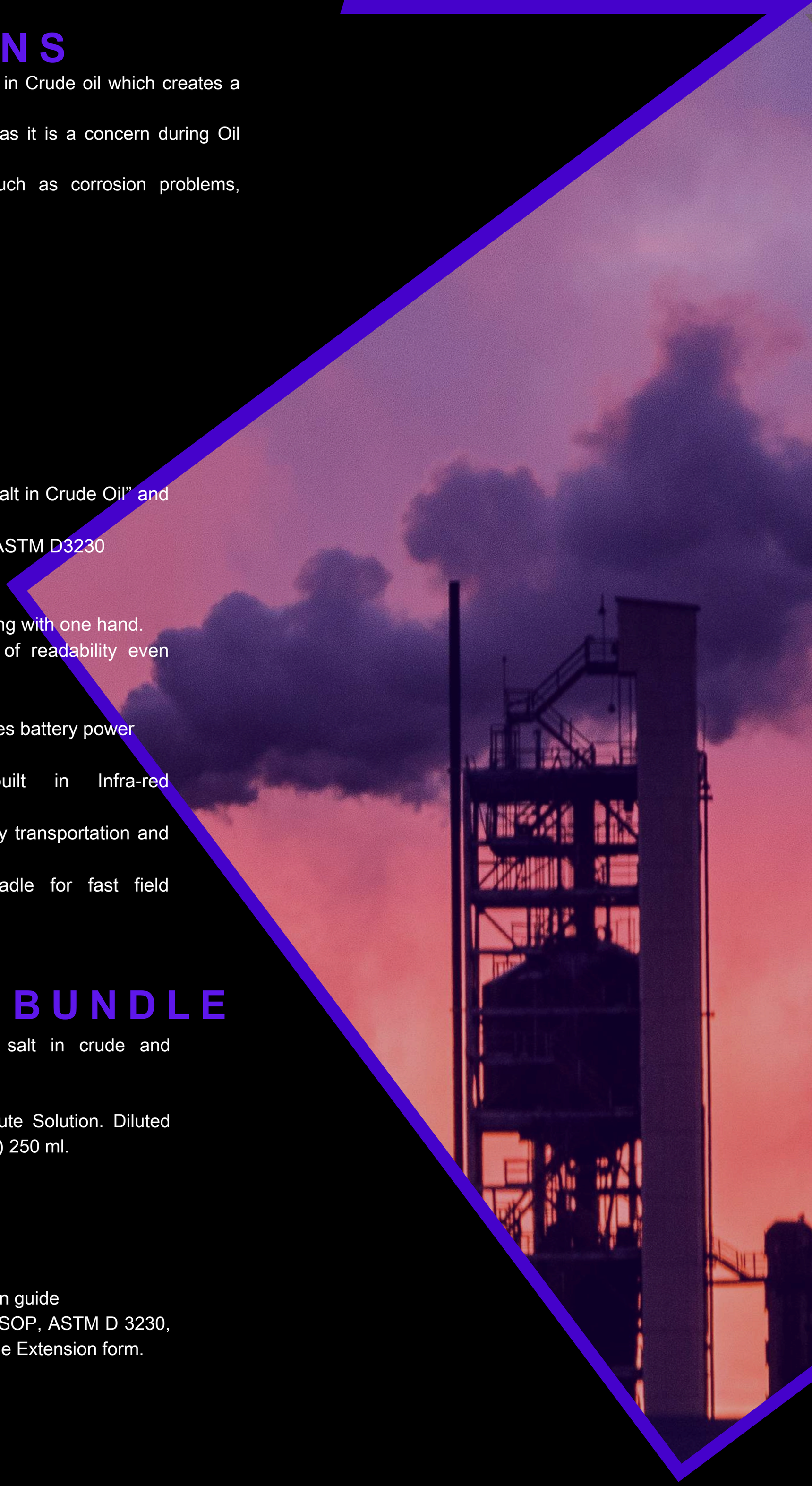
- Oil Terminals.
- Oil Pipelines.
- Oil Refineries.
- Oil Pumping stations.
- Oil Storage facilities.
- Inspection labs.

FEATURES

- cost-effective hand-held 2 parameters “Salt in Crude Oil” and “Temperature”
- Pre-calibrated for immediate use as per ASTM D3230
- Shortest Test time < 30 seconds
- Patented AC measurement technology.
- Compact design allows seamless sampling with one hand.
- Repeating display values allows ease of readability even after sensor is removed from sample.
- 128 x 32 OLED Graphic display
- Auto-shutdown after one minute conserves battery power
- Batteries are field replaceable.
- Direct LIMS Connectivity via built in Infra-red communications port.
- Supplied with rugged carrying case Easy transportation and use.
- Optional Calibration / Verification Cradle for fast field validation and calibration.

OUT OF BOX BUNDLE

- Salt in Crude Sensor reporting both salt in crude and Temperature
- Sensor Stand.
- ASTM D3230 Salts, Mixed Solution (Dilute Solution. Diluted with the specified concentration of alcohol) 250 ml.
- ASTM D3230 Oil, Refined Neutral
- Glass Beaker 100 ml (10)
- 100 ml Beakers holder
- 4 x AAA Batteries
- Carrying Case
- Laminated A4 page step-by-step Operation guide
- USB Stick including Operational manual, SOP, ASTM D 3230, Product’s brochure and 2nd year warrantee Extension form.



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SPECIFICATIONS

- Method (s) : ASTM D3230 and IP 265
- Conductivity Range : 0 pS/m – 430 g/M^3 / 0.0 to 151 lbs./1000bbl
- Resolution 0.1 g/M^3 / 0.1 lbs./1000bbl)
- Accuracy +/- 5% of Range +/- 2% of Reading
- Temperature Range : 0 - 125° Celsius
- Temperature Resolution : 0.1 °C
- Temperature Accuracy : +/- 1.0 °C (Typ.) +/- 2.0 °C (Max)
- Environmental Ambient Operating Temperature Range : -20 to 125 °C
- Storage Temperature Range: - 40 to 125 °C
- Process Fluid Temp Range : 0 to 125 °C
- Power : 1.5V AAA Battery, Lithium, Quantity 2 (Field Replaceable) Estimated Lifespan > 1000 samples
- Wetted Materials Type 316 SS, Viton, Delrin, (Housing: Anodized Aluminium and Polycarbonate)
- Display: 128 x 32 OLED Graphic Display
- Communication : ASCII Encoded Infra-Red Communications Port.
- Size (H x D) 20.7 x 2.3 cm
- Weight: 150 g

CALIBRATION & VERIFICATION

D2 Inc. provides a self-Contained Calibration Cradle Model JF-1A-VC-SEF (Salt in Crude Version) for
stick salt in crude oil sensor Calibration fall under D2-Inc. ISO 17025 calibration program.

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The JF-1A-VC-SEF device is a self-contained calibration / validation tool, that does NOT require the USB connection to a PC Computer. The device has full high resolution color display. Installation of the Stick sensor into cradle checks the “mechanical” shape of the sensor to ensure that no damage has occurred. The user can then cycle the unit through a complete electronic validation of the sensor at 5 levels across the range of conductivity 0 – 430 g/M^3 with pass / fail protocol showing equivalent salt values of:

- 50 g/m^3
- 100 g/m^3
- 200 g/m^3
- 300 g/m^3
- 400 g/m^3.

In the event that a validation does not pass the user can cycle the sensor through an automatic calibration process and then re-perform the validation. The self-contained unit has a screen where the results of validation along with unit serial number and date are displayed. The calibration cradle itself carries a 10-year calibration certificate. After 10 years the cradle can be returned to D-2Inc. for a recalibration and recertification under ISO 17025.

Ordering Information

PN	Contents
JF-1A-HH-ST	D2Inc. Salt in Crude Oil analyser ASTM D3230 and IP 265.
JF-1A-VC-SEF	D2Inc. self-Contained Calibration / Validation Cradle.

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