



INMOTION ENERGY (OPC) PRIVATE LIMITED

Sand Content Test Kit

Complete Field Kit for Determining Sand Content of Water-Based Drilling Fluids

Model No: IM-SC-200

Compliance & Target Standard: API RP 13B-1, Section 9

INSTRUCTION MANUAL

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Introduction

Sand and other abrasive solids larger than 75 microns (200 mesh) do real damage if they're allowed to circulate: they accelerate wear on mud pumps, bit nozzles, and downhole tools, and they can pack off screens or plug perforations during completion. Field crews track sand content specifically so this abrasive fraction doesn't go unnoticed between mud checks.

A sand content test kit makes that check fast and repeatable. It needs no power source and no reagents beyond ordinary water — a diluted mud sample is washed through a 200-mesh screen, the retained solids are transferred to a graduated tube, and the settled volume is read directly as a percentage.

Description

The Inmotion Sand Content Test Kit works on a wash-and-settle principle described in API RP 13B-1, Section 9. A measured volume of mud is diluted with water inside the wash bottle, then poured through a 200-mesh (75-micron) screen. Everything coarser than the screen — sand, and any other abrasive solids of similar size — is retained; everything finer washes through and is discarded.

The retained solids are then backwashed off the screen, through a funnel, into a graduated glass tube. Once the solids settle, the sand fraction is read directly from the tube's tapered scale as percent by volume.

- **Kit contents:** graduated sand content tube, 200-mesh sieve, funnel, and graduated wash bottle, carried in a compact hard case.

Components

Part Number	Description
IM-SC-200-01	Graduated Sand Content Tube, Glass, 0 – 20% Scale
IM-SC-200-02	200-Mesh Sieve / Screen (75-micron)
IM-SC-200-03	Funnel, Polypropylene
IM-SC-200-04	Wash Bottle, 500 mL, Graduated
IM-SC-200-05	Hard Carrying Case, Shoulder Strap



Fig. 1 — The Inmotion Sand Content Test Kit: hard carrying case, funnel, graduated sand content tube, 200-mesh sieve, and wash bottle

Features

- **Complete Test Kit** — supplied with everything needed to run a sand content test in the field: tube, sieve, funnel, and wash bottle.
- **Graduated Glass Tube** — clear, chemical-resistant glass with an expanded low-end scale so small sand fractions are still easy to resolve.
- **Precision-Woven Screen** — 200-mesh (75-micron) stainless screen retains sand while allowing drilling-fluid solids to pass through.
- **Wide-Mouth Funnel** — directs washed solids cleanly into the tube with minimal loss.
- **Graduated Wash Bottle** — 500 mL capacity with volume markings, for consistent dilution and thorough screen washing.
- **Compact Kit** — all components fit in a hard carrying case for safe transport between rig floor and lab.

Specifications

Sand Content Scale	0 – 20% by volume
Scale Graduation	Expanded graduations below 5% for improved low-end resolution
Screen Mesh Size	200 mesh (75 microns nominal opening)
Wash Bottle Capacity	500 mL, graduated in 250 mL increments
Reading Resolution	0.1% (below 5% sand); 1% (5 – 20% sand)
Material of Construction	Borosilicate glass tube; polypropylene sieve, funnel, and wash bottle
Applicable Standard	API RP 13B-1, Section 9 (Sand Content)
Case	Hard carrying case (included)
Overall Kit Weight (approx.)	0.6 kg (1 lb 5 oz)

Operation

1. Fill the wash bottle with water and set the sand content tube, funnel, and sieve within easy reach on a flat surface.
2. Pour a fresh mud sample into the graduated tube up to the lower mark (the “Mud to Here” line).
3. Add water from the wash bottle up to the upper mark (the “Water to Here” line).



Graduated sand content tube, showing the “Water to Here” and “Mud to Here” fill marks

4. Cap the tube and shake vigorously until the mud and water are thoroughly mixed and any sand is fully dispersed.
5. Pour the diluted sample through the 200-mesh sieve, discarding the liquid that passes through. Sand and coarse solids remain on the screen.



200-mesh sieve — retains sand and solids coarser than 75 microns

✓ TIP

Rinse the empty tube out first and pour slowly. Any sand left clinging to the tube walls should be rinsed onto the screen as well, or it will be missed in the final reading.

6. Wash the sieve thoroughly with water from the wash bottle until the mud is completely rinsed off and the wash water runs clear.



Wash bottle — used to rinse the screen and backwash sand into the tube

7. Invert the funnel over the mouth of the graduated tube, then invert the sieve over the funnel.
8. Wash the retained sand from the screen through the funnel into the tube, using a gentle stream from the wash bottle until all sand has been transferred.



Funnel — directs washed sand cleanly from the sieve into the graduated tube

9. Top up the tube with water to the nearest graduation line, then tap the side of the tube gently to help the sand settle to the bottom.
10. Allow the sand to settle fully (typically a few minutes) before taking a reading.
11. Read the sand content directly from the graduated scale at the top of the settled sand column.



Settled sand at the base of the graduated scale — read percent by volume directly from the tube

⚠ IMPORTANT

Drilling fluids and the fine barite or clay solids they carry can be caustic or irritating on contact. Gloves and eye protection should be worn any time samples are handled.

Reporting Results

Report sand content as percent by volume, read directly from the tube scale. Round to the nearest 0.1% below 5% sand, and to the nearest 1% above 5% sand, or as your mud report specifies.

Calibration & Verification

Factory Calibration

Unlike an instrument with moving parts, the sand content tube has no adjustment to make — its graduations are set and verified against a certified volumetric standard at the time of manufacture. There is no field calibration procedure for the tube itself.

Periodic Verification

1. Using a clean, dry graduated cylinder or pipette, measure a known volume of water corresponding to a graduation on the tube (for example, the volume equal to the 5% mark).
2. Pour the measured volume into the empty, dry sand content tube.
3. Confirm the liquid meniscus lines up with the corresponding graduation mark on the tube.
4. Repeat at a second graduation (for example, the 1% or 10% mark) to check the scale across its range.

✓ TIP

If the kit is used heavily or readings start to look inconsistent with known reference samples, verify the tube at two or three points on the scale rather than just one — this catches localized etching or reading errors that a single check would miss.

When to Verify

- Before any critical or disputed test run.
- After the tube has been dropped, chipped, or otherwise physically stressed.
- If sand content readings no longer track with a known reference sample or a second kit.
- On whatever routine schedule your facility's QA/QC program calls for.

⚠ IMPORTANT

A chipped or cracked graduated tube should be taken out of service. Hairline damage near the tapered scale can distort the reading even when the tube still holds liquid without leaking.

Maintenance

1. Inspect the tube, sieve mesh, funnel, and wash bottle before each test — the mesh should be free of tears, and the tube free of chips or cracks.
2. Rinse every component thoroughly after each test. Mud solids left to dry on the screen are far harder to remove and can distort mesh openings over time.
3. Dry all components completely before returning them to the case.
4. Store the kit in its carrying case between uses — the tube's graduated scale and the sieve mesh are both easy to damage if left loose.
5. Re-run the Verification check (page 9) any time a component is replaced or readings start to look inconsistent.

NOTE

Never scrub the sieve mesh with an abrasive brush or metal tool — this can distort the 200-mesh openings and skew every reading afterward. Rinse it clean with water only, from the inside out.

Troubleshooting

Symptom	Possible Cause	Recommended Action
Sand reading looks lower than expected	Sand left clinging to the tube walls or sieve during transfer	Rinse the tube and sieve more thoroughly; use a stronger stream from the wash bottle to fully transfer solids
Sand reading looks higher than expected	Wash water not run clear before backwashing, leaving fine mud solids on the screen	Continue washing the sieve until the rinse water runs clear before transferring solids to the tube
Solids won't settle, reading stays cloudy	Insufficient settling time, or very fine solids passing through a damaged screen	Allow more settling time; inspect the sieve mesh for tears or excessive wear
Hard to read the scale accurately	Tube is dirty, scratched, or viewed at an angle	Clean the tube; read the scale at eye level with the tube on a level surface
Liquid leaking from the tube	Chip, crack, or damaged base on the graduated tube	Take the tube out of service and replace it — do not continue using a damaged tube

Still stuck after trying the above? Set the kit aside and get in touch with Inmotion Energy (see Company & Contact Information, page 13).

Warranty and Return Policy

Warranty

Inmotion Energy (OPC) Private Limited stands behind the materials and workmanship of every kit it ships. For eighteen (18) months from the invoice date, if a product turns out not to meet its stated specifications through no fault of the buyer, and we're notified in writing once the issue is found, we'll repair or replace it at our discretion, subject to the exclusions below.

This coverage assumes normal use, in line with the operating conditions described in this manual. It does not stretch to cover use outside those conditions, nor to flaws that were plainly visible on arrival but went unreported.

Beyond what's stated here, Inmotion Energy doesn't offer any other express or implied warranty — including, to the extent the law allows, implied warranties of merchantability or fitness for a particular purpose.

Coverage does not extend to damage or loss caused by:

- Installation, operation, or upkeep that doesn't follow this manual
- Misuse, carelessness, or accidental damage — including a dropped or chipped glass tube
- Adjustment or repair carried out by anyone other than Inmotion Energy or an authorized service provider
- Storage conditions or exposure beyond what normal field use implies
- Parts or components sourced from outside Inmotion Energy
- **Ordinary wear items** — the sieve mesh and glass tube, for example

Returns and Repairs

Pack anything you're sending back carefully — Inmotion Energy can't take responsibility for damage caused by inadequate packaging in transit, particularly for the glass tube.

If you're returning a unit that isn't defective, do so within thirty (30) days of your invoice; a restocking charge may apply, and the item needs to arrive in its original condition to qualify for a refund.

Before shipping anything back, reach out to us with your invoice number, a description of the issue, and your contact details so we can set expectations. Send equipment to:

Inmotion Energy (OPC) Private Limited

Attn: Service & Repair

186, 1st Main Road, Vijaya Bank Layout, Bilekahalli
Bangalore, Karnataka – 560076, India

Questions before then? Reach our support team at info@inmotionenergy.in.

Ordering & Replacement Parts

Send the Inmotion Energy sales team a note about what you're working on, and we'll get back with a recommendation and a quote. Spare tubes, sieves, and wash bottles are kept in stock and shipped on request.

Have this ready when you reach out:

- Model / catalog number (IM-SC-200)
- The part number and description you need (see Components, page 4)
- How many you need
- Your company name, shipping address, and a contact point

Company & Contact Information

Inmotion Energy has spent years supplying precision testing instruments and drilling tools to operators working with drilling fluids, cements, and completion fluids. Working out of our Bangalore facility, we serve customers across India and the Middle East. Being an independent manufacturer means our customers come first, not a parent company's agenda.

Industries We Serve

- Onshore & offshore drilling contractors
- National & independent oil companies
- Mud engineering & testing laboratories
- Well completion & workover operations

Why Choose Us

- Every kit goes through rigorous checks before it ships
- Spares and replacements move fast, so downtime doesn't stack up
- Designs proven in the field, built to keep working

Contact Details

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