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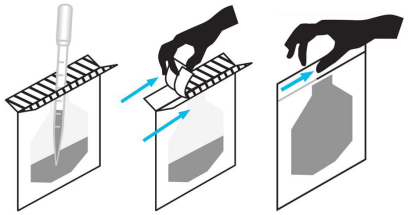
Instructions for the 3M™ Rapid SRB Detection Pouch

1 Inoculate



Inoculate test as soon as the sample is drawn. Fill sterile, disposable pipette with 3 mL of sample. Insert the pipette between the paper tabs to the bottom of the pouch and dispense sample. Ensure the adhesive strip stays dry. After removing the pipette, bend tabs outward and simultaneously peel off both liners. Seal across the top starting in the center.

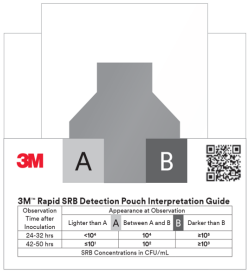
Immediately after inoculation, ensure the pouch is lighter than "A" on the interpretation card. A pouch that is immediately darker than "A" indicates a discolored or high sulfide sample, not a result positive for SRB. Dilute the sample and inoculate another test (see instructions on reverse). Pouches should look like the picture to the left immediately after inoculation. If results are negative, the pouch maintains its original appearance.

2 Incubate

Incubate the test at 30°C. If the sample temperature is recorded at higher than 30°C, incubate within 5°C of the recorded sample temperature per NACE TM 0194 -2014. Incubating below ideal temperature may cause slower, underestimated, or false negative test results.

3 Interpret

Check once approximately every 24 hours for complete quantitation. For best visual results, gently mix pouch contents to a uniform color before inspection. Once any positive result is observed, the test is complete.



Two interpretation methods are provided for your convenience and will provide the same answer. The card pictured to the left provides quantitation from 10^5 to 10^2 based on two checks and two color comparators, "A" and "B." The chart to the right provides the full range of quantitation from 10^7 to 1 SRB/mL based on three comparison pictures and offers users additional timing options for observing results.

Incubated at appropriate temperatures:

≥10 SRB/mL can typically be determined by 48 hours. Negative results can typically be determined by 72 hours. Incubating below ideal temperature may slow results.

If pouch is positive, compare pouch color (light, medium, dark) and the number of hours after inoculation (rounding to the nearest hour on the chart) to estimate the SRB population.

Days ➡	<1	1			2			3
Hours after inoculation	4	8	16	24	32	40	48	56
	7	14	22	30	38	46	54	62
	10	22	30	38	46	54	62	70
Results (SRB/mL)	10^7	10^6	10^5	10^4	10^3	10^2	10^1	1

Quantitation chart based on *D. desulfuricans* ATCC 29577 and *D. vulgaris* ATCC 29579 incubated at 30°C per NACE TM0194-2014* *This guide may not represent the range of results observed in field samples.*

Storage and Disposal

Store unopened foil packages at 4° to 8°C for maximum shelf life. Let foil packages come to room temperature before opening. Reseal opened foil package with zipper and store at room temperature.

Product is non-hazardous before inoculation. After use, pouches may contain microorganisms that could be a potential biohazard. Follow current local, national and industry standards for disposal.

A detailed user guide and FAQs at: 3M.com/RapidSRBDetection

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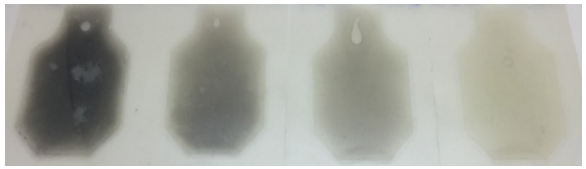
Dilution for discolored or high sulfide samples

When a dilution should be performed

If a pouch turns gray within minutes of inoculation, but not darker than the "A" reference on interpretation card, it can be used as instructed without a dilution. If the pouch is darker than "A," dilute the sample and inoculate another pouch. For low TDS samples, use off-the-shelf dilution blanks or dechlorinated water as the diluent.

Appearance with samples containing H2S



Pouch appearance at inoculation				
Sample H_2S (ppm)	50	25	17	5

Dilution with Salinity Matching

Matching the TDS level of the original sample is important to promoting SRB growth. Use of a brine or aquarium salt mix is a field expedient way to adjust the diluent TDS level.

Mix salt in 90mL of dechlorinate water as a diluent, shaking to mix.
For 1:9 dilution, add 10 mL of sample to the 90mL diluent mixture.
Draw up 3mL with sterile bulb pipette and inoculate pouch.

Diluent mixing reference Add to 90 mL water		
TDS %	Volume	Weight
2.5%	½ tsp	2.3 grams
5%	1 tsp	4.5 grams
7.5%	1 ½ tsp	6.8 grams
10%	2 tsp	9.0 grams
12.5%	2 ½ tsp	11.3 grams
15%	3 tsp	13.5 grams

How to adjust results based on dilution ratio

Results are delayed if a dilution is performed. For easiest interpretation adjustment, use a 1:9 dilution. A 1:9 dilution causes an 8 hour delay.
Use the existing interpretation card or chart and add one order of magnitude (a reading of 10^2 reflects a concentration of 103 in the original sample). When using a 1:9 dilution, this adjusted interpretation table can be used:

Amended interpretation after a 1:9 dilution

Observation time after Inoculation	Appearance at Observation		
	Lighter than A (A)	Between A and B (B)	Darker than B
24-32 hrs	$<10^5$	10^5	$\geq 10^6$
42-50 hrs	$<10^3$	10^3	$\geq 10^4$
68-76 hrs	≤1	$1\text{-}10^1$	$\geq 10^1$
SRB Concentrations in CFU/mL			

More information at 3M.com/RapidSRBDetection

*NACE TM0194-2014 (Latest Version), "Field Monitoring of Bacterial Growth in Oil and Gas Systems" (Houston, TX: NACE)

⚠ **CAUTION** To reduce the risks associated with exposure to water from the oil well which, if not avoided, could result in minor or moderate injury: ***Always wear personal protective equipment per facility policies and procedures.***

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3M

3M Advanced Materials Division
3M Center
St. Paul, MN 55144 USA
1-800-367-8905
3M.com/RapidSRBDetection

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