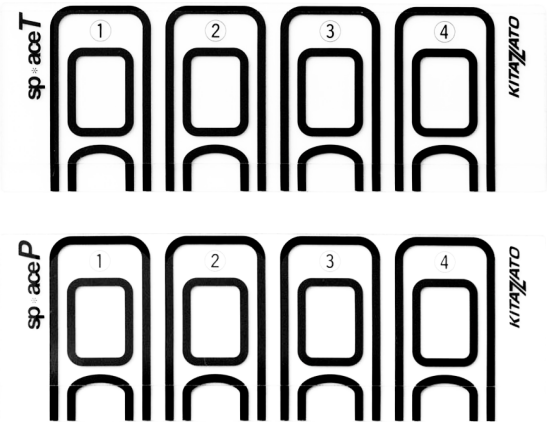
PRODUCT CATALOGUE

sp-ace

- Disposable sperm counting chamber.
  For counting the number of sperm and analyzing the motility of sperm with high accuracy, efficiency and with ease.
- Chamber depth is 0.01mm.
- Dropping sample(5μL) on the entrance fills up the Chamber with sample by itself uniformly.
- 4 samples can be measured with one slide.

*Wait for 2 minutes before measuring sperm immobility.

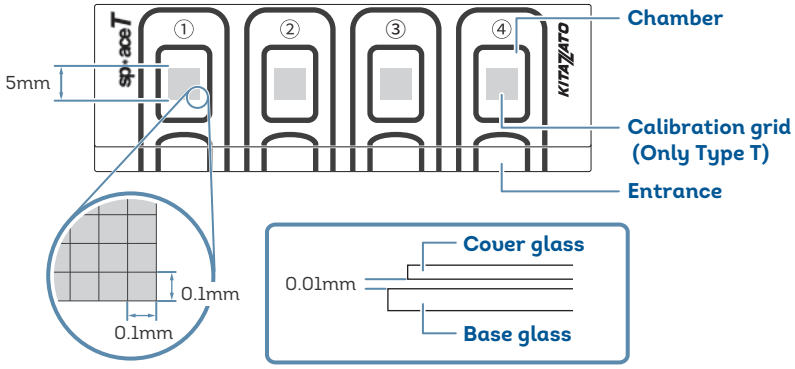


REF	Code	Details	Contents
65015	sp-ace T	sp-ace T with Grid (0.1mm x 0.1mm)	25 pcs / box
65016	sp-ace P	sp-ace P (without Grid)	25 pcs / box

COMPOSITION

Outer diameter :	76 x 26 x 1.6mm
Chamber size :	10 x 7mm
Chamber depth :	0.01mm
Measurement grid :	5 x 5mm
Calibration grid :	1square 0.1 x 0.1mm

*Calibration grid is only on Type T.



PROTOCOL

01 Sample preparation
Liquify and stir the semen and make sure that viscosity is evenly distributed.

02 Chamber preparation
Drop the prepared sample (5μL) at the center of the Entrance. The sample will spread automatically.
Move the slide under the microscope and focus on the layer of sample.

03 Count method
sp-aceT (with grid) : Use square volume of calibration grid to calculate.
sp-aceP (without grid) : Use calibrated ocular micrometer with microscope or Computer Aided Sperm Analysis (CASA) to calculate.

*Contact the manufacture of microscope for calibrated ocular micrometer if desired.

Specification may change without pre-notice for purpose of product improvement.

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Count Method

○ sp-aceT (with grid)

Chamber depth is 0.01mm and each square is 0.1mm x 0.1mm, so that the volume over a square is 10^{-7}mL. Sample concentration is calculated from the following formula.

$$\text{Sperm Concentration (/mL)} = \frac{\text{Counted number of sperm} \times 10}{\text{Counted number of squares}} \times 10^6$$

For example, when the number of sperm counted in 10 squares (10^{-6}mL) are 50, multiplying million to 50 is equal to the number of sperm per mL.

$$\text{Sperm Concentration} = 50.0 \times 10^6/\text{mL}$$

○ sp-aceP (without grid)

Use calibrated ocular micrometer with microscope to calculate. Contact the manufacturer of microscope for calibrated ocular micrometer if desired.

Sperm Motility Assessment

The motility of sperm can be categorized as:
Progressive motile sperm (PR) / Non-progressive motile sperm (NR) / Immotile sperm (IM)

Determine if the total number of motile sperm (PR+NP) or only progressive (PR) motile sperm is to be assessed, then calculate the motility sperm rate as the following formula.

$$\text{Sperm Motility Rate (\%)} = \frac{\text{Number of motile sperm} \times 100}{\text{Total number of motile sperm}}$$

*More precise data is obtained by averaging the figure counted in multiple positions.

WHO laboratory manual

for the Examination and processing of Human semen FIFTH EDITION (2010)

Categories of sperm movement

A simple system for grading motility is recommended that distinguishes spermatozoa with progressive or non-progressive motility from those that are immotile. The motility of each spermatozoon is graded as follows:

Progressive motility (PR)

Spermatozoa moving actively, either linearly or in a large circle regardless of speed.

Non-progressive motility (NP)

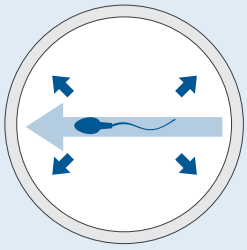
All other patterns of motility with an absence of progression, e.g. swimming in small circles, the flagellar force hardly displacing the head, or when only a flagellar beat can be observed.

Immobility (IM)

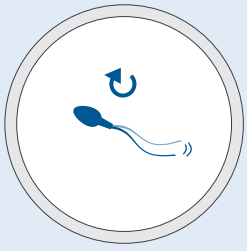
No movement.

Parameter	Lower reference limit
Semen volume (mL)	1.5 (1.4-1.7)
Total sperm number (10^6/ejaculate)	39 (33-46)
Sperm concentration (10^6/mL)	15 (12-16)
Total motility (PR+NP,%)	40 (38-42)
Progressive motility (PR,%)	32 (31-34)
Vitality (live spermatozoa,%)	58 (55-63)
Sperm morphology (normal forms,%)	4 (3.0-4.0)

Progressive motility
-PR-



Non-progressive motility
-NP-



Immobility
-IM-