Cutting water additive to prevent particle adhesion

Particle adhesion is a frequently encountered issue in workpieces with higher water repellency than silicon wafers, such as image sensors with a resin film attached. StayClean-A prevents the workpiece from drying out, and substantially lowers the adhesion of particles by impairing their settling speed.

Low environmental burden

StayClean-A does not include any regulated chemicals, such as substances covered under the RoHS directive or PFOS. Furthermore, StayClean-A can be used in the same environment as normal dicing.

*If your cutting water is being circulated, please contact your DISCO sales representative.

Mechanism

StayClean-A lowers the settling speed of the contamination and prevents adhesion by creating rising air bubbles in the cutting water.

Effect of particle adhesion prevention

When using StayClean-A

Deionized water only

Number of remnant particles after wafer processing

(Assuming the no. of particles when StayClean is used is 1)

*Nozzle + side flow nozzle + chuck table water curtain
StayClean Injector

By using the injector developed exclusively for StayClean, stable supply is possible even at concentrations more dilute than one part per thousand.

StayClean-A StayClean Injector

- **Solution appearance**: Transparent colorless liquid
- **Main ingredients**: Nonionic surfactant + water soluble polymer macromolecule
- **PH (undiluted)**: pH 7.5 - 9.5
- **Residual concentration (when diluted 1000 times)**: 0.01 - 2.00 (JIS K0102-17)
- **Recommended dilution**: 1000 - 2000
- **Power supply, voltage**: AC90 - 230 Single phase 50/60 Hz
- **Supply water temperature**: 20 - 25 deg C
- **Supply water pressure**: 0.2 - 0.5 Mpa
- **Process flow rate**: 2 - 20 L/min
- **Additive injection rate**: 0.1 - 0.01 (1000 - 100 ppm)
- **Machine dimensions (WxDxH)**: 200 x 300 x 500 mm (excluding projections)
- **Machine weight**: Approximately 22 kg (When dry)

### Cautions before using StayClean-A
- Make sure to read the MSDS before using StayClean-A because it describes detailed care regarding its use.
- Do not use StayClean-A for any unintended use.

### Cautions regarding the use of StayClean-A
- Take care that it does not touch your eyes or skin, wear appropriate protective equipment such as gloves and glasses when handling it.
- Avoid using it in conjunction with other chemical agents (in particular strong acids or strong alkalines).

### Cautions regarding StayClean-A storage
- Avoid exposure to direct sunlight and store in a cool dark place. Do not place it in a freezer.
- Seal the container properly before storing it.
- With the container still sealed, the warranty period is one year from the date of manufacture.