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DISCO

Water-soluble Additive

StayClean-F

Prevents pad corrosion during dicing

Pad corrosion prevention

For workpieces that have a long cut time, such as a workpiece with a small die size and a large diameter, corrosion may occur on the bonding pad due to prolonged exposure to the cutting water. By using StayClean-F, it prevents corrosion due to the formation of an ultra-thin barrier layer on the surface of the workpiece.

Particle adhesion prevention

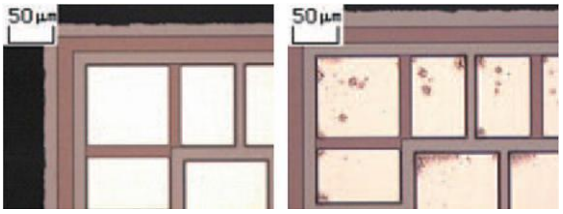
By using the additive agent StayClean-F, it separates particles from the workpiece surface and prevents adhesion of particles that can not be removed with the spinner wash after dicing.

Low environmental load/Low running cost

StayClean-F can be used in the same environment* as normal dicing and does not include any regulated chemicals, such as substances covered under the RoHS directive or PFOS. Furthermore, since StayClean-F can be used even at diluted concentrations of one part per thousand, and in particular at one part per ten thousand to prevent corrosion, the running costs are low.

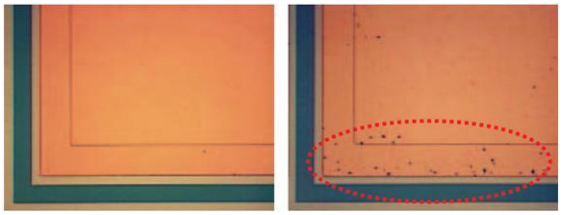
*If the cutting water is being recirculated, please contact your DISCO sales representative.

■Pad corrosion prevention result

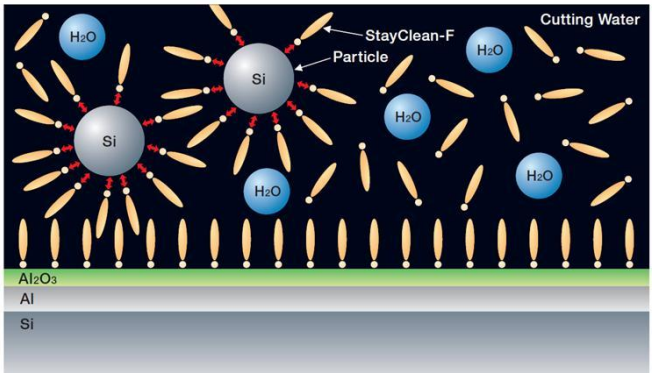


When using StayClean-F　　Deionized water

■Particle adhesion prevention result



When using StayClean-F　　Deionized water



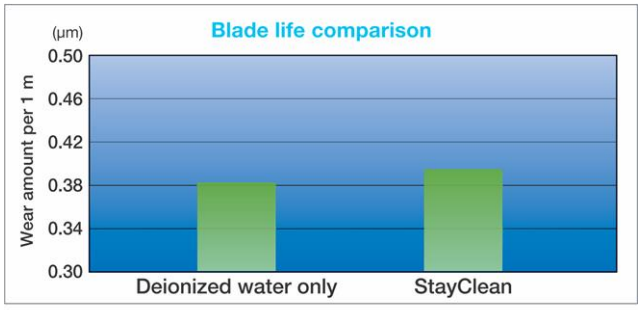
■Mechanism

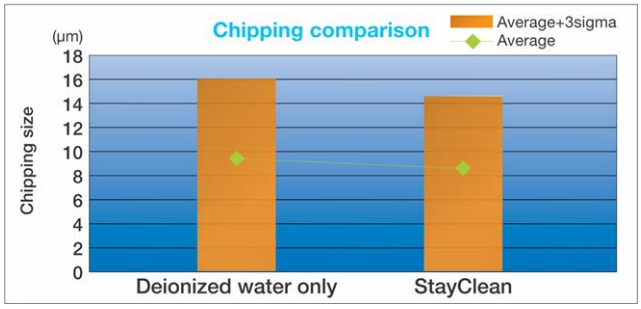
[1] The components of StayClean-F form a barrier layer on the workpiece and this prevents pad corrosion and particle adhesion.

[2] The components of StayClean-F are removed in the spinner wash process.

The use of StayClean-F has no effect on the process results

When StayClean-F is added to the cutting water, the processing results are the same as for deionized water.





Workpiece: Si wafer
Blade: NBC-ZH

Spindle rpm: 40,000 (min-1)
Feed speed: 60 mm/s

Water-soluble Additive

StayClean-F

StayClean Injector

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

Specification

		StayClean-F	StayClean Injector
Solution appearance	-	Transparent colorless and light yellow liquid	
Main ingredient	-	Nonionic surfactant + water soluble polymer macromolecule	
pH (undiluted)	pH	4.7±0.5	
Density (15 degrees C)	g/cm3	1.04±0.02	
Residue/decomposition	mg/L	COD 32(JIS K1002-17)	
(when diluted 1000 times)	mg/L	BOD 2.5(JIS K0102-21)	
Recommended dilution	times	1,000 - 10,000(0.1 - 0.01%)	
Power supply, voltage	V		AC90 - 230 Single phase 50/60 Hz
Supply water temperature	deg C		20 - 25
Supply water pressure	Mpa		0.3
Process flow rate	L/min		2 - 20
Additive injection rate	%		0.1 - 0.01(1,000 - 100 ppm)
Machine dimensions (WxDxH)	mm		Injector 200 x 300 x 500 excluding projections Bottle stocker 357 x 392 x 440 excluding projections
Machine weight	kg		Injector Approximately 22 (When dry) Bottle stocker Approximately 10 (When dry)

Cautions before using StayClean-F

• Make sure to read the MSDS before using StayClean-F because it describes detailed care regarding its use.

• Do not use StayClean-F for any unintended use.

Cautions regarding the use of StayClean-F

• Take care not to 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-F storage

• Avoid exposure to direct sunlight and store in a cool dark place. Do not place it in a freezer.

• Seal the container properly and then store it.

• With the container still sealed, the warranty period is one year from the date of manufacture.