ULVAC make a proposal in the field of Surface Treatment Technology

- Under the consideration of Environment
- To improve the productivity

- Low outgas of Vacuum Equipment
- Challenge to low cost, high speed, and high quality
Surface Treatment

- Insulating film: Polyimide
- Vacuum Equipment (Al alloy) to control dusts and corrosion: VACAL™
- Surface Hardening: TIGOLD DLC
- ULVAC Surface Treatment
  - Alpica®
  - SUSpica®
  - Special Baking
  - Ti-N
  - Ni-p
- To improve affinity to friction and durability: TUFRAM®
- NEDOX®
- NIFGRIP®
- Vacuum Equipment Reduction of outgas

Restorative Cleaning

For the reduction of Particles and maintenance Costs

- Recycle Cleaning: ULVAC TECHNO, Ltd.
  - Selective Etching
  - Dry Ice Blast
  - RC Washing
  - High speed removable spouting

- Ultra Clean Treatment: ULVAC Materials, Inc.
  - A treatment
  - HA, HA-G treatment
  - T treatment
  - C treatment
Surface Treatment

Examples for Solutions

**Special hard alumite deposition treatment, reduced the surface crack drastically**

**VACAL®**

By VACAL®, the generation of corrosion and dust caused by surface crack at the heated areas near the plasma region of CVD and etching equipment are prevented.

VACAL®, is original developed technology by ULVAC TECHNO, Ltd.

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**Polyimide Coating**

Example: Shock absorbed film

Etcher Parts
Silica made; Si wafer holder

In order to get shield effects, film is deposited on silica substrate.

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**Surface Treatment for Low outgas in a vacuum**

**SUSpica®**

Available materials
SUS304, SUS304L
SUS316, SUS316L

Feature: Low outgas

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**UC-Treatment**

For cost reduction on maintenance, and higher productivity with particle reduction.

- Long time operation without maintenance and high productivity with lower particle.
- Applicable to ultra-high vacuum.