

Accompanying drawing(s) of the present invention: Method and apparatus for deposition removal and precision cleaning of high purity ceramic process kits used in nanoscale semiconductor manufacturing.

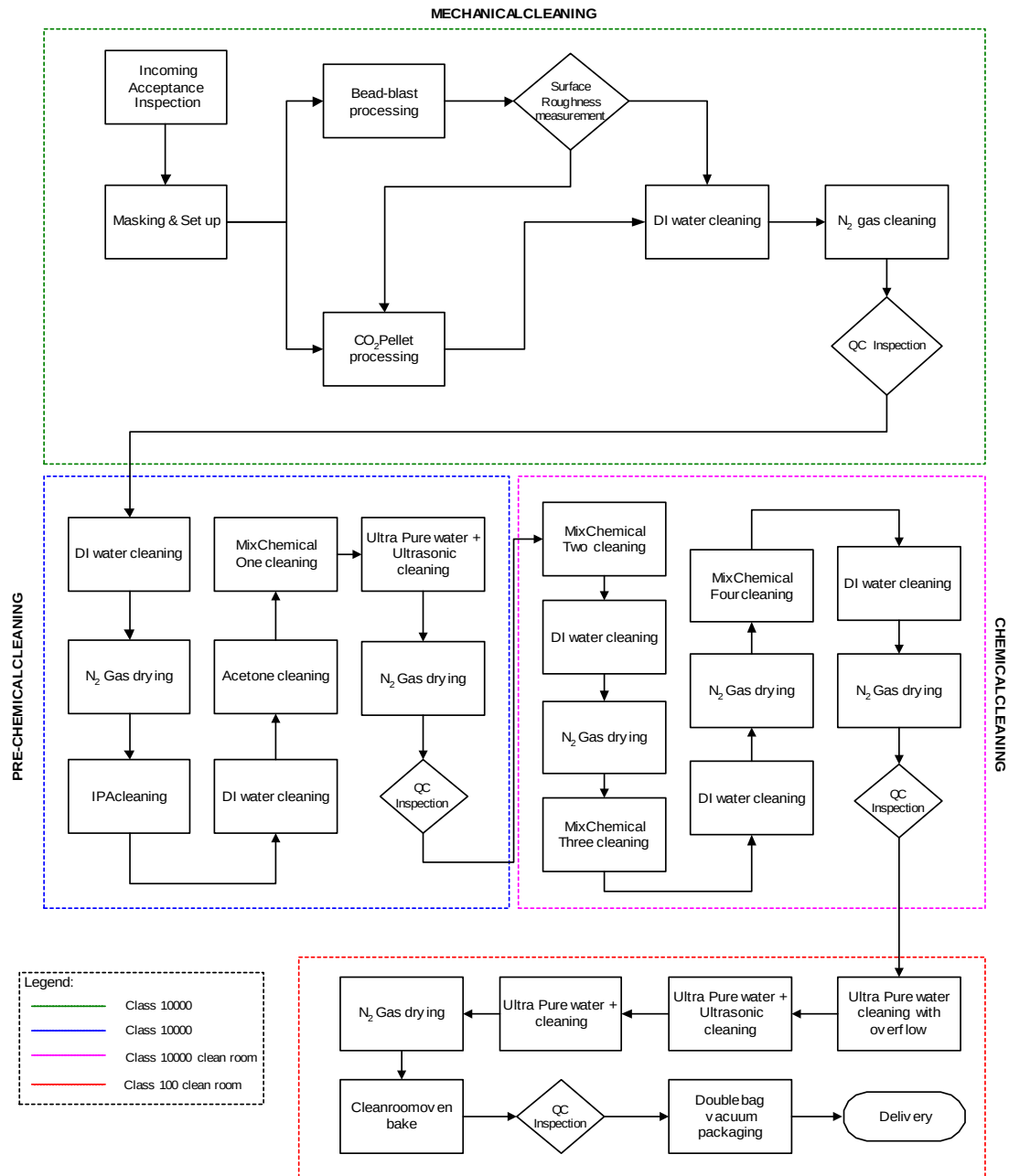


FIGURE 1 illustrates the process flowchart for deposition removal and precision cleaning of high purity ceramic process kits in accordance with the present invention.

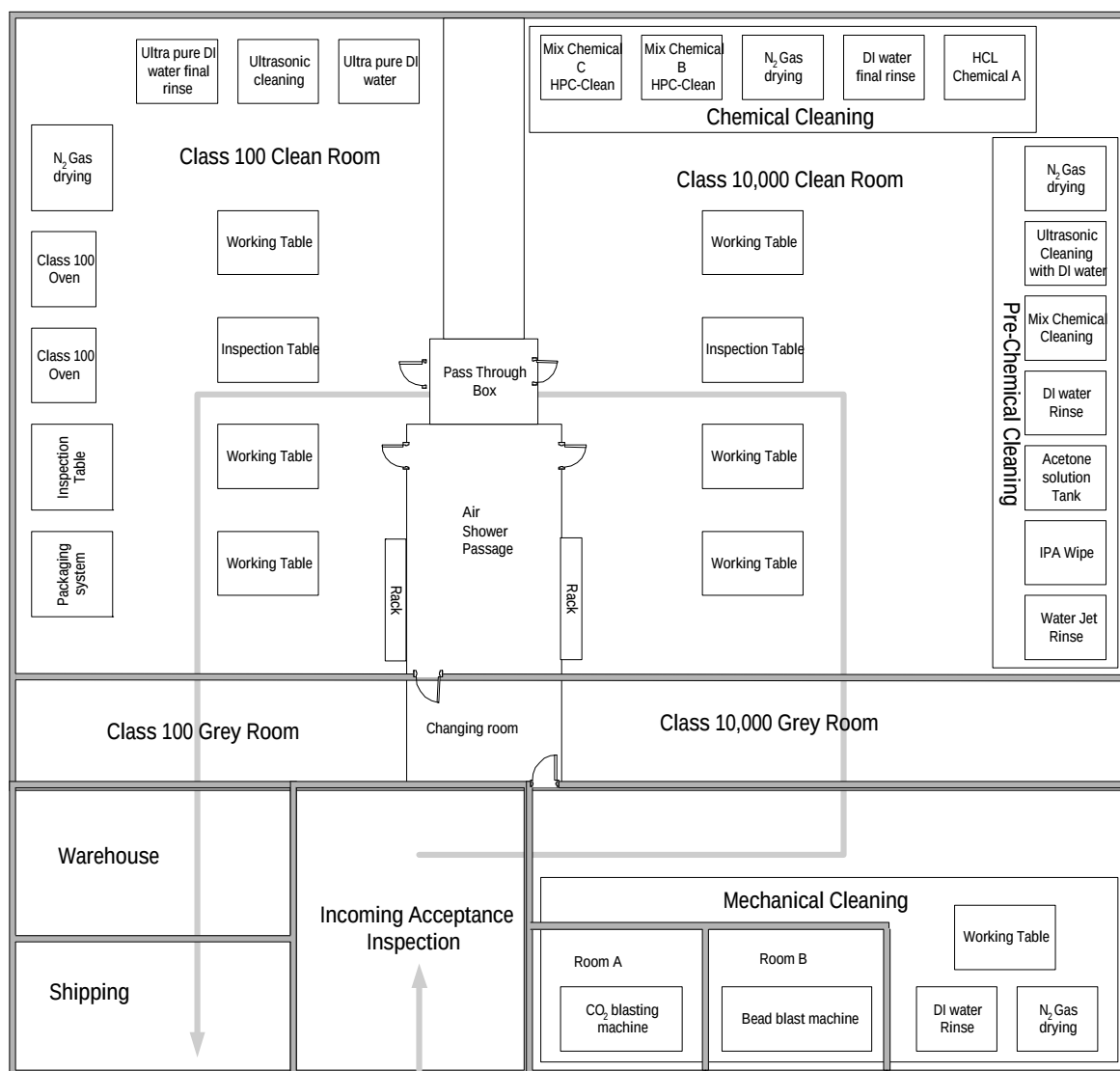


FIGURE 2 illustrates the layout of the apparatus and the physical workflow in accordance with the present invention.

**Surface Trace Metal Results for Ceramic Coupon
by Acid Extraction ICP-MS**

SURFACE CONCENTRATION (x 10¹⁰ atoms/cm²)

			Detection Limits	Coupon C03 as Received
1.	Aluminum	(Al)	10	233
2.	Antimony	(Sb)	0.1	0.19
3.	Arsenic	(As)	1	<1
4.	Barium	(Ba)	0.3	<0.43
5.	Beryllium	(Be)	5	<6
6.	Bismuth	(Bi)	0.1	<0.11
7.	Boron	(B)	50	<59
8.	Cadmium	(Cd)	0.2	<0.25
9.	Calcium	(Ca)	10	68
10.	Chromium	(Cr)	5	<9
11.	Cobalt	(Co)	1	<8
12.	Copper	(Cu)	2	<7
13.	Gallium	(Ga)	0.2	<0.6
14.	Germanium	(Ge)	0.3	0.85
15.	Iron	(Fe)	5	<7
16.	Lead	(Pb)	0.1	<0.1
17.	Lithium	(Li)	3	<3
18.	Magnesium	(Mg)	10	<10
19.	Manganese	(Mn)	1	<1
20.	Molybdenum	(Mo)	0.3	<0.3
21.	Nickel	(Ni)	2	<2
22.	Potassium	(K)	10	<10
23.	Sodium	(Na)	10	<10
24.	Strontium	(Sr)	0.3	<0.3
25.	Tin	(Sn)	1	<1
26.	Titanium	(Ti)	5	<8
27.	Tungsten	(W)	0.5	<0.5
28.	Vanadium	(V)	1	<1
29.	Zinc	(Zn)	3	<8
30.	Zirconium	(Zr)	0.1	0.96

FIGURE 3 shows the cleanliness level of the ceramic surface and the effectiveness of the present invention using Inductively Coupled Plasma - Mass Spectrometry (ICPMS) method.