

クリーンルーム 塵埃測定報告書

1、目的：クリーンルーム内の塵埃測定を行った

2、実施日時：2010/09/08 PM15:16～PM18:02

3、実施者：平山研介

4、実施仕様：(1)使用器具：

①塵埃測定器(パーティクルカウンター)
リオン製：PARTICLE COUNTER KM-07

②専用プリンター
リオン製：CP-10

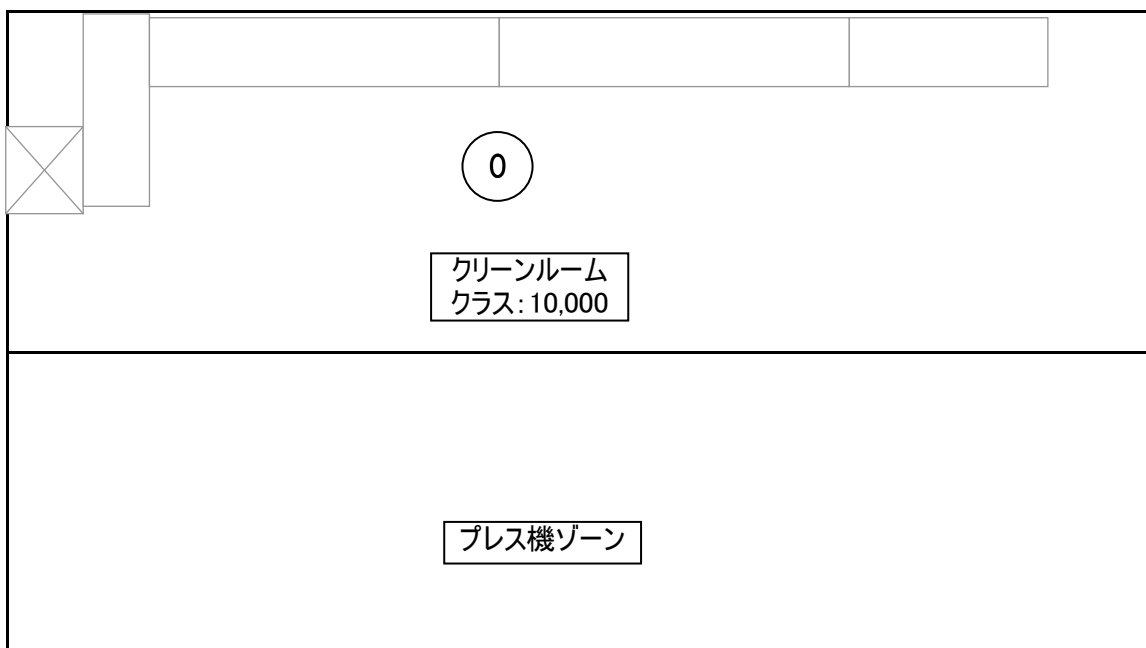
(2)測定仕様

①測定範囲
2種の塵埃数を測定
0.3 μ 以上(参考測定)／0.5 μ 以上(対象測定)

②測定吸引
1分間吸引：2.83L/min(0.1CFM)相当
実数換算の場合は1.0CFMにする為 $\times 10$ となる
(米国連邦規格FED-STD-209準拠)

③測定方法
測定点をそれぞれ3回測定を行い、それぞれの平均値を算出した。

(3)測定点位置図



5、測定結果

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| 考察 | 作業中塵埃値が非常に高くでた、何らかの故障があるところを疑い、HEPAフィルター二次側や部屋の角などをパーティクルカウンターで調査をおこなったが、問題は見つからなかった、その後室内の作業者との会話の中で、離形剤のミストがカウントされているのではないかと憶測がたつたので、⑩にてパーティクルカウンター近くで少量の離形剤の散布をしてもらい測定を行い、離形剤のミストがカウントされる事を確認した、離形剤散布なしで作業人員有プレス機作動中での塵埃測定値は⑥～⑦で確認できる、通常離形剤などの液体ミストは塵埃とは判断しないことから、問題なしレベルであると判断する事ができる。 |
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測定記録紙写し

| No. | 記録紙 | 換算率 | 変換値 |
|---|---|----------------|-----------|
| ① | DATE = 09/08/10 TIME = 15:16:14 PERIOD = 00:01:00 LOCATION NUM. 0 5390 0.5u = 241 | ×10 | 64,727 |
| | DATE = 09/08/10 TIME = 15:17:19 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 4090 0.5u = 165 | | |
| | DATE = 09/08/10 TIME = 15:18:24 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 57904 0.5u = 19012 | | |
| 241+165+19012=19418×10÷3=64727 | | 測定対象塵埃径: 0.5 μ | |
| ① | DATE = 09/08/10 TIME = 15:19:43 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 238530 0.5u = 92533 | ×10 | 1,946.637 |
| | DATE = 09/08/10 TIME = 15:20:48 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 449834 0.5u = 212850 | | |
| | DATE = 09/08/10 TIME = 15:21:53 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 572495 0.5u = 278608 | | |
| 92533+212850+278608=583991×10÷3=1946637 | | 測定対象塵埃径: 0.5 μ | |
| ② | DATE = 09/08/10 TIME = 16:31:56 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 67504 0.5u = 8768 | ×10 | 61,113 |
| | DATE = 09/08/10 TIME = 16:33:01 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 44042 0.5u = 5639 | | |
| | DATE = 09/08/10 TIME = 16:34:06 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 31730 0.5u = 3927 | | |
| 8768+5639+3927=18334×10÷3=61113 | | 測定対象塵埃径: 0.5 μ | |
| ③ | DATE = 09/08/10 TIME = 16:35:22 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 19762 0.5u = 2386 | ×10 | 159,837 |
| | DATE = 09/08/10 TIME = 16:36:27 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 16979 0.5u = 2019 | | |
| | DATE = 09/08/10 TIME = 16:37:32 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 218919 0.5u = 43546 | | |
| 2386+2019+43546=47951×10÷3=159837 | | 測定対象塵埃径: 0.5 μ | |

測定記録紙写し

| No. | 記録紙 | 換算率 | 変換値 |
|-----|--|-----|---------|
| ④ | DATE = 09/08/10 TIME = 16:38:40 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 245847 0.5u = 49566 | ×10 | 361,060 |
| | DATE = 09/08/10 TIME = 16:39:45 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 190092 0.5u = 35946 | | |
| | DATE = 09/08/10 TIME = 16:40:50 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 131763 0.5u = 22806 | | |
| | 49566+35946+22806=108318×10÷3=361060 | | |
| ⑤ | DATE = 09/08/10 TIME = 16:42:02 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 84348 0.5u = 13381 | ×10 | 192,143 |
| | DATE = 09/08/10 TIME = 16:43:07 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 117002 0.5u = 16488 | | |
| | DATE = 09/08/10 TIME = 16:44:12 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 190361 0.5u = 27774 | | |
| | 13381+16488+27774=57643×10÷3=192143 | | |
| ⑥ | DATE = 09/08/10 TIME = 17:04:26 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 961 0.5u = 137 | | 2,787 |
| | DATE = 09/08/10 TIME = 17:05:31 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 3665 0.5u = 260 | | |
| | DATE = 09/08/10 TIME = 17:06:36 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 7513 0.5u = 439 | | |
| | 137+260+439=836×10÷3=2787 | | |
| ⑦ | DATE = 09/08/10 TIME = 17:07:41 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 4695 0.5u = 271 | | 2,033 |
| | DATE = 09/08/10 TIME = 17:08:46 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 2933 0.5u = 204 | | |
| | DATE = 09/08/10 TIME = 17:09:51 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 1870 0.5u = 135 | | |
| | 271+204+135=610×10÷3=2033 | | |

測定記録紙写し

| No. | 記録紙 | 換算率 | 変換値 |
|----------------------------|---|---------------|-------|
| ⑧ | DATE = 09/08/10 TIME = 17:22:55 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 1739 0.5u = 252 | ×10 | 1,943 |
| | DATE = 09/08/10 TIME = 17:24:00 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 1247 0.5u = 186 | | |
| | DATE = 09/08/10 TIME = 17:25:05 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 1329 0.5u = 145 | | |
| 252+186+145=583×10÷3=1943 | | 測定対象塵埃径: 0.5μ | |
| ⑨ | DATE = 09/08/10 TIME = 17:26:34 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 1811 0.5u = 158 | ×10 | 1,133 |
| | DATE = 09/08/10 TIME = 17:27:39 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 1065 0.5u = 111 | | |
| | DATE = 09/08/10 TIME = 17:28:44 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 637 0.5u = 71 | | |
| 158+111+71=340×10÷3=1133 | | 測定対象塵埃径: 0.5μ | |
| ⑩ | DATE = 09/08/10 TIME = 17:40:52 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 15253 0.5u = 586 | | 5,663 |
| | DATE = 09/08/10 TIME = 17:41:57 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 13998 0.5u = 556 | | |
| | DATE = 09/08/10 TIME = 17:43:02 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 14117 0.5u = 557 | | |
| 586+556+557=1699×10÷3=5663 | | 測定対象塵埃径: 0.5μ | |
| ⑪ | DATE = 09/08/10 TIME = 17:44:36 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 1562 0.5u = 94 | | 686 |
| | DATE = 09/08/10 TIME = 17:45:41 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 999 0.5u = 64 | | |
| | DATE = 09/08/10 TIME = 17:46:46 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 854 0.5u = 48 | | |
| 94+64+48=206×10÷3=686 | | 測定対象塵埃径: 0.5μ | |

測定記録紙写し

| No. | 記録紙 | 換算率 | 変換値 |
|---|---|---------------|-------|
| ⑫ | DATE = 09/08/10 TIME = 17:52:35 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 5009 0.5u = 313 | ×10 | 3,043 |
| | DATE = 09/08/10 TIME = 17:53:45 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 3959 0.5u = 220 | | |
| | DATE = 09/08/10 TIME = 17:54:50 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 6453 0.5u = 380 | | |
| 313+220+380=913×10÷3=3043 | | 測定対象塵埃径: 0.5μ | |
| ⑬ | DATE = 09/08/10 TIME = 17:57:07 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 8959 0.5u = 655 | ×10 | 6,210 |
| | DATE = 09/08/10 TIME = 17:58:12 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 8638 0.5u = 591 | | |
| | DATE = 09/08/10 TIME = 17:59:17 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 8884 0.5u = 617 | | |
| 655+591+617=1863×10÷3=6210 | | 測定対象塵埃径: 0.5μ | |
| ⑭ | DATE = 09/08/10 TIME = 18:00:25 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 10370 0.5u = 766 | ×10 | 7,037 |
| | DATE = 09/08/10 TIME = 18:01:30 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 9781 0.5u = 724 | | |
| | DATE = 09/08/10 TIME = 18:02:35 PERIOD = 00:01:00 LOCATION NUM. 0 0.3u = 8571 0.5u = 621 | | |
| 766+724+621=2111×10÷3=7037 | | 測定対象塵埃径: 0.5μ | |
| ①～①室内作業中:入場時最初測定 ②～⑤室内作業中:外気量調整後測定 ⑥～⑦室内作業中:プレス機作動中 ⑧～⑨室内作業終 ⑩ 室内作業終:離形剤散布参考値 ⑪ 室内作業終:離形剤散布後経過値 ⑫ 室内作業終:クリーンルーム入り口(扉開測定) ⑬ 室内作業終:前室空調機外気取入口近く測定値 ⑭ 室内作業終:前室作業台近く測定値 | | | |