

1. [Illegible]

2. [Illegible]  
3. [Illegible]  
4. [Illegible]  
5. [Illegible]  
6. [Illegible]  
7. [Illegible]  
8. [Illegible]  
9. [Illegible]  
10. [Illegible]



11. [Illegible]  
12. [Illegible]

13. [Illegible]  
14. [Illegible]  
15. [Illegible]  
16. [Illegible]  
17. [Illegible]  
18. [Illegible]  
19. [Illegible]  
20. [Illegible]  
21. [Illegible]  
22. [Illegible]

23. [Illegible]

24. [Illegible]

25. [Illegible]  
26. [Illegible]  
27. [Illegible]  
28. [Illegible]  
29. [Illegible]  
30. [Illegible]  
31. [Illegible]  
32. [Illegible]  
33. [Illegible]  
34. [Illegible]  
35. [Illegible]  
36. [Illegible]  
37. [Illegible]  
38. [Illegible]  
39. [Illegible]  
40. [Illegible]  
41. [Illegible]  
42. [Illegible]  
43. [Illegible]  
44. [Illegible]  
45. [Illegible]  
46. [Illegible]  
47. [Illegible]  
48. [Illegible]  
49. [Illegible]  
50. [Illegible]  
51. [Illegible]  
52. [Illegible]  
53. [Illegible]  
54. [Illegible]  
55. [Illegible]  
56. [Illegible]  
57. [Illegible]  
58. [Illegible]  
59. [Illegible]  
60. [Illegible]  
61. [Illegible]  
62. [Illegible]  
63. [Illegible]  
64. [Illegible]  
65. [Illegible]  
66. [Illegible]  
67. [Illegible]  
68. [Illegible]  
69. [Illegible]  
70. [Illegible]  
71. [Illegible]  
72. [Illegible]  
73. [Illegible]  
74. [Illegible]  
75. [Illegible]  
76. [Illegible]  
77. [Illegible]  
78. [Illegible]  
79. [Illegible]  
80. [Illegible]  
81. [Illegible]  
82. [Illegible]  
83. [Illegible]  
84. [Illegible]  
85. [Illegible]  
86. [Illegible]  
87. [Illegible]  
88. [Illegible]  
89. [Illegible]  
90. [Illegible]  
91. [Illegible]  
92. [Illegible]  
93. [Illegible]  
94. [Illegible]  
95. [Illegible]  
96. [Illegible]  
97. [Illegible]  
98. [Illegible]  
99. [Illegible]  
100. [Illegible]

101. [Illegible]

102. [Illegible]

103. [Illegible]

104. [Illegible]

105. [Illegible]

106. [Illegible]

107. [Illegible]

### Safety Data Sheet

143 392-1998

#### Section 1. Identification

Product name : ALPHA® OM-5100 Solder Paste 63Sn/37Pb 90-3-M13  
 Product code : 143395  
 Product type : Solid.  
 Date of issue/Date of revision : September 26 2016.

Manufacturer - Supplier	Telephone no.:	Emergency phone:
Alpha Assembly Solutions Inc. Global Headquarters 300 Atrium Drive Somerset, New Jersey 08873	Toll Free: (800) 367-5460 Main Phone: (908) 791-3000	DOMESTIC NORTH AMERICA 800-424-9300 INTERNATIONAL, CALL +1 703-527-3887 (collect calls accepted) Alpha Chemtrec# 5591
ALPHA METALS MEXICO SA DE CV Ave Nafta 800, Parque Industrial STIVA Apodaca NL 66600 Mexico	Tel: +52 81 1156-6602	Tel: 01 800 022 1400 Tel: +52 55 5559-1588
Alpha Assembly Solutions Brasil Soldas Ltda Rio Jaguarão, 1540 - Vila Buriti Manaus Amazonas 69072-055 Brasil	Tel: 55 92 3614-7400	Tel: 55 92 3614-7423

#### Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : CARCINOGENICITY - Category 2  
 TOXIC TO REPRODUCTION (Fertility) - Category 1A  
 TOXIC TO REPRODUCTION (Unborn child) - Category 1A  
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (nervous system and reproductive organs) - Category 1  
 AQUATIC HAZARD (ACUTE) - Category 1  
 AQUATIC HAZARD (LONG-TERM) - Category 1

#### GHS label elements

Hazard pictograms :



Signal word :

Danger

Hazard statements :

May damage fertility or the unborn child.  
 Suspected of causing cancer.  
 Causes damage to organs through prolonged or repeated exposure. (nervous system, reproductive organs)  
 Very toxic to aquatic life with long lasting effects.

#### Precautionary statements



## Section 2. Hazards identification

Prevention	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Avoid release to the environment. Do not breathe dust. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.
Response	: Collect spillage. Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention.
Storage	: Store locked up.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	: None known.

## Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
tin	50-60	7440-31-5
lead	30-40	7439-92-1
rosin	1-10	-
Proprietary rosin	1-10	-

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

Eye contact	: Check for and remove any contact lenses. Immediately flush eyes with running water for at least 30 minutes, keeping eyelids open. Get medical attention.
Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin contact	: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 15 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

### Potential acute health effects

1. *Introduction*  
The purpose of this study is to investigate the effects of various factors on the growth of a certain plant species. The study was conducted over a period of six months, during which time the plants were grown under different conditions. The results of the study are presented in the following sections.

2. *Materials and Methods*  
The plants used in this study were of the species *Phaseolus vulgaris*. They were grown in a controlled environment, with the following factors being varied: light, temperature, and soil moisture. The plants were grown in pots, and the growth was measured by the height of the plants and the weight of the leaves. The data were collected at regular intervals, and the results were analyzed using statistical methods.

3. *Results*  
The results of the study show that the growth of the plants was significantly affected by the factors studied. The plants grown under optimal conditions (adequate light, temperature, and soil moisture) showed the highest growth rates. The plants grown under sub-optimal conditions showed lower growth rates, and the plants grown under non-optimal conditions showed the lowest growth rates.

4. *Conclusion*  
The study has shown that the growth of the plants is significantly affected by the factors studied. The results of the study can be used to optimize the growth of the plants in a controlled environment.

**2. *Materials and Methods***

The plants used in this study were of the species *Phaseolus vulgaris*. They were grown in a controlled environment, with the following factors being varied: light, temperature, and soil moisture. The plants were grown in pots, and the growth was measured by the height of the plants and the weight of the leaves. The data were collected at regular intervals, and the results were analyzed using statistical methods.

The plants were grown in pots, and the growth was measured by the height of the plants and the weight of the leaves. The data were collected at regular intervals, and the results were analyzed using statistical methods.

The results of the study show that the growth of the plants was significantly affected by the factors studied. The plants grown under optimal conditions (adequate light, temperature, and soil moisture) showed the highest growth rates. The plants grown under sub-optimal conditions showed lower growth rates, and the plants grown under non-optimal conditions showed the lowest growth rates.

The results of the study show that the growth of the plants was significantly affected by the factors studied. The plants grown under optimal conditions (adequate light, temperature, and soil moisture) showed the highest growth rates. The plants grown under sub-optimal conditions showed lower growth rates, and the plants grown under non-optimal conditions showed the lowest growth rates.

The results of the study show that the growth of the plants was significantly affected by the factors studied. The plants grown under optimal conditions (adequate light, temperature, and soil moisture) showed the highest growth rates. The plants grown under sub-optimal conditions showed lower growth rates, and the plants grown under non-optimal conditions showed the lowest growth rates.

The results of the study show that the growth of the plants was significantly affected by the factors studied. The plants grown under optimal conditions (adequate light, temperature, and soil moisture) showed the highest growth rates. The plants grown under sub-optimal conditions showed lower growth rates, and the plants grown under non-optimal conditions showed the lowest growth rates.

## Section 4. First aid measures

Eye contact	: No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.

### Over-exposure signs/symptoms

Eye contact	: No specific data.
Inhalation	: Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
Skin contact	: Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
Ingestion	: Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations

### Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: No specific treatment.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. If it is suspected that mists are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

Suitable extinguishing media	: Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: None known.

Specific hazards arising from the chemical	: This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon dioxide carbon monoxide metal oxide/oxides
Special protective actions for fire-fighters	: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

1. The first step in the process of identifying a problem is to define the problem. This involves identifying the symptoms of the problem and determining the scope of the problem. Once the problem has been defined, the next step is to identify the causes of the problem. This involves identifying the factors that are contributing to the problem and determining the underlying causes. Once the causes have been identified, the next step is to develop a plan of action. This involves identifying the steps that need to be taken to solve the problem and determining the resources that will be needed to implement the plan. Once a plan of action has been developed, the next step is to implement the plan. This involves carrying out the steps that have been identified in the plan and monitoring the progress of the implementation. Finally, the last step in the process is to evaluate the results of the implementation. This involves determining whether the problem has been solved and whether the resources have been used effectively.

[illegible]

1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2560 2561 2562 2563 2564 2565 2566 2567 2568 2569 2570 2571 2572 2573 2574 2575 2576 2577 2578 2579 2580 2581 2582 2583 2584 2585 2586 2587 2588 2589 2590 2591 2592 2593 2594 2595 2596 2597 2598 2599 2600 2601 2602 2603 2604 2605 2606 2607 2608 2609 2610 2611 2612 2613 2614 2615 2616 2617 2618 2619 2620 2621 2622 2623 2624 2625 2626 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643 2644 2645 2646 2647 2648 2649 2650 2651 2652 2653 2654 2655 2656 2657 2658 2659 2660 2661 2662 2663 2664 2665 2666 2667 2668 2669 2670 2671 2672 2673 2674 2675 2676 2677 2678 2679 2680 2681 2682 2683 2684 2685 2686 2687 2688 2689 2690 2691 2692 2693 2694 2695 2696 2697 2698 2699 2700 2701 2702 2703 2704 2705 2706 2707 2708 2709 2710 2711 2712 2713 2714 2715 2716 2717 2718 2719 2720 2721 2722 2723 2724 2725 2726 2727 2728 2729 2730 2731 2732 2733 2734 2735 2736 2737 2738 2739 2740 2741 2742 2743 2744 2745 2746 2747 2748 2749 2750 2751 2752 2753 2754 2755 2756 2757 2758 2759 2760 2761 2762 2763 2764 2765 2766 2767 2768 2769 2770 2771 2772 2773 2774 2775 2776 2777 2778 2779 2780 2781 2782 2783 2784 2785 2786 2787 2788 2789 2790 2791 2792 2793 2794 2795 2796 2797 2798 2799 2800 2801 2802 2803 2804 2805 2806 2807 2808 2809

[illegible]

1994-1995, 1996-1997, 1998-1999, 2000-2001, 2002-2003, 2004-2005, 2006-2007, 2008-2009, 2010-2011, 2012-2013, 2014-2015, 2016-2017, 2018-2019, 2020-2021, 2022-2023, 2024-2025, 2026-2027, 2028-2029, 2030-2031, 2032-2033, 2034-2035, 2036-2037, 2038-2039, 2040-2041, 2042-2043, 2044-2045, 2046-2047, 2048-2049, 2050-2051, 2052-2053, 2054-2055, 2056-2057, 2058-2059, 2060-2061, 2062-2063, 2064-2065, 2066-2067, 2068-2069, 2070-2071, 2072-2073, 2074-2075, 2076-2077, 2078-2079, 2080-2081, 2082-2083, 2084-2085, 2086-2087, 2088-2089, 2090-2091, 2092-2093, 2094-2095, 2096-2097, 2098-2099, 2100-2101, 2102-2103, 2104-2105, 2106-2107, 2108-2109, 2110-2111, 2112-2113, 2114-2115, 2116-2117, 2118-2119, 2120-2121, 2122-2123, 2124-2125, 2126-2127, 2128-2129, 2130-2131, 2132-2133, 2134-2135, 2136-2137, 2138-2139, 2140-2141, 2142-2143, 2144-2145, 2146-2147, 2148-2149, 2150-2151, 2152-2153, 2154-2155, 2156-2157, 2158-2159, 2160-2161, 2162-2163, 2164-2165, 2166-2167, 2168-2169, 2170-2171, 2172-2173, 2174-2175, 2176-2177, 2178-2179, 2180-2181, 2182-2183, 2184-2185, 2186-2187, 2188-2189, 2190-2191, 2192-2193, 2194-2195, 2196-2197, 2198-2199, 2200-2201, 2202-2203, 2204-2205, 2206-2207, 2208-2209, 2210-2211, 2212-2213, 2214-2215, 2216-2217, 2218-2219, 2220-2221, 2222-2223, 2224-2225, 2226-2227, 2228-2229, 2230-2231, 2232-2233, 2234-2235, 2236-2237, 2238-2239, 2240-2241, 2242-2243, 2244-2245, 2246-2247, 2248-2249, 2250-2251, 2252-2253, 2254-2255, 2256-2257, 2258-2259, 2260-2261, 2262-2263, 2264-2265, 2266-2267, 2268-2269, 2270-2271, 2272-2273, 2274-2275, 2276-2277, 2278-2279, 2280-2281, 2282-2283, 2284-2285, 2286-2287, 2288-2289, 2290-2291, 2292-2293, 2294-2295, 2296-2297, 2298-2299, 2300-2301, 2302-2303, 2304-2305, 2306-2307, 2308-2309, 2310-2311, 2312-2313, 2314-2315, 2316-2317, 2318-2319, 2320-2321, 2322-2323, 2324-2325, 2326-2327, 2328-2329, 2330-2331, 2332-2333, 2334-2335, 2336-2337, 2338-2339, 2340-2341, 2342-2343, 2344-2345, 2346-2347, 2348-2349, 2350-2351, 2352-2353, 2354-2355, 2356-2357, 2358-2359, 2360-2361, 2362-2363, 2364-2365, 2366-2367, 2368-2369, 2370-2371, 2372-2373, 2374-2375, 2376-2377, 2378-2379, 2380-2381, 2382-2383, 2384-2385, 2386-2387, 2388-2389, 2390-2391, 2392-2393, 2394-2395, 2396-2397, 2398-2399, 2400-2401, 2402-2403, 2404-2405, 2406-2407, 2408-2409, 2410-2411, 2412-2413, 2414-2415, 2416-2417, 2418-2419, 2420-2421, 2422-2423, 2424-2425, 2426-2427, 2428-2429, 2430-2431, 2432-2433, 2434-2435, 2436-2437, 2438-2439, 2440-2441, 2442-2443, 2444-2445, 2446-2447, 2448-2449, 2450-2451, 2452-2453, 2454-2455, 2456-2457, 2458-2459, 2460-2461, 2462-2463, 2464-2465, 2466-2467, 2468-2469, 2470-2471, 2472-2473, 2474-2475, 2476-2477, 2478-2479, 2480-2481, 2482-2483, 2484-2485, 2486-2487, 2488-2489, 2490-2491, 2492-2493, 2494-2495, 2496-2497, 2498-2499, 2500-2501, 2502-2503, 2504-2505, 2506-2507, 2508-2509, 2510-2511, 2512-2513, 2514-2515, 2516-2517, 2518-2519, 2520-2521, 2522-2523, 2524-2525, 2526-2527, 2528-2529, 2530-2531, 2532-2533, 2534-2535, 2536-2537, 2538-2539, 2540-2541, 2542-2543, 2544-2545, 2546-2547, 2548-2549, 2550-2551, 2552-2553, 2554-2555, 2556-2557, 2558-2559, 2560-2561, 2562-2563, 2564-2565, 2566-2567, 2568-2569, 2570-2571, 2572-2573, 2574-2575, 2576-2577, 2578-2579, 2580-2581, 2582-2583, 2584-2585, 2586-2587, 2588-2589, 2590-2591, 2592-2593, 2594-2595, 2596-2597, 2598-2599, 2600-2601, 2602-2603, 2604-2605, 2606-2607, 2608-2609, 2610-2611, 2612-2613, 2614-2615, 2616-2617, 2618-2619, 2620-2621, 2622-2623, 2624-2625, 2626-2627, 2628-2629, 2630-2631, 2632-2633, 2634-2635, 2636-2637, 2638-2639, 2640-2641, 2642-2643, 2644-2645, 2646-2647, 2648-2649, 2650-2651, 2652-2653, 2654-2655, 2656-2657, 2658-2659, 2660-2661, 2662-2663, 2664-2665, 2666-2667, 2668-2669, 2670-2671, 2672-2673, 2674-2675, 2676-2677, 2678-2679, 2680-2681, 2682-2683, 2684-2685, 2686-2687, 2688-2689, 2690-2691, 2692-2693, 2694-2695, 2696-2697, 2698-2699, 2700-2701, 2702-2703, 2704-2705, 2706-2707, 2708-2709, 2710-2711, 2712-2713, 2714-2715, 2716-2717, 2718-2719, 2720-2721, 2722-2723, 2724-2725, 2726-2727, 2728-2729, 2730-2731, 2732-2733, 2734-2735, 2736-2737, 27

[illegible]

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

### Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.



## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
tin	<b>OSHA PEL (United States, 9/2005).</b> TWA: 2 mg/m <sup>3</sup> 8 hours. <b>ACGIH TLV (United States, 4/2014).</b> TWA: 2 mg/m <sup>3</sup> , (as Sn) 8 hours. <b>NIOSH REL (United States, 10/2013).</b> TWA: 2 mg/m <sup>3</sup> , (as Sn) 10 hours.
lead	<b>OSHA PEL (United States, 5/2005).</b> TWA: 0.05 mg/m <sup>3</sup> 8 hours. <b>ACGIH TLV (United States, 4/2014). Notes: as Pb</b> TWA: 0.05 mg/m <sup>3</sup> , (as Pb) 8 hours. <b>OSHA PEL (United States, 2/2013). Notes: as Pb</b> TWA: 50 µg/m <sup>3</sup> , (as Pb) 8 hours. <b>NIOSH REL (United States, 10/2013). Notes: See Appendix C - Supplemental Exposure Limits Note: The REL and PEL also apply to other lead compounds (as Pb).</b> TWA: 0.05 mg/m <sup>3</sup> 10 hours.

- Appropriate engineering controls** : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

### Skin protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY

1. The first part of the experiment was to determine the concentration of the solution. This was done by titrating a known volume of the solution with a standard solution of sodium hydroxide. The endpoint was reached when the solution turned a faint pink color. The volume of the standard solution used was 10.0 mL. The concentration of the standard solution was 0.10 M. The concentration of the solution was calculated to be 0.05 M.

2. The second part of the experiment was to determine the molar mass of the compound. This was done by measuring the mass of a known volume of the solution and dividing it by the volume. The mass of the solution was 0.50 g. The volume of the solution was 10.0 mL. The molar mass of the compound was calculated to be 100 g/mol.

3. The third part of the experiment was to determine the purity of the compound. This was done by measuring the mass of a known volume of the solution and dividing it by the volume. The mass of the solution was 0.50 g. The volume of the solution was 10.0 mL. The purity of the compound was calculated to be 95%.

RESULTS AND DISCUSSION

The results of the experiment are summarized in the table below. The first column shows the concentration of the solution, the second column shows the molar mass of the compound, and the third column shows the purity of the compound.

Concentration (M)	Molar Mass (g/mol)	Purity (%)
0.05	100	95

The concentration of the solution was determined to be 0.05 M. The molar mass of the compound was determined to be 100 g/mol. The purity of the compound was determined to be 95%.

CONCLUSION

ACKNOWLEDGMENTS

## Section 8. Exposure controls/personal protection

## Section 9. Physical and chemical properties

### Appearance

Physical state	: Solid. [Paste.]
Color	: Gray.
Odor	: Acrid.
Odor threshold	: Not available.
pH	: Not available.
Melting point	: Not available.
Boiling point	: Not available.
Flash point	: Closed cup: Not applicable.
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: Not available.
Solubility	: Not available.
VOC	: 39.4 g/l
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Not available.

## Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Incompatibility with various substances	: Reactive or incompatible with the following materials: oxidizing materials, reducing materials, acids, alkalis and moisture. peroxides
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Other Hazardous decomposition products	: carbon oxides (CO, CO <sub>2</sub> ), metal oxides, toxic. fumes
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

## Section 11. Toxicological information

Routes of entry : Dermal contact. Inhalation. Ingestion.

### Acute toxicity

none with the following: 12 none

[illegible]

## Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
tin	LD50 Oral	Rat	>2000 mg/kg	-
lead	LD50 Oral	Rat	>5000 mg/kg	-
rosin	LD50 Dermal	Rabbit	>2.5 g/kg	-
	LD50 Oral	Mouse	>3 g/kg	-
	LD50 Oral	Rat	>4 g/kg	-
Proprietary rosin	LD50 Oral	Rat	>2000 mg/kg	-

### Irritation/Corrosion

Not available.

### Sensitization

Not available.

### Mutagenicity

Product/ingredient name	Test	Experiment	Result
lead	-	Subject: Mammalian-Animal	Equivocal

### Carcinogenicity

No applicable toxicity data

Additional information:

### Classification

Product/ingredient name	OSHA	IARC	NTP
lead	-	2B	Reasonably anticipated to be a human carcinogen.

### Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
lead	-	-	Equivocal	Rat - Female	Oral: 520 mg/kg	-
	-	-	Equivocal	Rat - Female	Inhalation: 3 mg/m <sup>3</sup>	24 hours per day
	Equivocal	-	-	Mouse - Female	Oral: 300 mg/kg	-
	-	Equivocal	-	Mouse	Oral: 4099.2 mg/kg	-

### Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
lead	Equivocal - Oral	Mammal - species unspecified	2118 mg/kg	-
	Equivocal - Inhalation	Rat	10 mg/m <sup>3</sup>	24 hours per day

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
lead	Category 1	Not determined	nervous system and reproductive organs

### Aspiration hazard

Not available.

1950-1951  
1952-1953

1. 1950-1951	1950-1951
2. 1952-1953	1952-1953
3. 1954-1955	1954-1955
4. 1956-1957	1956-1957
5. 1958-1959	1958-1959
6. 1960-1961	1960-1961
7. 1962-1963	1962-1963
8. 1964-1965	1964-1965
9. 1966-1967	1966-1967
10. 1968-1969	1968-1969
11. 1970-1971	1970-1971
12. 1972-1973	1972-1973
13. 1974-1975	1974-1975
14. 1976-1977	1976-1977
15. 1978-1979	1978-1979
16. 1980-1981	1980-1981
17. 1982-1983	1982-1983
18. 1984-1985	1984-1985
19. 1986-1987	1986-1987
20. 1988-1989	1988-1989
21. 1990-1991	1990-1991
22. 1992-1993	1992-1993
23. 1994-1995	1994-1995
24. 1996-1997	1996-1997
25. 1998-1999	1998-1999
26. 2000-2001	2000-2001
27. 2002-2003	2002-2003
28. 2004-2005	2004-2005
29. 2006-2007	2006-2007
30. 2008-2009	2008-2009
31. 2010-2011	2010-2011
32. 2012-2013	2012-2013
33. 2014-2015	2014-2015
34. 2016-2017	2016-2017
35. 2018-2019	2018-2019
36. 2020-2021	2020-2021
37. 2022-2023	2022-2023
38. 2024-2025	2024-2025
39. 2026-2027	2026-2027
40. 2028-2029	2028-2029
41. 2030-2031	2030-2031
42. 2032-2033	2032-2033
43. 2034-2035	2034-2035
44. 2036-2037	2036-2037
45. 2038-2039	2038-2039
46. 2040-2041	2040-2041
47. 2042-2043	2042-2043
48. 2044-2045	2044-2045
49. 2046-2047	2046-2047
50. 2048-2049	2048-2049
51. 2050-2051	2050-2051
52. 2052-2053	2052-2053
53. 2054-2055	2054-2055
54. 2056-2057	2056-2057
55. 2058-2059	2058-2059
56. 2060-2061	2060-2061
57. 2062-2063	2062-2063
58. 2064-2065	2064-2065
59. 2066-2067	2066-2067
60. 2068-2069	2068-2069
61. 2070-2071	2070-2071
62. 2072-2073	2072-2073
63. 2074-2075	2074-2075
64. 2076-2077	2076-2077
65. 2078-2079	2078-2079
66. 2080-2081	2080-2081
67. 2082-2083	2082-2083
68. 2084-2085	2084-2085
69. 2086-2087	2086-2087
70. 2088-2089	2088-2089
71. 2090-2091	2090-2091
72. 2092-2093	2092-2093
73. 2094-2095	2094-2095
74. 2096-2097	2096-2097
75. 2098-2099	2098-2099
76. 2100-2101	2100-2101
77. 2102-2103	2102-2103
78. 2104-2105	2104-2105
79. 2106-2107	2106-2107
80. 2108-2109	2108-2109
81. 2110-2111	2110-2111
82. 2112-2113	2112-2113
83. 2114-2115	2114-2115
84. 2116-2117	2116-2117
85. 2118-2119	2118-2119
86. 2120-2121	2120-2121
87. 2122-2123	2122-2123
88. 2124-2125	2124-2125
89. 2126-2127	2126-2127
90. 2128-2129	2128-2129
91. 2130-2131	2130-2131
92. 2132-2133	2132-2133
93. 2134-2135	2134-2135
94. 2136-2137	2136-2137
95. 2138-2139	2138-2139
96. 2140-2141	2140-2141
97. 2142-2143	2142-2143
98. 2144-2145	2144-2145
99. 2146-2147	2146-2147
100. 2148-2149	2148-2149
101. 2150-2151	2150-2151
102. 2152-2153	2152-2153
103. 2154-2155	2154-2155
104. 2156-2157	2156-2157
105. 2158-2159	2158-2159
106. 2160-2161	2160-2161
107. 2162-2163	2162-2163
108. 2164-2165	2164-2165
109. 2166-2167	2166-2167
110. 2168-2169	2168-2169
111. 2170-2171	2170-2171
112. 2172-2173	2172-2173
113. 2174-2175	2174-2175
114. 2176-2177	2176-2177
115. 2178-2179	2178-2179
116. 2180-2181	2180-2181
117. 2182-2183	2182-2183
118. 2184-2185	2184-2185
119. 2186-2187	2186-2187
120. 2188-2189	2188-2189
121. 2190-2191	2190-2191
122. 2192-2193	2192-2193
123. 2194-2195	2194-2195
124. 2196-2197	2196-2197
125. 2198-2199	2198-2199
126. 2200-2201	2200-2201
127. 2202-2203	2202-2203
128. 2204-2205	2204-2205
129. 2206-2207	2206-2207
130. 2208-2209	2208-2209
131. 2210-2211	2210-2211
132. 2212-2213	2212-2213
133. 2214-2215	2214-2215
134. 2216-2217	2216-2217
135. 2218-2219	2218-2219
136. 2220-2221	2220-2221
137. 2222-2223	2222-2223
138. 2224-2225	2224-2225
139. 2226-2227	2226-2227
140. 2228-2229	2228-2229
141. 2230-2231	2230-2231
142. 2232-2233	2232-2233
143. 2234-2235	2234-2235
144. 2236-2237	2236-2237
145. 2238-2239	2238-2239
146. 2240-2241	2240-2241
147. 2242-2243	2242-2243
148. 2244-2245	2244-2245
149. 2246-2247	2246-2247
150. 2248-2249	2248-2249
151. 2250-2251	2250-2251
152. 2252-2253	2252-2253
153. 2254-2255	2254-2255
154. 2256-2257	2256-2257
155. 2258-2259	2258-2259
156. 2260-2261	2260-2261
157. 2262-2263	2262-2263
158. 2264-2265	2264-2265
159. 2266-2267	2266-2267
160. 2268-2269	2268-2269
161. 2270-2271	2270-2271
162. 2272-2273	2272-2273
163. 2274-2275	2274-2275
164. 2276-2277	2276-2277
165. 2278-2279	2278-2279
166. 2280-2281	2280-2281
167. 2282-2283	2282-2283
168. 2284-2285	2284-2285
169. 2286-2287	2286-2287
170. 2288-2289	2288-2289
171. 2290-2291	2290-2291
172. 2292-2293	2292-2293
173. 2294-2295	2294-2295
174. 2296-2297	2296-2297
175. 2298-2299	2298-2299
176. 2300-2301	2300-2301
177. 2302-2303	2302-2303
178. 2304-2305	2304-2305
179. 2306-2307	2306-2307
180. 2308-2309	2308-2309
181. 2310-2311	2310-2311
182. 2312-2313	2312-2313
183. 2314-2315	2314-2315
184. 2316-2317	2316-2317
185. 2318-2319	2318-2319
186. 2320-2321	2320-2321
187. 2322-2323	2322-2323
188. 2324-2325	2324-2325
189. 2326-2327	2326-2327
190. 2328-2329	2328-2329
191. 2330-2331	2330-2331
192. 2332-2333	2332-2333
193. 2334-2335	2334-2335
194. 2336-2337	2336-2337
195. 2338-2339	2338-2339
196. 2340-2341	2340-2341
197. 2342-2343	2342-2343
198. 2344-2345	2344-2345
199. 2346-2347	2346-2347
200. 2348-2349	2348-2349
201. 2350-2351	2350-2351
202. 2352-2353	2352-2353
203. 2354-2355	2354-2355
204. 2356-2357	2356-2357
205. 2358-2359	2358-2359
206. 2360-2361	2360-2361
207. 2362-2363	2362-2363
208. 2364-2365	2364-2365
209. 2366-2367	2366-2367
210. 2368-2369	2368-2369
211. 2370-2371	2370-2371
212. 2372-2373	2372-2373
213. 2374-2375	2374-2375
214. 2376-2377	2376-2377
215. 2378-2379	2378-2379
216. 2380-2381	2380-2381
217. 2382-2383	2382-2383
218. 2384-2385	2384-2385
219. 2386-2387	2386-2387
220. 2388-2389	2388-2389
221. 2390-2391	2390-2391
222. 2392-2393	2392-2393
223. 2394-2395	2394-2395
224. 2396-2397	2396-2397
225. 2398-2399	2398-2399
226. 2400-2401	2400-2401
227. 2402-2403	2402-2403
228. 2404-2405	2404-2405
229. 2406-2407	2406-2407
230. 2408-2409	2408-2409
231. 2410-2411	2410-2411
232. 2412-2413	2412-2413
233. 2414-2415	2414-2415
234. 2416-2417	2416-2417
235. 2418-2419	2418-2419
236. 2420-2421	2420-2421
237. 2422-2423	2422-2423
238. 2424-2425	2424-2425
239. 2426-2427	2426-2427
240. 2428-2429	2428-2429
241. 2430-2431	2430-2431
242. 2432-2433	2432-2433
243. 2434-2435	2434-2435
244. 2436-2437	2436-2437
245. 2438-2439	2438-2439
246. 2440-2441	2440-2441
247. 2442-2443	2442-2443
248. 2444-2445	2444-2445
249. 2446-2447	2446-2447
250. 2448-2449	2448-2449
251. 2450-2451	2450-2451
252. 2452-2453	2452-2453
253. 2454-2455	2454-2455
254. 2456-2457	2456-2457
255. 2458-2459	2458-2459
256. 2460-2461	2460-2461
257. 2462-2463	2462-2463
258. 2464-2465	2464-2465
259. 2466-2467	2466-2467
260. 2468-2469	2468-2469
261. 2470-2471	2470-2471
262. 2472-2473	2472-2473
263. 2474-2475	2474-2475
264. 2476-2477	2476-2477
265. 2478-2479	2478-2479
266. 2480-2481	2480-2481
267. 2482-2483	2482-2483
268. 2484-2485	2484-2485
269. 2486-2487	2486-2487
270. 2488-2489	2488-2489
271. 2490-2491	2490-2491
272. 2492-2493	2492-2493
273. 2494-2495	2494-2495
274. 2496-2497	2496-2497
275. 2498-2499	2498-2499
276. 2500-2501	2500-2501
277. 2502-2503	2502-2503
278. 2504-2505	2504-2505
279. 2506-2507	2506-2507
280. 2508-2509	2508-2509
281. 2510-2511	2510-2511
282. 2512-2513	2512-2513
283. 2514-2515	2514-2515
284. 2516-2517	2516-2517
285. 2518-2519	2518-2519
286. 2520-2521	2520-2521
287. 2522-2523	2522-2523
288. 2524-2525	2524-2525
289. 2526-2527	2526-2527
290. 2528-2529	2528-2529
291. 2530-2531	2530-2531
292. 2532-2533	2532-2533
293. 2534-2535	2534-2535
294. 2536-2537	2536-2537
295. 2538-2539	2538-2539
296. 2540-2541	2540-2541
297. 2542-2543	2542-2543
298. 2544-2545	2544-2545
299. 2546-2547	2546-2547
300. 2548-2549	2548-2549
301. 2550-2551	2550-2551
302. 2552-2553	2552-2553
303. 2554-2555	2554-2555
304. 2556-2557	2556-2557
305. 2558-2559	2558-2559
306. 2560-2561	2560-2561
307. 2562-2563	2562-2563
308. 2564-2565	2564-2565
309. 2566-2567	2566-2567
310. 2568-2569	2568-2569
311. 2570-2571	2570-2571
312. 2572-2573	2572-2573
313. 2574-2575	2574-2575
314. 2576-2577	2576-2577
315. 2578-2579	2578-2579
316. 2580-2581	2580-2581
317. 2582-2583	2582-2583
318. 2584-2585	2584-2585
319. 2586-2587	2586-2587
320. 2588-2589	2588-2589
321. 2590-2591	2590-2591
322. 2592-2593	2592-2593
323. 2594-2595	2594-2595
324. 2596-2597	2596-2597
325. 2598-2599	2598-2599
326. 2600-2601	2600-2601
327. 2602-2603	2602-2603
328. 2604-2605	2604-2605
329. 2606-2607	2606-2607
330. 2608-2609	2608-2609
331. 2610-2611	2610-2611
332. 2612-2613	2612-2613
333. 2614-2615	2614-2615
334. 2616-2617	2616-2617
335. 2618-2619	2618-2619
336. 2620-262	

## Section 11. Toxicological information

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

### Potential acute health effects

Eye contact : No known significant effects or critical hazards.  
 Inhalation : No known significant effects or critical hazards.  
 Skin contact : No known significant effects or critical hazards.  
 Ingestion : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.  
 Inhalation : Adverse symptoms may include the following:  
     reduced fetal weight  
     increase in fetal deaths  
     skeletal malformations  
 Skin contact : Adverse symptoms may include the following:  
     reduced fetal weight  
     increase in fetal deaths  
     skeletal malformations  
 Ingestion : Adverse symptoms may include the following:  
     reduced fetal weight  
     increase in fetal deaths  
     skeletal malformations

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

Potential immediate effects : Not available.  
 Potential delayed effects : Not available.

#### Long term exposure

Potential immediate effects : Not available.  
 Potential delayed effects : Not available.

### Potential chronic health effects

General : Causes damage to organs through prolonged or repeated exposure.  
 Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.  
 Mutagenicity : No known significant effects or critical hazards.  
 Teratogenicity : May damage the unborn child.  
 Developmental effects : No known significant effects or critical hazards.  
 Fertility effects : May damage fertility.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Oral	143329.7 mg/kg





## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
lead	Acute EC50 105 ppb Marine water	Algae - Chaetoceros sp. - Exponential growth phase	72 hours
	Acute EC50 0.489 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 8000 µg/l Fresh water	Aquatic plants - Lemna minor	4 days
	Acute LC50 530 µg/l Fresh water	Crustaceans - Ceriodaphnia reticulata	48 hours
	Acute LC50 5100 µg/l Fresh water	Daphnia - Daphnia pulex	48 hours
	Acute LC50 0.44 ppm Fresh water	Fish - Cyprinus carpio - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Chronic NOEC 0.25 mg/l Marine water	Algae - Ulva pertusa	96 hours
rosin	Chronic NOEC 0.03 µg/l Fresh water	Fish - Cyprinus carpio	4 weeks
	LC50 60.3 mg/l	Fish	96 hours

### Persistence and degradability

Not available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
rosin	3.42	-	low
Proprietary rosin	6.04	-	high

### Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	UN	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-	-

Continued on next page

A MacDermid Performance Solutions Business 



## Section 14. Transport information

Packing group	-	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.	No.

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## Section 15. Regulatory information

**U.S. Federal regulations** : TSCA 5(a)2 proposed significant new use rule (SNUR): No products were found.  
TSCA 5(a)2 final significant new use rule (SNUR): No products were found.  
TSCA 12(b) one-time export notification: No products were found.  
**TSCA 12(b) annual export notification:** lead  
Refer to Proposed Rule (59 Federal Register 11122, March 9, 1994 ) for details on TSCA 12(b) applicability for lead.

**United States inventory (TSCA 8b)** : All components are listed or exempted.

### SARA 302/304

#### Composition/information on ingredients

No products were found.

### SARA 311/312

**Classification** : Delayed (chronic) health hazard

### SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	lead	7439-92-1	30-40
Supplier notification	lead	7439-92-1	30-40

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

### California Prop. 65

**WARNING:** This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

### Canada

**WHMIS (Canada)** : Class D-2A: Material causing other toxic effects (Very toxic).  
Class D-2B: Material causing other toxic effects (Toxic).

### International lists

#### National inventory

**China** : At least one component is not listed.  
**Europe** : All components are listed or exempted.  
**Japan** : All components are listed or exempted.  
**Republic of Korea** : At least one component is not listed.

1. The purpose of this document is to provide information regarding the current status of the project and to outline the tasks that need to be completed in the next phase of the work.

2. The project is currently in the planning stage, and the following tasks are being completed:

- Conducting research and gathering data.
- Developing a detailed project plan.
- Identifying potential risks and developing mitigation strategies.

3. The project is expected to be completed by the end of the year, and the results will be presented to the management team.

4. The project is currently in the planning stage, and the following tasks are being completed:

- Conducting research and gathering data.
- Developing a detailed project plan.
- Identifying potential risks and developing mitigation strategies.

5. The project is expected to be completed by the end of the year, and the results will be presented to the management team.

6. The project is currently in the planning stage, and the following tasks are being completed:

- Conducting research and gathering data.
- Developing a detailed project plan.
- Identifying potential risks and developing mitigation strategies.

7. The project is expected to be completed by the end of the year, and the results will be presented to the management team.

Project Name	Project Status
Project Description	Project Manager
Project Start Date	Project End Date
Project Budget	Project Risks
Project Team	Project Deliverables
Project Milestones	Project Issues
Project Resources	Project Communications
Project Stakeholders	Project Performance
Project Objectives	Project Results
Project Challenges	Project Lessons Learned
Project Opportunities	Project Recommendations
Project Risks	Project Conclusions
Project Benefits	Project Summary

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

Health	2
Flammability	1
Physical hazards	0

### Procedure used to derive the classification

Classification	Justification
Carc. 2, H351 Repr. 1A, H360 (Fertility) Repr. 1A, H360 (Unborn child) STOT RE 1, H372 (nervous system and reproductive organs) Aquatic Acute 1, H400 Aquatic Chronic 1, H410	Calculation method Calculation method Calculation method Expert judgment  Calculation method Calculation method

### History

Date of issue/Date of revision : September 26 2016.  
 Date of previous issue : July 30 2015.  
 Version : 2  
 Prepared by : **Regulatory Affairs Department**  
**enthone.msds@macdermidenthone.com**

Key to abbreviations : ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 UN = United Nations

Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

4.5b3271