



**STATE OF CONNECTICUT  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**



June 16, 2004

Thom S. Ozycz  
Advanced Semiconductor Cleaning/Coating Technology, LLC  
30 Ozick Drive  
Durham, CT 06422

Dear Mr. Ozycz:

This is in response to your letter of May 3, 2004 requesting confirmation of the regulatory status of your proposed operation to remove small amounts of residual solder from the carbon "boats" used by IBM in the manufacture of computer chips.

**The Carbon Boats Are Not Subject to the Hazardous Waste Requirements**

First, we acknowledge receipt of the TCLP test results and other supporting data submitted by you and IBM Canada confirming that the boats do not exceed any of the concentration limits for hazardous waste in 40 CFR 261.24 for lead or any other of the eight toxic metals listed in this section of the federal hazardous waste regulations. As you will recall there was a concern, as discussed with Ross Bunnell of my staff, that the boats might exceed these criteria due to the contents of residual solder. However, since this is not the case, the boats are not considered hazardous waste under federal or state regulations, and, as a result, hazardous waste requirements (including the requirement to obtain storage and/or treatment facility permits) do not apply to the boats. Nevertheless, please be advised that, pursuant to Regulations of Connecticut State Agencies (RCSA) Section 22a-449(c)-102(a)(2)(A), determinations as to whether or not wastes are hazardous wastes must be performed annually or whenever there is a change in the process or operation generating the waste or in the raw materials that could affect the test results. It is also important to note that this testing should also be repeated for any other facilities from which you accept similar carbon boats, unless it can be documented that the boats and the process are exactly the same as those generated at the IBM facility in Canada.

**Residues from Cleaning Would be Subject to Hazardous Waste Generator Requirements**

Although the boats themselves are not hazardous waste, it is possible that their cleaning may generate a hazardous waste (i.e., the removed solder), and that, as a result, you may become a generator of hazardous waste. However, based on the very small amounts of solder present on each boat and the relatively small number of boats that you will be processing, it is not likely that you will generate hazardous waste in significant amounts. Indeed, it appears that you will very likely qualify as a Conditionally Exempt Small Quantity Generator ("CESQG"), which is the least highly-regulated category of hazardous waste generator. The rules for CESQGs do not require any sort of permit, or even an EPA Identification Number as is required for larger categories of generators. The CESQG requirements are summarized in RCSA Section 22a-449(c)-101(b), and require compliance with the federal CESQG requirements in 40 CFR 261.5 (as modified by the state hazardous waste rules at RCSA Sections 22a-449(c)-101(a)(2)(P) through (W), inclusive), as well as two additional

requirements (namely, the requirement to use transporters with EPA Identification Numbers and a Connecticut hazardous waste transporters permit, and the requirement to maintain records of any test results, analyses or other hazardous waste determinations for at least three years from the date the waste was last shipped off-site).

**Cleaning of the Boats Does Not Require a Permit Under CGS Section 22a-454**

Another issue with respect to your proposed cleaning operation relates to the possibility that it might require a permit under Connecticut General Statutes ("CGS") Section 22a-454 (copy attached). As you can see from the attached text, this statute requires a permit for persons that are engaged in certain treatment activities. However, after reviewing your proposed cleaning process, it has been determined that this statute does not apply, and that no permit is required under this statute. Rather, it would appear that your proposed process is not "treatment," but simply a cleaning operation that is designed to remove contamination from an otherwise usable piece of equipment so that it may be reused for its intended purpose.

**Cleaning of the Boats Does Not Require a Permit Under CGS Section 22a-208a**

The last potentially applicable requirement with respect to your proposed cleaning operation related to the possible need for a permit under CGS Section 22a-208a, which requires a permit for certain facilities that receive or process "solid waste" as defined in CGS Section 22a-207. However, it has been determined that the boats being sent for cleaning are not "unwanted or discarded" as described in this definition, in that they will be directly reused for their original intended purpose after cleaning, and do not need to be recycled in order to be reused. As a result, the boats being sent for cleaning are not "solid waste," and therefore the permitting requirements of CGS Section 22a-208a do not apply.

**Other Requirements May Apply**

Please be advised that this letter addresses only the waste management aspects of your operation, and that other state or federal statutes, regulations, or requirements may apply.

If you or IBM Canada have any further questions concerning your proposed cleaning process, please contact Ross Q. Bunnell of my staff at (860) 424-3274, email at [ross.bunnell@po.state.ct.us](mailto:ross.bunnell@po.state.ct.us) or Kim Hudak at (860) 424-3396.

Sincerely,



Michael Harder, Chief  
Bureau of Waste Management

MJH:rqb

Cc: Patrick Jacques  
IBM Canada  
23, boulevard de l'Aéroport  
Bromont (Quebec) Canada  
J2L 1A3

**Sec. 22a-454. (Formerly Sec. 25-54hh). Permit for collection, storage or treatment, containment, removal or disposal of certain substances, materials or wastes: Suspension or revocation.**

**Prohibition of disposal of certain hazardous wastes in a land disposal facility. Status changes. (a)**

No person shall engage in the business of collecting, storing or treating waste oil or petroleum or chemical liquids or hazardous wastes or of acting as a contractor to contain or remove or otherwise mitigate the effects of discharge, spillage, uncontrolled loss, seepage or filtration of such substance or material or waste nor shall any person, municipality or regional authority dispose of waste oil or petroleum or chemical liquids or waste solid, liquid or gaseous products or hazardous wastes without a permit from the commissioner. Such permit shall be in writing, shall contain such terms and conditions as the commissioner deems necessary and shall be valid for a fixed term not to exceed five years. No permit shall be granted, renewed or transferred unless the commissioner is satisfied that the activities of the permittee will not result in pollution, contamination, emergency or a violation of any regulation adopted under sections 22a-30, 22a-39, 22a-116, 22a-347, 22a-377, 22a-430, 22a-449, 22a-451 and 22a-462. The commissioner shall require payment of a fee of five hundred dollars per year for each year covered by a permit to transport hazardous waste and the payment of a fee of fourteen thousand dollars for a permit to treat waste oil or petroleum or chemical liquids. The commissioner may adopt regulations, in accordance with the provisions of chapter 54, to prescribe the amount of the fees required pursuant to this section. Upon the adoption of such regulations, the fees required by this section shall be as prescribed in such regulations. The commissioner may suspend or revoke a permit for violation of any term or condition of the permit, for conviction of a violation of section 22a-131a or for assessment of a fine under section 22a-131. The commissioner may conduct a program of study and research and demonstration, relating to new and improved methods of waste oil and petroleum or chemical liquids or waste solid, liquid or gaseous products or hazardous wastes disposal. For the purposes of this section, collecting, storing, or treating of waste oil, petroleum or chemical liquids or hazardous waste shall mean such activities when engaged in by a person whose principal business is the management of such wastes.

(b) No person may dispose of any hazardous waste in a hazardous waste land disposal facility except the following: (1) Metal hydroxide sludge generated from the treatment of electroplating or metal finishing operation waste waters or any other metal hydroxide sludge approved by the commissioner; (2) hazardous waste sludge or residue resulting from an operation determined by the commissioner to be a recycling operation and which has received the required approvals from the commissioner and the Connecticut Siting Council, provided the commissioner determines that such residue cannot reasonably be incinerated or otherwise managed; and (3) hazardous waste spills, fly ash, residue from waste-to-energy facilities or municipal waste water treatment sludge that has been determined to be hazardous waste but approved for such disposal by the commissioner. As used in this subsection, "hazardous waste" has the same meaning as in section 22a-115 and "hazardous waste land disposal facility" means a facility or part of a facility where hazardous waste is applied onto, placed within or beneath the soil surface and remains after closure of the facility. The prohibition established by this subsection shall not continue after July 1, 1991, unless renewed by the General Assembly. Notwithstanding the provisions of this subsection, any restrictions on the land disposal of hazardous waste imposed by the commissioner pursuant to this subsection shall be as stringent as those imposed under Subtitle C of the Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.), as amended.

(c) No person shall engage in the business of the transfer of hazardous waste from one vehicle to another or from one mode of transportation to another without a permit from the commissioner issued under subsection (a) of this section.

(d) The commissioner shall require the payment of the following fees for permits under this section: (1) Thirty thousand dollars to operate a hazardous waste landfill or incinerator; (2) fourteen thousand dollars to store or treat hazardous waste; (3) seven thousand dollars to engage in the transfer of hazardous waste as described in subsection (c) of this section if the hazardous waste is transferred from its original container to another container; and (4) two thousand five hundred dollars to engage in the transfer of hazardous waste as described in subsection (c) of this section if the hazardous waste remains in the original container. The commissioner shall also charge a fee of fifty dollars for each hazardous waste treatment, disposal or storage facility which submits an application for a status change to a generator. The commissioner shall charge a fee of twenty-five dollars for each hazardous waste large quantity generator which submits an application for status change to a small generator. The commissioner may

adopt regulations, in accordance with the provisions of chapter 54, to prescribe the amount of the fees required pursuant to this section. Upon the adoption of such regulations, the fees required by this section shall be as prescribed in such regulations.

(e) (1) The commissioner may issue a general permit for a category of activities which require a permit under subsection (a) of this section or license under subsection (b) of section 22a-449, except for an activity for which an individual permit has already been obtained provided the issuance of the general permit is not inconsistent with the requirements of the federal Resource Conservation and Recovery Act. Any person or municipality conducting an activity for which a general permit has been issued shall not be required to obtain an individual permit under subsection (a) of this section, except as provided in subdivision (3) of this subsection. The general permit may regulate a category of activities which: (A) Involve the same or substantially similar types of operations; (B) involve the collection, storage, treatment or disposal of the same types of substances; (C) require the same operating conditions or standards, and (D) require the same or similar monitoring, and which in the opinion of the commissioner are more appropriately controlled under a general permit than under an individual permit. The general permit may require any person or municipality proposing to conduct any activity under the general permit to register such activity with the commissioner before it is covered by the general permit. Registration shall be on a form prescribed by the commissioner.

(2) Notwithstanding any provisions of this section, or any regulations adopted thereunder, or of chapter 54, the following procedures shall apply to the issuance, renewal, modification, revocation or suspension of a general permit: (A) A general permit shall be issued for a term specified by the permit and shall clearly define the activity covered thereby and may include such conditions and requirements as the commissioner deems appropriate, including but not limited to operation and maintenance requirements, management practices, and reporting requirements; (B) the commissioner shall publish notice of intent to issue a general permit in a newspaper having a substantial circulation in the affected area; (C) there shall be a comment period of thirty days following publication of such notice during which interested persons may submit written comments to the commissioner; (D) the commissioner shall publish notice of the issuance or decision not to issue a general permit in a newspaper having substantial circulation in the affected area. The commissioner may revoke, suspend or modify a general permit in accordance with the notice and comment procedures for issuance of a general permit specified in this subsection. Any person may request that the commissioner issue, modify, suspend or revoke a general permit in accordance with this subsection; and (E) summary suspension may be ordered in accordance with subsection (c) of section 4-182.

(3) Subsequent to the issuance of a general permit, the commissioner may require any person or municipality whose activity is or may be covered by the general permit to apply for and obtain an individual permit pursuant to subsection (a) of this section if he determines that an individual permit would better protect the land, air and waters of the state from pollution. The commissioner may require an individual permit under this subdivision in cases including, but not limited to the following: (A) When the owner or operator is not in compliance with the conditions of the general permit; (B) when a change has occurred in the availability of demonstrated technology or practices for the control or abatement of pollution applicable to the activity; (C) when circumstances have changed since the time of the issuance of the general permit so that the activity is no longer appropriately controlled under the general permit, or either a temporary or permanent reduction or elimination of the authorized activity is necessary; or (D) when a relevant change has occurred in the applicability of the federal Resource Conservation and Recovery Act. In making the determination to require an individual permit, the commissioner may consider the location, character, and size of the activity, and any other relevant factors. The commissioner may require an individual permit under this subdivision only if the affected person or municipality covered by the general permit has been notified in writing that a permit application is required. This notice shall include a brief statement of the reasons for this decision, an application form, a statement setting a time for the person or municipality to file the application, and a statement that on the effective date of the individual permit the general permit as it applies to the individual permittee shall automatically terminate. The commissioner may grant an extension of time upon the request of the applicant. If the affected person or municipality does not submit a complete application for an individual permit within the time frame set forth in the commissioner's notice or as extended by the commissioner in writing, then the general permit as it applies to the affected person or

municipality shall automatically terminate. The applicant shall use his best efforts to obtain the individual permit. Any interested person or municipality may petition the commissioner to take action under this subdivision.

(4) The commissioner may adopt regulations, in accordance with the provisions of chapter 54 to carry out the purposes of this subsection.

(1969, P.A. 765, S. 7; 1971, P.A. 872, S. 107; 1972, P.A. 237, S. 1; P.A. 73-265, S. 1, 2; P.A. 79-605, S. 8, 17; P.A. 82-151, S. 2; P.A. 84-115; 84-535, S. 1; P.A. 85-342, S. 1; 85-568, S. 1; P.A. 86-219, S. 1, 3; P.A. 87-150; 87-226, S. 1, 2; 87-531, S. 5; P.A. 90-231, S. 6, 28; P.A. 91-251, S. 2, 4; 91-313, S. 2, 5; 91-369, S. 18, 36; P.A. 94-205, S. 5; P.A. 96-145, S. 4; 96-163, S. 7.)

History: 1971 act replaced references to water resources commission with references to environmental protection commissioner; 1972 act prohibited "acting as a contractor to contain or remove spills of such material" without permit and added other references to containment and removal and contracting for such services; P.A. 73-265 reworded provision re charge for permit to allow charge of less than five dollars, substituting "not to exceed" five dollars for "of" five dollars, deleted provision re commissioner's duty to consult with and advise persons in the business of disposal of pollutants as to best methods of doing so and made program of study and research optional rather than mandatory, substituting "may" for "shall"; P.A. 79-605 clarified provisions, adding references to hazardous wastes, "solid, liquid or gaseous" products, etc., required municipalities and regional authorities to obtain permits and deleted provision re fee for permit; P.A. 82-151 amended section to require permits for the storage and treatment of waste oil, made permit valid for maximum of five years rather than one year, authorized suspension or revocation of a permit upon violation of a term or condition and specified meaning of collecting, storing or treating of applicable substances for purposes of section; Sec. 25-54hh transferred to Sec. 22a-454 in 1983; P.A. 84-115 added Subsec. (b) prohibiting the disposal of certain hazardous wastes in land disposal facilities; P.A. 84-535 amended Subsec. (a) by adding provisions authorizing the commissioner of environmental protection to consider an applicant's compliance history when granting or renewing certain hazardous waste permits and expanded the class of persons requiring a permit to include persons who manage waste oil, petroleum or chemical liquids or hazardous waste during the course of their business and amended Subsec. (b) by adding a provision terminating the ban on the disposal of hazardous waste in a land disposal facility as of July 1, 1986; P.A. 85-342 amended Subsec. (a) by adding Subdiv. (2) regarding denial of a permit for a criminal conviction of violating environmental law; P.A. 85-568 amended Subdiv. (2) of Subsec. (b) by deleting provision that sludge be from residue derived from an "in-state" operation; P.A. 86-219 amended Subsec. (b) by extending the ban on the disposal of hazardous waste in a landfill from July 1, 1986, to July 1, 1987; P.A. 87-150 amended Subsec. (a) by requiring persons whose principal business is the management of hazardous waste to obtain a permit rather than all persons who manage hazardous waste; P.A. 87-226 amended Subsec. (b) by adding proviso to Subdiv. (2) that the commissioner determines that the residue cannot be incinerated and adding to Subdiv. (3) residue from waste-to-energy facilities, by adding provisions regarding the stringency of restrictions on the land disposal of hazardous waste imposed by the commissioner and by extending prohibition of the disposal of metal hydroxide sludge from July 1, 1987 to July 1, 1991; P.A. 87-531 applied provisions to transfer of permits; P.A. 90-231 amended Subsec. (a) to require the payment of fees for permits issued pursuant to said Subsec. and provided that on and after July 1, 1993, the fees shall be prescribed by regulations and added Subsec. (c) re the payment of fees with certain applications; P.A. 91-251 added Subsec. (d), relettered as (e) because of subsequent amendment, concerning general permits for certain categories of activities; P.A. 91-313 inserted new Subsec. (c) concerning transfer of hazardous waste and changed subsequent Subsec. designator accordingly; P.A. 91-369 amended section to specify in Subsec. (a) the amount required for a fee to transport hazardous waste, to move the fees for operating a hazardous waste landfill and for storing or treating hazardous waste from Subsec. (a) to Subsec. (c) and to restate commissioner's authority to adopt regulations setting the fees required by this section; P.A. 94-205 amended Subsec. (a) to delete provisions re review of permit applicant's compliance history; P.A. 96-145 amended Subsec. (e) to authorize a general permit for certain activities associated with oil terminals; P.A. 96-163 amended Subsec. (d) to delete a provision re setting of fees by regulation and provided fees for a permit to transfer hazardous waste.

See Sec. 22a-6m re review of permit applicant's compliance history.

See Sec. 22a-6z re regulations implementing the Subtitle C of the Resource Conservation and Recovery Act of 1976.

See Sec. 22a-27i re exemption of municipality for one year.

Cited. 192 C. 591, 595. Cited. 202 C. 300—302.

Subsec. (a):

Processing of spent etchant, irrespective of whether it is solid waste, is subject to regulation under section. 257 C. 128.

## Ross Bunnell - weight of boats - dirty vs clean

---

**From:** <pajacque@ca.ibm.com>  
**To:** <ross.bunnell@po.state.ct.us>  
**Date:** 3/11/2004 7:11 PM  
**Subject:** weight of boats - dirty vs clean  
**CC:** <tsozycz@asc2t.com>, <jjozycz@asc2t.com>

---

Hi Mister Bunnell,

In response to your question concerning the weight of an individual boat (dirty vs clean)

Here is the data :

	Dirty	clean
Weight of 45 boats (1 mm pitch)	23.09 lbs	22.80 lbs
Weight of 1 boat (1 mm pitch)	0.513 lbs	0.507 lbs

What I did is I weighed a stack of 45 clean boats on a scale and I divided the results by 45 in order to have the weight of an individual clean boat.

I did the same thing with a stack of 45 dirty boats

Thanks,  
 Patrick Jacques  
 M.E. MLCBA-C4  
 Tél : 450-534-6519  
 IBM Bromont

wt of clean boat :  
0.507 lb

dirty boat wt = 0.513

wt of lead = .006 lb

$.006 \text{ lb Pb} / .507 \text{ lb tray} =$

$.011834319 =$

11,834.319 ppm (>>>

100 ppm theoretical limit)

## Ross Bunnell - weight of boats - dirty vs clean

---

**From:** <pajacque@ca.ibm.com>  
**To:** <ross.bunnell@po.state.ct.us>  
**Date:** 3/12/2004 5:17 PM  
**Subject:** weight of boats - dirty vs clean  
**CC:** <tsozycz@asc2t.com>, <jjozycz@asc2t.com>

---

Hi Ross,

I forgot to point out in my last e-mail that the 0.006 lb difference in boat weight dirty boat vs clean boat comes from tin and lead contamination.

The metallic spheres used in our process that leave this contamination in the boat holes is 63% tin and 37 % lead.

So the lead contamination per boat is :  $0.006\text{lbs} \times 0.37 = 0.002 \text{ lbs / dirty boat}$

Thanks,

Patrick Jacques  
 M.E. MLCBA-C4  
 Tél : 450-534-6519  
 IBM Bromont

----- Renvoyé par Patrick Jacques/Bromont le 2004-03-12 17:12 -----

Patrick Jacques

Pour : ross.bunnell@po.state.ct.us  
 2004-03-11 19:10 cc : tsozycz@asc2t.com, jjozycz@asc2t.com  
 De : Patrick Jacques/Bromont@Bromont  
 Objet : weight of boats - dirty vs clean

Hi Mister Bunnell,

In response to your question concerning the weight of an individual boat (dirty vs clean)

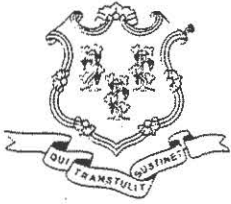
Here is the data :

	Dirty	clean
Weight of 45 boats (1 mm pitch)	23.09 lbs	122.80 lbs
Weight of 1 boat (1 mm pitch)	0.513 lbs	0.507 lbs

What I did is I weighed a stack of 45 clean boats on a scale and I divided the results by 45 in order to have the weight of an individual clean boat.

I did the same thing with a stack of 45 dirty boats





STATE OF CONNECTICUT  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



February 13, 2004

Mr. Thom Ozycz  
ASC2T  
340 New London Turnpike  
Stonington CT 06378-1709

Dear Mr. Ozycz:

Per our discussion of last Wednesday, I am writing to you to outline the steps that must be taken in order to ensure that your processing of the carbon trays from IBM is in accordance with state and federal hazardous waste regulations.

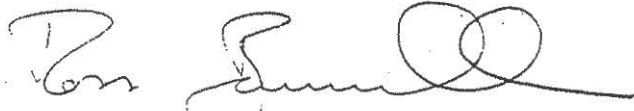
As we discussed, it appears at least mathematically possible that the used trays may retain enough tin/lead solder so as to exceed the state and federal hazardous waste limit of 5 mg/l of lead as determined by a Toxicity Characteristic Leaching Procedure (or "TCLP" test). Therefore, in order to ensure that the material is not a hazardous waste that would require manifests to be used when the material is shipped to you, and possibly trigger hazardous waste facility permitting requirements, it would be necessary to analyze a representative number of these trays by TCLP in order to determine the concentration of lead in these items, and the degree to which the concentration varies from one tray to the next. If this representative sampling confirms that, to a high degree of certainty, these trays do not exceed 5 mg/l of lead, then it would have been demonstrated that they are not hazardous waste, and that hazardous waste requirements would not apply. Attached please find a copy of our fact sheet on performing hazardous waste determinations, which may be of assistance in this endeavor.

You will recall that we also discussed the issue of whether or not the trays might be considered a "Connecticut-regulated" waste, even if they were determined not to be hazardous waste. You indicated that you spoke to Kim Hudak of this Division and received relevant feedback from her on this matter. Nevertheless, I have also attached a fact sheet entitled "Non-RCRA Hazardous Waste (Connecticut-Regulated Waste)" in the event that you may desire more information on the state requirements that apply to these wastes.

If the trays are determined to be non-hazardous, it is also possible that they may be subject to solid waste permitting requirements. Since this is not an area in which I have any expertise, I would suggest that you contact Kim Hudak and/or Calin Tanovici (tel (860) 424-3315 regarding the potential applicability of these requirements.

If you should have any further questions, you may call me at (860) 424-3274, or email me at [ross.bunnell@po.state.ct.us](mailto:ross.bunnell@po.state.ct.us). You may also call our toll-free compliance assistance line at 1-888-424-4193.

Sincerely,

A handwritten signature in black ink, appearing to read "Ross Bunnell". The signature is fluid and cursive, with the first name "Ross" and last name "Bunnell" clearly distinguishable.

Ross Q. Bunnell, Sanitary Engineer 3  
Bureau of Waste Management  
Engineering & Enforcement Division

RQB:rqb  
Attachments  
Cc: Kim Hudak, WEED Permitting Group



IBM Canada Ltée  
23, boulevard de l'Aéroport  
Bromont (Québec)  
J2L 1A3

April 9th, 2004

**RECEIVED**

APR 14 2004

DEP-WASTE MANAGEMENT BUREAU  
WASTE ENGINEERING & ENFORCEMENT

Mr. Ross Bunnell  
State of Connecticut DEP

Sir,

In response to your latest inquiries regarding the Arsenic content in our tin/lead metallic spheres ,  
I send to you two documents :

1 – Supplier's certificate of conformity.

In this document, you will find the weight percentage of the different elements (tin, lead) and  
impurities (arsenic, gold, aluminium, etc.) present in the tin/lead metallic spheres

2 – Supplier's Material and Safety Data Sheet

In this document, you will find information concerning hazard identification, first aid  
information, fire fighting measures etc. concerning the tin/lead metallic spheres

I trust you will find the above to your satisfaction.

Sincerely,

Patrick Jacques  
Process Engineer  
Ball Attach - MLCBA  
IBM Bromont



## CERTIFICATE OF CONFORMANCE AND ANALYSIS

IBM CANADA CDC  
23 Airport Road  
Bromont Quebec, J2E 1A3 CANADA

Cust P.O.:	SK205 LINE 8 (4/15)	Date:	04/15/03
Part No.:	95426842B	Report No.:	AP2003-00136
Or	SPHERE MFG 31/MAR/03	Alpha No.:	26664-1
Metak:	65SN/37PB	Lot Number	00337631
	.0207/.002 DIAM	Quantity:	120,000,000 PCS
Flux:	DWG: 74119432 EC E69202		

THIS IS TO CERTIFY THAT THE PRODUCTS FURNISHED ON THIS ORDER AND COVERED BY THIS CERTIFICATE HAVE BEEN MANUFACTURED IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS, INSTRUCTIONS AND SPECIFICATIONS. PHYSICAL AND CHEMICAL DATA PERTAINING TO THIS ORDER ARE ON FILE AND AVAILABLE FOR INSPECTION. ANALYTICAL RESULTS ARE TABULATED BELOW.

Aluminum	% Weight	<0.0005	Antimony	% Weight	<0.0050
Arsenic	% Weight	<0.0100	Bismuth	% Weight	<0.0010
Cadmium	% Weight	<0.0005	Copper	% Weight	0.0012
Gold	% Weight	<0.0005	Iodine	% Weight	<0.0050
Iron	% Weight	<0.0015	Lead	% Weight	BALANCE
Nickel	% Weight	<0.0010	Phosphorus	% Weight	<0.0015
Silver	% Weight	<0.0005	Sulfur	% Weight	<0.0010
Tin	% Weight	63.0	Zinc	% Weight	<0.0005

<= LESS THAN

BY:

*Bernie Martin*  
QUALITY CONTROL DEPARTMENT



February 26, 2004

TO: Ross Q. Bunnell, Sanitary Eng. 3  
Bureau of Waste Management  
Engineering & Enforcement Div  
State of Connecticut

FROM: Thom S. Ozycz  
Advanced Semiconductor Cleaning/Coating Technology  
Durham, CT 06422 USA

**RECEIVED**

MAR 02 2004

DEP-WASTE MANAGEMENT BUREAU  
WASTE ENGINEERING & ENFORCEMENT

Dear Ross:

In response to our phone conversation last week enclosed is a brief description of IBM's tray processing. The report also provides information regarding the exposure level of material that would be transported to our facility (Durham, CT.). Also, included is a test IBM performed on the reclaim tray before and after weight. After reviewing would you please share with the group your comments, regarding the information provided and possible state regulations that might be required.

Respectively:



Thom S. Ozycz

cc: Patrick Jacques  
Gaetan Pepin  
Michel J. Roy



IBM Canada Ltée  
23, boulevard de l'Aéroport  
Bromont (Québec)  
J2L 1A3

February 17, 2004

Tel # 1-450-534-6519

Mr. Ross Bunnell  
State of Connecticut DEP  
Mr. Thom S. Ozycz  
President, ASC2T

Sirs,

In response to your inquiries regarding the environmental issues with the cleaning of the IBM graphite boats (trays) at ASC2T, I am pleased to provide you with the following information.

1. Amount of tin/lead on the graphite boats

In order to determine the amount of tin/lead on each graphite boat, we weighed 45 clean graphite boats (no flux and no tin/lead on the boats) as well as 45 used graphite boats (with flux and tin/lead) on the boat surface and in the boat holes. The difference in weight for each group of 45 boats (used vs. clean) was less than 0.25 lbs. Therefore, the amount of tin/lead per boat could be approximated to be  $0.25 \text{ lbs.} / 45 \text{ boats} = 0.006 \text{ lbs. per boat}$ .

2. Yearly quantity for cleaning.

We plan to clean at ASC2T about 1,400 graphite boats per year

3. Accumulation of flux and tin/lead on graphite boats.

The graphite boats are used on an assembly line for electronic modules at the IBM plant located in Bromont. The boats are used as carriers on the production line. Each boat hole is loaded with tin/lead metallic spheres, sprayed with flux, and reflowed in a furnace at high temperature. Each furnace reflow leaves a very small quantity of flux on the boat surface, and a very small amount of tin/lead coming from the metallic spheres in the boat holes. Each boat undergoes this cycle many times over. Once the boats have reached a certain level of contamination (flux, tin, lead) they need to be cleaned.

I trust you will find the above to your satisfaction.

Sincerely,

Patrick Jacques  
Process Engineer  
Ball Attach - MLCBA  
IBM Bromont



April 6, 2004

State of Connecticut  
Department of Environmental Protection  
c/o Ross Q. Bunnell, Sanitary Engineer 3  
79 Elm Street  
Hartford, CT 06106-5127

**RECEIVED**

APR 12 2004

DEP-WASTE MANAGEMENT BUREAU  
WASTE ENGINEERING & ENFORCEMENT

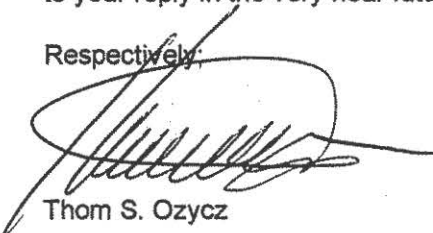
Dear Ross;

I phone yesterday and today with no success in reaching you, so I thought this email would be appropriate. On Monday I received the TCLP test results from KB Analytical and the there finding are as follows:

Parameter	Result
Arsenic-TCLP	ND / 1.0 mg/L
Barium-TCLP	ND / 0.50 mg/L
Cadmium-TCLP	ND / 0.10 mg/L
Chromium-TCLP	ND / 0.20 mg/L
Lead-TCLP	ND / 0.50 mg/L
Mercury-TCLP	ND / 0.005 mg/L
Selenium-TCLP	ND / 0.50 mg/L
Silver-TCLP	ND / 0.10 mg/L

A copy of this report is going in the mail today to support the enclosed data. Based on the results and our previous conversation the material contamination is below the State of Connecticut levels (Characteristic Wastes). We would like to now the next step involved so that we can get this project off the ground and start processing the trays. Your cooperation would be greatly appreciated for both ASC2T and IBM. Look forward to your reply in the very near future.

Respectively,



Thom S. Ozycz

**KB Analytical, LLC**  
 Waterview Business Park  
 15 Lakewood Drive, Unit 9  
 Oakdale, CT 06370  
 Ph: 1-(860)-442-4080  
 Fax: 1-(860)-447-1891

ASCT  
 30 Ozick Drive  
 Durham, CT 06422

-----  
 Log number: 04-17643C

Date received: 3/12/04  
 -----

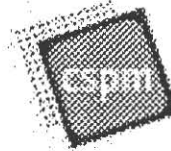
Pulverized Graphite Tray sample labeled "7Z" submitted for TCLP analysis.  
 -----

<u>Parameter</u>	<u>Result</u>
Arsenic-TCLP	ND/1.0 mg/L
Barium-TCLP	ND/0.50 mg/L
Cadmium-TCLP	ND/0.10 mg/L
Chromium-TCLP	ND/0.20 mg/L
Lead-TCLP	ND/0.50 mg/L
Mercury-TCLP	ND/0.005 mg/L
Selenium-TCLP	ND/0.50 mg/L
Silver-TCLP	ND/0.10 mg/L

Notes: 1) ND/ = Not detected, limit of detection,  
 2) Analysis by PH-0574.

-----  
 Authorization:  
 William S. Georgian,  
 Director





Revision Date: 09/15/2000

## MATERIAL SAFETY DATA SHEET

=====

### SECTION 01 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

=====

Product Name: Tin Lead Solder Spheres  
Synonyms: 63/37  
Description:  
Manufacturer: Cookson Semiconductor Packaging Materials  
Address: 600 Route 440  
Jersey City, NJ 07304  
Telephone: 201.434.6778  
Emergency: CHEMTREC 800.434.9300  
Contact:

=====

### SECTION 02 COMPOSITION AND INFORMATION ON INGREDIENTS

=====

Chemical Ingredients (% by Weight)

Ingredient	CAS Number	Percent Weight
Lead	7439-92-1	30% - 40%
Tin	7440-31-5	60% - 70%

=====

### SECTION 03 HAZARD IDENTIFICATION

=====

EMERGENCY OVERVIEW: Moderate eye irritant. Will not burn. Toxic by inhalation. Moderate gastrointestinal tract irritant. Moderate respiratory tract irritant. Causes skin irritation.

ROUTES OF ENTRY: Inhalation; Ingestion; Skin Contact; Eye Contact; Absorption.

TARGET ORGANS: Blood; Digestive tract; Kidneys; Nervous System.

MEDICAL CONDITIONS AGGRAVATED: Digestive tract disease; Kidney disease.

IMMEDIATE (ACUTE) SYMPTOMS OVER-EXPOSURE BY ROUTE OF EXPOSURE:

EYE CONTACT: Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.

SKIN CONTACT: Can cause slight skin irritation.

INHALATION: Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.

INGESTION: Irritating to mouth, throat and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.

LONG TERM (CHRONIC) HEALTH EFFECTS:

CARCINOGENICITY: None of the substances in this product are confirmed as human carcinogens at this time by the NTP, IARC or OSHA. IARC classifies lead and some lead compounds as 2B carcinogens to humans. AGCIH lists lead as an A3 animal carcinogen with unknown relevance to humans.

REPRODUCTION: No data available to indicate product or any components present at greater than 0.1% may cause birth defects. Women of child-bearing age should avoid exposure to lead and its inorganic compounds due to post-natal effects.

MUTAGENICITY: No data available to indicate product or any components present at greater than 0.1% is mutagenic or genotoxic.

HMIS CODE: (Health:2) (Flammability:1) (Reactivity:0) (Protection:B)

NFPA CODE: (Health:2) (Flammability:1) (Reactivity:0)

=====  
SECTION 04 FIRST AID INFORMATION  
=====

EYE: Immediately flush eyes with plenty of water for at least twenty minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.

SKIN: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

INHALATION: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.

INGESTION: Seek medical attention immediately.

NOTES TO DOCTOR: No additional first aid information available.

=====  
SECTION 05 FIRE FIGHTING MEASURES  
=====

FLASHPOINT: N/A

UEL: Not determined

LEL: Not determined

AUTOIGNITION TEMPERATURE: N/E

FLAMMABILITY CLASSIFICATION: Not combustible.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Dust at sufficient concentrations can form explosive mixtures with air.

FIRE-FIGHTING EQUIPMENT: Will not burn, no special instructions available. Use methods for surrounding the fire.

HAZARDOUS COMBUSTION PRODUCTS: Metal fumes, toxic fumes.

=====  
SECTION 06 ACCIDENTAL RELEASE MEASURES  
=====

PRECAUTIONS AND EQUIPMENT: Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in section 8 of this MSDS.

METHODS FOR CLEAN-UP: Wear complete and proper personal protective equipment following the recommendation of section 8. Gather and store in a sealed container pending a waste disposal evaluation. Do not use broom or air cleaning etc.

=====  
SECTION 07 HANDLING AND STORAGE  
=====

HANDLING: Harmful or irritating material. Avoid contact and avoid breathing the material. Use only in a well ventilated area. As with all chemicals, good industrial hygiene practices should be followed when handling this material. Avoid contact with the material, avoid breathing dust or fumes, use only in a well ventilated area. Wash thoroughly after handling; do not get in eyes, on skin and clothing; Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation.

STORAGE: No special requirements.

=====  
SECTION 08 EXPOSURE CONTROLS AND PERSONAL PROTECTION  
=====

EYE: Wear chemically resistant safety glasses with side shields when handling this product. Do not wear contact lenses. Have an eye wash station available.

SKIN: Wear protective gloves. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking and when leaving work.

INHALATION: Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if ventilation is not available or sufficient to eliminate symptoms. Follow a respiratory protection program that meets 29 CFR 1910.134 and ANSI Z88.2 requirements whenever work place conditions warrant the use of a respirator. Wear a NIOSH approved respirator if any exposure is possible.

ENGINEERING CONTROLS: Use local exhaust ventilation or other engineering controls to minimize exposures and maintain operator comfort. Engineering controls must be designed to meet the OSHA Chemical Specific Standard in 29 CFR 1910. Use process enclosures, local exhaust ventilation or other engineering controls to control airborne levels below recommended exposure limits. Explosion proof exhaust ventilation should be used. Facilities storing or using this material should be equipped with an eyewash and safety shower.

EXPOSURE GUIDELINES:

Component	ACGIH Exposure Limits		
	TLV-TWA	STEL	CEILING
Lead	0.05mg/m3 TWA		
Tin	2mg/m3 TWA		

=====  
SECTION 09 PHYSICAL AND CHEMICAL PROPERTIES  
=====

APPEARANCE AND ODOR: Grey. None.

pH: N/A.

VAPOR PRESSURE (mm Hg@20°C):

SOLUBILITY IN WATER: Not determined.

=====  
SECTION 10 STABILITY AND REACTIVITY  
=====

STABILITY:

DECOMPOSITION PRODUCTS: Metal fumes; Toxic fumes.

CONDITIONS TO AVOID: None known.. Contamination.. Contact with air. Contact with water.

MATERIALS TO AVOID: Strong oxidizing agents; Strong acids; Peroxides; Metals; Strong reducing agents; Chlorine; Moisture; Strong alkalies.

=====  
SECTION 11 TOXICOLOGICAL INFORMATION  
=====

COMPONENT TOXICOLOGY DATA (NIOSH):

Chemical Name	LD50/LC50
---------------	-----------

=====  
SECTION 12 ECOLOGICAL INFORMATION  
=====

OVERVIEW: Slight ecological hazard. In high concentrations, this material may be dangerous to plants and/or wildlife

=====  
SECTION 13 DISPOSAL CONSIDERATIONS  
=====

WASTE DESCRIPTION: Spent or discarded material may be hazardous waste.

DISPOSAL METHODS: Dispose of in accordance with Federal, State, Local or Provincial laws and regulations.

=====  
SECTION 14 TRANSPORTATION INFORMATION  
=====

SHIPPING BASIC DESCRIPTION: DOT & IATA: Not restricted.

=====  
SECTION 15 REGULATORY INFORMATION  
=====

TSCA STATUS: All components of this product are listed on the TSCA Inventory of Existing Chemical Substances.

REGULATED CHEMICALS:

Chemical Name	REGULATION
Lead	SARA 313
Lead	CA Prop 65

=====  
SECTION 16 OTHER INFORMATION  
=====

Country of Origin: United States

Cookson Semiconductor Packaging Materials  
Alpha-Fry Technologies  
600 Route 440  
Jersey City, NJ 07304  
Tel No: 201.434.6778

Prepared by:

Environment, Health and Safety Department

Issued: September 25, 2000

Supersedes: September 14, 2000

-----  
This Material Safety Data Sheet conforms to the requirements of ANSI Z400.1. This material safety data sheet and the information it contains are offered to you in good faith as accurate. We have reviewed any information contained in this data sheet which we received from sources outside our company. We believe that information to be correct but cannot guarantee its accuracy or completeness. Health and safety precautions in this data sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. No statement made in this data sheet shall be construed as a permission or recommendation for the use of any product in a manner that might infringe existing patents. No warranty is made, either express or implied.



May 3, 2004

State of Connecticut DEP  
c/o Ross Bunnell Sanitary Engineer 3  
79 Elm Street  
Hartford, CT. 06106-5127

RECEIVED

MAY 07 2004

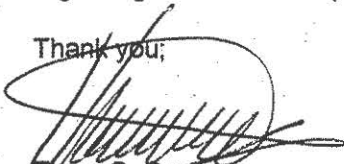
DEP-WASTE MANAGEMENT BUREAU  
WASTE ENGINEERING & ENFORCEMENT

Dear Ross;

In regards to my letter dated May 2, 2004 to Gaetan Pepin of IBM, I would like to revise one of my requests. In the letter I requested that IBM send you a letter requesting a response in writing to your verbal comments to Patrick Jacque referring to the TCLP test results. I'm now requesting that you address the letter to my attention at Advance Semiconductor Cleaning/Coating technology, LLC instead of IBM as initially requested. You may copy Patrick at IBM, but again address the letter to myself, this is per the request of IBM. In the letter can you acknowledge the TCLP test results, the permitting requirement of the hazardous waste if necessary, also permitting of the hazardous waste generated at ASC2T if required, or any other key point that need to be addressed before we move forward with this project. You may refer to the April 29<sup>th</sup>. email from Gaetan Pepin (enclosed with this email) where the above questions are raised. If you have any further questions please feel free to contact me (203-605-4408).

In advance I would like to thank you for all your co-operation and the guidance you've give IBM and myself regarding the boat clean project.

Thank you;



Thom S. Ozycz



Thom S. Ozycz  
VP Engineering

Office Phone 860 349-1121  
Phone (Cell) 203-605-4408  
Office Fax 860-349-1143  
Home Office Fax 860 536-6200  
e-mail tsozycz@asc2t.com

30 Ozick Drive  
Durham, CT 06422

## Thom S. Ozycz

---

**From:** gpepin@ca.ibm.com  
**Sent:** Thursday, April 29, 2004 4:11 PM  
**To:** tsozycz@asc2t.com; ajroy@ca.ibm.com  
**Cc:** pajacque@ca.ibm.com; mjroy@ca.ibm.com  
**Subject:** Question from Michel

Hello Thom.

Regarding the following questions from Michel Roy:  
On the self-Assement Questionnaire you have mentioned; No permit are required by your facility. I need a written confirmation from your company, As per your state regulations (EPA), if it's necessary or not to have a permit for that type of process.

Also, I verified with Patrick Jacques and the residue are ; Tin/lead with Flux with low concentration.

Concerning Treatment or elimination of IBM waste by your supplier (You Plant) in Durham, Ct.

Did a permit is requested by the state regulations (EPA)?

It's considered an hazardous waste by EPA?

What is the services provided (Durham) with our waste? Reuse, Recycle, or sent to an other supplier for disposal. If is the case, I need to have the name, address, Phone and services provided

Please do not hesitate to contact me if you have any questions or concerns.

I just want to inform you that we need a quick answer for those question, because we are not able to sent you anymore boat before that Michel was consider this dossier closed. So, please make sure that you will put the maximum effort to close the loop whit Michel.

Gaétan Pépin  
SERVICE DES ACHATS/Purchasing Dept.  
Acheteur d'équipement/Equipment procurement  
tél: (450) 534-6552  
fax: (450) 534-6932  
e-mail: gpépin@ca.ibm.com