

Modification of Maximum Achievable Control Technology (MACT) Determination  
issued on February 24, 1998, Permit Number 0950252-005-AC  
Leisure Bay Industries  
Billiard Table and Spa Manufacturing Facility  
Orange County

Pursuant to a request from Leisure Bay Industries, the MACT Determination is changed as follows:

**FROM:**

**MACT Determination**

Based on the information presented by the applicant and the studies conducted, the Hyrizon Hybrid Foam Resin System has been determined to be MACT, and shall be used to control styrene emissions in the four spray booths.

The total Hyrizon Hybrid Foam Resin System usage shall not exceed 35.5 tons in any 40-hour production period and 1,729.6 tons in any 12-month period. Prior to mixing the Hyrizon Hybrid Foam Resin System, the styrene content of Hyrizon HB-1 (resin) shall not exceed 28.5% by weight. After the Hyrizon Hybrid Foam Resin System is mixed, prior to spraying, the styrene content of the Hyrizon Hybrid Foam Resin System shall not exceed 9.94% by weight. The components of the system shall not exceed the limits listed in

Table 1.

Table 1

<u>Component</u>	<u>Lbs. component/100 lbs. system</u>	<u>Lbs. styrene/lbs. component</u>
Hyrizon HA-1 (MDI)	18.4± 5.0 percent	0
Luperco ATC catalyst	0.60± 5.0 percent	0
Esperox 570 catalyst	0.30± 5.0 percent	0
Hyrizon HB-1 (resin)	34.90 (maximum)	9.94 (maximum)
Inert filler - 1 (CaCO <sub>3</sub> )	45.40± 5.0 percent	0
Inert filler - 2 (carbon black)	0.30± 5.0 percent	0
Inert filler - 3 (ceramic powder)	0.10± 5.0 percent	0
Total	100.00	9.94

The total styrene emitted in any 12-month period shall not exceed 27.2 tons.

The total pounds of styrene emitted per ton of resin used (Hyrizon HB-1) are not expected to exceed 90.

**TO:**  
MACT Determination

Based on the information presented by the applicant and the studies conducted, the Hyrizon Hybrid Foam Resin System has been determined to be MACT, and shall be used to control styrene emissions in the four spray booths.

The total Hyrizon Hybrid Foam Resin System usage shall not exceed 1,729.6 tons in any 12-month period. Prior to mixing the Hyrizon Hybrid Foam Resin System, the styrene content of Hyrizon HB-1 (resin) shall not exceed 28.5% by weight. After the Hyrizon Hybrid Foam Resin System is mixed, prior to spraying, the styrene content of the Hyrizon Hybrid Foam Resin System shall not exceed 10.09% by weight. The components of the system shall not exceed the limits listed in Table 1.

Table 1


<u>Component</u>	<u>Lbs. component/100 lbs. system</u>	<u>Lbs. styrene/lbs. component</u>
Hyrizon HA-1 (MDI)	18.3± 5.0 percent	0
Luperco ATC catalyst	0.59± 5.0 percent	0
Esperox 570 catalyst	0.33± 5.0 percent	0
Hyrizon HB-1 (resin)	35.4 ± 2.5 percent	10.09± 2.5 percent
Inert filler - 1 (CaCO <sub>3</sub> )	44.98± 5.0 percent	0
Inert filler - 2 (carbon black)	0.31± 5.0 percent	0
Inert filler - 3 (ceramic powder)	0.09± 5.0 percent	0
Total	100.00	10.09± 2.5 percent

The total styrene emitted in any 12-month period shall not exceed 27.2 tons.  
 The total pounds of styrene emitted per ton of resin used (Hyrizon HB-1) are not expected to exceed 90.  
 This modification must be attached to the original and becomes part of that MACT Determination.

Details of the Analysis may be Obtained by Contacting:


Cindy Phillips  
 Bureau of Air Regulation MS 5505  
 Department of Environmental Protection  
 2600 Blair Stone Road  
 Tallahassee, Florida 32399-2400

Recommended by:

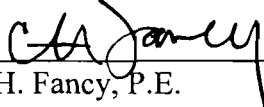
  
 Cindy L. Phillips, P.E.  
 Air Toxics/Title III Section  
 Bureau of Air Regulation

9/8/99  
 Date

Approved by:

  
 Howard L. Rhodes, Director  
 Division of Air Resources  
 Management

9/9/99  
 Date

  
 C. H. Fancy, P.E.  
 Chief  
 Bureau of Air Regulation

9/8/99  
 Date

**Best Available Copy**

# Environmental Science & Engineering, Inc.

A MACTEC COMPANY

June 15, 1999

Mr. Alan Zahm, PE  
Permitting Supervisor  
FDEP, Central District  
3319 Maguire Boulevard, Suite 232  
Orlando, Florida 32803-3767

Re: **Additional Information for Operating Permit Application – Leisure Bay  
Manufacturing, Inc. (0950252-006-AV)**

Dear Mr. Zahm:

As requested in your "completeness summary" letter of April 21, 1999, the attached information is provided to demonstrate compliance with specific conditions 2, 3, 7, 8, 9, 13, 14, 15, and 16 of the above referenced permit.

Attached to this letter you will find the following information from the period beginning January 1, 1999:

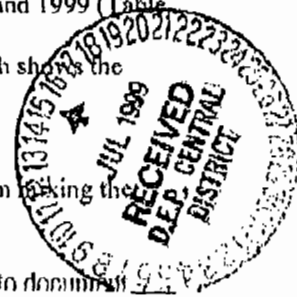
- A summary of material usage and mixing log information for 1998 and 1999 (Table 1),
- Material Safety Data Sheets for the Hyrizon HB-1 component, which show the styrene content
- Styrene emission calculations from the 1998 AOR,
- Visible Emissions test results, and
- Examples of the Hyrizon mixing logs that are filled out by the person taking the Hyrizon.

The enclosed diskette contains an Excel spreadsheet that Leisure Bay maintains to document compliance with the permit conditions. The spreadsheet includes production and operating information, mixing logs, material usage, and emissions data. Because some of the tables are quite long, they are more conveniently viewed on-screen rather than in hard copy.

Specific Condition 3 specifies the composition of the Hyrizon mixture that is applied to the formed spa shells. The percentages of each component listed in the permit are reflective of the formula specified by Aristech, the company who licenses the Hyrizon process.

Table 1, attached, summarizes the quantities of each component mixed and used over approximately 11 months of spa production. The mixing log data represents a reduction of all the data contained in the mixing logs. The usage data represents values from analysis of weekly beginning and ending material inventories.

The Hyrizon process consists of an A side (a mixture of Hyrizon HA-1, Luperox 50, and Luperox 575), and a B side (a mixture of Hyrizon HB-1, Polycar 9, calcium carbonate, carbon black, and ceramic powder). Each side is mixed as a batch and is held in day tanks, where it is sent to the application gun that mixes it at a ratio of 4.2 pounds of B-side per pound of A-side.



The various components of the Hyrizon system come in prepackaged unit sizes. Leisure Bay requested a mixing "recipe" from Aristech that would allow use of whole packaging units that are available in the Orlando area to simplify the mixing process. Aristech provided the formula that is shown in Table 2, attached. As you can see from the table, the percentages of all the components, except the HB-1 component, are within the limits specified in the permit. HB-1 constitutes 35.4% by weight of the applied mixture, which slightly exceeds the permit limit of 34.9%.

The mixing log and usage log data (Table 1) show similar values, with all components except the HB-1 within the permit limits. The mixing and usage log data includes material that is disposed of, and thus does not exactly match the "recipe".

Leisure Bay is requesting that condition 3 in the operating permit be slightly modified to increase the allowed percentage of HB-1 to the "recipe" value of 35.4%, with an allowed variance of 2.5%.

Should you have any questions concerning this matter, please do not hesitate to contact me at (352) 333-6618. Please also note that our firm's name is once again Environmental Science & Engineering, Inc. Our address and phone numbers will remain as before. I have enclosed updated business cards for myself and Daniel Hlaing.

Sincerely,

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

  
John Kuhn  
Project Manager

attachments

cc: Colin Talley, Leisure Bay

**Table 1. Compliance with Mixing Requirements**

	amounts in pounds			wt % allowed wt %	
	1998	1999	total		
<b>Mixing Log Data</b>					
Hyrizon HA-1	54750	83750	138500	16.31	18.4 +/- 5
Luperox 50	1688	2680	4368	0.51	0.6 +/- 5
Luperox 575	954	1507.5	2461.5	0.29	0.3 +/- 5
Hyrizon HB-1	158500	150000	308500	36.33	34.9 max
Polycat 9	634	600	1234	0.15	no limit
Calcium Carbonate	200600	190000	390600	46.00	45.4 +/- 5
Carbon Black	1377	1300	2677	0.32	0.3 +/- 5
Ceramic Powder	416	400	816	0.10	0.1 +/- 5
				<i>OK</i>	
<b>Usage Data</b>					
Hyrizon HA-1	110417.99	105111.37	215529.36	19.02	18.4 +/- 5
Luperox 50	3629.5	3588.07	7217.57	0.64	0.6 +/- 5
Luperox 575	2018.25	1792.41	3810.66	0.34	0.3 +/- 5
Hyrizon HB-1	201945.75	210586.09	412531.84	36.41	34.9 max
Polycat 9	1258.85	766.8	2025.65	0.18	no limit
Calcium Carbonate	253520.8	231970.01	485490.81	42.85	45.4 +/- 5
Carbon Black	1954.9	1740.47	3695.37	0.33	0.3 +/- 5
Ceramic Powder	1397.3	1301.376	2698.676	0.24	0.1 +/- 5

*Does Not Satisfy Specific Condition #13*

To: LENNON  
Anderson

**Table 2. Theoretical Composition of Hyrizon**

Mix = 4.2 lb B side + 1 lb A side

	wt/batch (lb)	wt/5.2 lb (lb)	wt % applied
<b>A side mixture</b>			
HA-1	2500	0.9524	18.315
Luperco 50	80	0.0305	0.586
Luperco 575	45	0.0171	0.330
<b>B side mixture</b>			
HB-1	1500	1.8405	35.394
Polycat 9	6	0.0074	0.142
Calcium carbonate	1900	2.3313	44.832
carbon black	13	0.0160	0.307
ceramic powder	4	0.0049	0.094

With this formulation, the styrene content as applied would be 10.09%, a slight increase over the 9.94% in the permit.

LENNON - my firm changed its name back to ESS.  
Here is my new card with new email address.

*John*



**Environmental Science & Engineering, Inc.**  
A MACTEC COMPANY

**John B. Kuhn**

*Project Engineer - Modeling and Permitting*

352.332.3318 Ext 6618, Direct 352.333.5618

Fax 352.333.0631

P. O. Box 1708, Gainesville, FL 32602-1708

Shipping: 404 SW 140th Terrace, Newberry, FL 32669-3090

E-MAIL: jbkuhn@esemall.com www.eseworld.com



# Department of Environmental Protection

RECEIVED

APR 23 1999

BUREAU OF  
AIR REGULATION

Jeb Bush  
Governor  
CERTIFIED MAIL  
P 183 853 494

Central District  
3319 Maguire Boulevard, Suite 232  
Orlando, Florida 32803-3767

David B. Struhs  
Secretary

## AIR RESOURCES COMPLETENESS REVIEW

**SOURCE NAME:** Billiard Table and Spa Manufacturer  
**APPLICANT:** Gary Harder,  
Vice President of Manufacturing  
**DATE RECEIVED:** 11/30/98  
**DATE REVIEWED:** 01/15/99

**ADDRESS:** Leisure Bay Manufacturing, Inc.  
3033 Mercy Drive  
Orlando, Florida 32808  
**FILE:** 0950252-006-AV

Your application for this project has been received and reviewed for completeness. The following items are needed to complete your application.

1. Provide documentation showing compliance with the 35.5 ton per 40 hour time period limit per specific condition #2a. of the construction permit.
2. Provide documentation showing compliance with the 1729.6 ton per twelve month limit per specific condition #2b. of the construction permit.
3. Provide documentation showing compliance with the component restrictions of the Hyrizon Hybrid Roam Resin System per specific condition #3 of the construction permit.
4. Provide documentation showing compliance with the 28.5 percent styrene restriction of the Hyrizon Hybrid Roam Resin System per specific condition #7 of the construction permit.
5. Provide documentation showing compliance with the 27.2 ton per year styrene limit of the Hyrizon Hybrid Roam Resin System per specific condition #8 of the construction permit.
6. Provide documentation showing compliance with the visible emission test for each particulate source per specific condition #9 of the construction permit.
7. Provide documentation showing compliance with the daily log of the production hours per specific condition #13 of the construction permit.
8. Provide documentation showing compliance with the styrene concentration of each shipment of Hyrizon Hybrid Foam Resin per specific condition #14 of the construction permit.

Leisure Bay Manufacturing, Inc.

FILE: 0950252-006-AV

page two

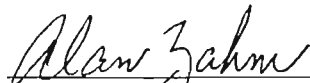
9. Provide documentation showing compliance with daily log of the batch mixing of the Hyrizon Hybrid Foam Resin per specific condition #15 of the construction permit.

10. Provide documentation showing compliance with the 40 hour totals, the monthly totals, and the twelve month totals of the Hyrizon Hybrid Foam Resin per specific condition #16 of the construction permit.

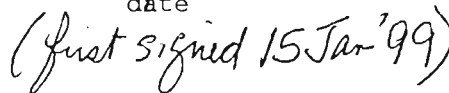
Pursuant to Rule 62-4.055, the applicant shall have ninety days after the Department mails a timely request for additional information to submit that information to the Department. If an applicant requires more than ninety days in which to respond to a request for additional information, the applicant may notify the Department in writing of the circumstances, at which time the application shall be held in active status for one additional period of up to ninety days. Additional extensions shall be granted for good cause shown by the applicant. A showing that the applicant is making a diligent effort to obtain the requested additional information shall constitute good cause. Failure of an applicant to provide the timely requested information by the applicable deadline shall result in denial of the application.

If you have any questions, please fax me at 407/897-5963 or write to me at the above address.

Sincerely,

  
\_\_\_\_\_  
Alan D. Zahn, P.E.  
Permitting Supervisor

  
\_\_\_\_\_  
date



AZ/az

cc:D. N. Hlaing, PE

Cindy Phillips, DARM