

ORIGINAL



UNITED STATES OF AMERICA  
BEFORE THE FEDERAL TRADE COMMISSION

COMMISSIONERS: William E. Kovacic, Chairman  
Pamela Jones Harbour  
Jon Leibowitz  
J. Thomas Rosch

\_\_\_\_\_  
In the Matter of \_\_\_\_\_  
Polypore International, Inc., \_\_\_\_\_  
A corporation. \_\_\_\_\_

Docket No. 9327  
Public

THE MOORE COMPANY'S MOTION FOR *IN CAMERA* TREATMENT OF  
DOCUMENTS DESIGNATED BY  
RESPONDENT POLYPORE INTERNATIONAL, INC.

Non-Party The Moore Company moves, pursuant to Federal Trade Commission ("FTC") Rule 3.45(b) of the FTC's Rules of Practice, 16 C.F.R. § 3.45(b), for an order allowing *in camera* treatment of certain documents designated by Respondent Polypore International, Inc ("Polypore") as proposed trial exhibits (the "Designated Documents"). A table setting forth the Designated Documents is attached hereto as Exhibit A. In support of this motion, The Moore Company refers to the accompanying Declaration of Guy Dauwe ("Dauwe Decl.").

I. Procedural Background

Complaint Counsel and Respondent Polypore have made numerous discovery requests of The Moore Company relating to The Moore Company's subsidiary Amer-Sil's battery separator business. The Moore Company designated those non-public, commercially-sensitive materials it produced in response to the discovery requests as "Confidential" in accordance with 15 U.S.C. § 46(f) and 16 C.F.R. § 4.10(a)(2). The Moore Company also produced materials pursuant to the

Protective Order Governing Discovery Material that was entered by the Court on October 23, 2008.

By letter dated March 27, 2009, Polypore informed The Moore Company that it intended to introduce evidence containing “Confidential Material” as that term is defined in the Protective Order. See Letter from Eric Welsh dated March 27, 2009, attached hereto as Exhibit B.

Contrary to the requirements of the Protective Order,<sup>1</sup> Polypore did not specifically identify which documents or records it intended to use at trial; instead, Polypore’s letter merely stated that the Confidential Material “may be in the form of documents The Moore Company has produced to Polypore’s Counsel, documents The Moore Company has produced to the Federal Trade Commission, documents used in depositions of The Moore Company’s witnesses, and/or the deposition testimony or transcripts of The Moore Company’s witnesses.” Id.

On April 9, 2009, given the uncertainty as to the specific documents Polypore intended to use at trial, The Moore Company filed a Motion For Extension of Time to Seek *In Camera* Treatment of the documents designated by Polypore. By Order dated April 14, 2009, this Court granted The Moore Company’s Motion For Extension of Time to Seek *In Camera* Treatment, and directed Polypore to inform The Moore Company by April 17, 2009, with specificity, which documents it intended to introduce at trial. The Moore Company was directed to file its motion for *in camera* treatment for such documents, not including affidavits, by April 24, 2009 -- one week after Polypore was required to make its specific designations.

On April 17, 2009, Polypore provided The Moore Company with “a list identifying evidence” Polypore “may introduce at the May 12, 2009 hearing” in this matter. See Letter from Eric Welsh dated April 17, 2009, attached hereto as Exhibit C. According to Polypore’s letter,

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<sup>1</sup> The Protective Order states that counsel who plans to introduce into evidence at a hearing any document containing Confidential Material produced by a third party is required to provide 10 days notice to the third party for purposes of allowing that party to seek *in camera* treatment of such documents. See Protective Order, paragraph 12.

this list specified “The Moore Company’s documents and witness testimony which Polypore intends to introduce at trial” . . . “subject to information learned during the April 23, 2009 deposition of Mr. Guy Dauwe.” Id. Polypore’s list identified over 160 individual Bates ranges of documents, consisting of approximately 1566 pages of evidence. The sheer volume of documents designated by Polypore rendered it impossible for The Moore Company to comply with the one-week deadline for seeking *in camera* treatment, in part due to the strict standards governing *in camera* applications and the level of detail and specificity required to support such applications. See, e.g., In re Hoechst Marion Roussel, Inc., 2000 FTC LEXIS 138 (Sept. 19, 2000).

On April 23, 2009, Complaint counsel and counsel for Polypore deposed Guy Dauwe, the Managing Director of Amer-Sil, in Washington, D.C. At the close of Mr. Dauwe’s deposition (approximately 3:00 pm), counsel for The Moore Company was informed by Polypore’s counsel that it had narrowed its proposed trial designations. On April 24, 2009, The Moore Company filed a motion for an extension of time to seek *in camera* treatment of the documents designated by Polypore on April 23, 2009. On April 28, 2009, the Court granted the motion in part, and set a deadline of May 1, 2009 for The Moore Company to file this motion for *in camera* treatment.

## **II. Legal Standard**

16 C.F.R. § 3.45(b) provides that documents shall be placed *in camera* “after finding that its public disclosure will likely result in a clearly defined, serious injury to the person, partnership, or corporation requesting in camera treatment.” An applicant for *in camera* treatment bears the burden of demonstrating that public disclosure will result in a clearly defined,

serious injury. See H.P. Hood & Sons, Inc., 58 F.T.C. 1184, 1188, 1961 FTC LEXIS 368, \*10-11 (1961).

Demonstrating serious injury requires the applicant to show “that the documents are secret, that they are material to the applicant’s business and that public disclosure will plausibly discourage the future production of such information.” In the Matter of Bristol-Myers Company, 90 F.T.C. 455, 456, 1977 FTC LEXIS 25, \*4-5 (1977). “The likely loss of business advantages is a good example of a ‘clearly defined, serious injury.’” In re Hoechst Marion Roussel, Inc., 2000 FTC LEXIS 138, \*6 (Sept. 19, 2000) (quoting In the Matter of General Foods Corp., 95 F.T.C. 352, 355 (1980)). In order to sustain this burden of proof, an application for *in camera* treatment must be supported by proper evidence, such as affidavits, to support all factual issues or assertions. See id. \*4.

The following factors are weighed in considering both secrecy and materiality: (1) the extent to which the information is known outside of the applicant’s business; (2) the extent to which the information is known by employees and others involved in the applicant’s business; (3) the extent of measures taken by the applicant to guard the secrecy of the information; (4) the value of the information to the applicant and to the applicant’s competitors; (5) the amount of effort or money expended by the applicant in developing the information; (6) the ease or difficulty with which the information could be properly acquired or duplicated by others. See In the Matter of Bristol-Myers Company, 90 F.T.C. at 456, 1977 FTC LEXIS 25, \*5 (citing Restatement of Torts § 757, Comment b at 6 (1939)).

An application for *in camera* treatment that is submitted by a third-party should be given “special solicitude,” because such treatment encourages third-party cooperation in future proceedings. See In the Matter of Kaiser Aluminum & Chemical Corporation, 103 F.T.C. 500,



1984 FTC LEXIS 60, at \*2-3 (1984) (“Moreover, as third parties, the requests of these companies deserve special solicitude. As a policy matter, extensions of confidential or in camera treatment in appropriate cases involving third party bystanders encourages cooperation with future adjudicative discovery requests.”); see also The Crown Cork & Seal Company, Inc., 71 F.T.C. 1714; 1967 FTC LEXIS 128, at \*2 (1967) (“Here, on the other hand, petitioner’s plea warrants special solicitude coming as it does from a third party bystander in no way involved in the proceedings whose records, if in camera treatment is denied, will be open to the scrutiny of its competitors including respondent herein.”).

### **III. Argument**

The Designated Documents should be afforded *in camera* treatment because The Moore Company, a nonparty, will suffer a clearly defined, serious injury if the documents are publicly disclosed. Specifically, the Designated Documents contain information that is both secret and material to The Moore Company’s business. Public disclosure would cause great competitive harm to The Moore Company, and this risk of harm is not outweighed by the significance of the information to the present proceeding.

The Designated Documents contain information that is highly confidential and not disclosed outside of Amer-Sil, except insofar as it may be shared confidentially with Amer-Sil’s business partners, usually in the context of non-disclosure agreements. Dauwe Decl. ¶ 6. It is distributed within the company only to those who have a specific need for the information. Id. Amer-Sil maintains all of its records in a locked facility. Id. It does not permit tours of the facility or permit access to any part of the facility where confidential business records are stored, or confidential manufacturing processes take place. Id. Those employees who receive the information typically do so only upon entering into confidentiality agreements that prohibit them

from disclosing the information to others. Id. Amer-Sil guards the confidentiality of this information because of its value to the Company's ongoing business, as well as to its competitors. Id. The information is the product of a significant investment of time and resources, and could not be acquired or duplicated by others in the absence of a similar expenditure of time and resources, if it could be duplicated at all. Id. Additionally, Amer-Sil, and by extension The Moore Company, has sought legal advice and incurred substantial cost to protect the confidentiality of the Designated Documents. Id.

As discussed more fully in the Declaration of Guy Dauwe, The Moore Company seeks *in camera* treatment for the following types of documents:

1. Product Development Information: Several of the Designated Documents contain highly sensitive information related to future Amer-Sil product offerings. See Dauwe Decl. ¶ 8. The confidentiality of this information is critical to Amer-Sil's commercial viability and competitiveness. Id. Amer-Sil has invested and continues to invest hundreds of thousands of dollars in its ongoing efforts to develop new products. Id. It has also invested substantial amounts of money in developing its relationships with its clients and its knowledge of their unique needs. Id. Public disclosure is certain to cause substantial harm to Amer-Sil's business interests because of the advantage that disclosure would provide to Amer-Sil's competitors. Id. Amer-Sil prides itself on its unique process of manufacturing battery separators. Id. Amer-Sil is unaware of any other company in the world that uses the same process or a similar process as Amer-Sil. Id. Amer-Sil believes that its unique process gives its separators a competitive edge. Id.

Amer-Sil is highly protective of the secrecy surrounding its manufacturing process. Id. No published literature or other publicly-available printed materials on this process exist (other

than non-specific information contained in a patent, which does not reveal any confidential or proprietary information). Id. All such information is highly confidential. Id. ¶¶ 6, 8.

Innovations in the design of Amer-Sil's products are a crucial part of Amer-Sil's competitive advantage over its competitors. Id. ¶ 8. Several of these documents are protected by nondisclosure agreements, as more fully described in Mr. Dauwe's Declaration. Id. ¶ 8.

Because these documents contain information that is critical to Amer-Sil's long-term product development and marketing strategies, The Moore Company requests that the documents be afforded *in camera* treatment for three to ten years, as indicated in Exhibit A. See In the Matter of Evanston Northwestern Healthcare Corp., 2005 FTC LEXIS 38, at \*19-21 (2005) (granting *in camera* treatment for ten years for non-party's business development and strategy documents). Any shorter periods of time would risk substantial commercial and competitive harm to Amer-Sil. Dauwe Decl. ¶ 8.

2. Product Marketing, Customer, and Sales Strategy Information: These documents contain marketing strategy and product development information, including sales strategy, pricing information, prospective customers, and current customers. Dauwe Decl. ¶ 9. This information was assembled at considerable time and expense, and represents a core business asset. Id. Public disclosure of this information would damage Amer-Sil's competitive position because it would provide Amer-Sil's competitors with information regarding Amer-Sil's marketing strategy and product development. Id. Disclosure may also enable customers to gain bargaining leverage over Amer-Sil. Id. Information in this category should be protected for three to ten years, as indicated in Exhibit A, as any shorter periods of time would risk substantial commercial and competitive harm to Amer-Sil. Id.

3. Category 3: Pricing Information. These documents provide information relating to Amer-Sil's product sales ordered by country and individual customer. Dauwe Decl. ¶ 10. Public disclosure of this information would damage Amer-Sil's competitive position, because it would provide Amer-Sil's competitors with information regarding the prices charged by Amer-Sil for specific products sold to specific customers. Id. Amer-Sil's price terms are individually negotiated with each of its customers, taking into account a host of factors that are unique to each customer relationship. Id. In addition, the sales volume information reflected in these documents could be used by competitors of Amer-Sil by revealing where Amer-Sil generates its sales revenue. All of this information is confidential and competitively sensitive. Id. Amer-Sil would suffer substantial competitive harm if it were made part of the public record in this matter. Id. Additionally, the pricing information contained in Exhibits RX1606-08, as well as RX1615 is protected by a nondisclosure agreement. Id. Additionally, some of this information is protected by nondisclosure agreements. Id. This information should be protected for three to five years, as Exhibit A, as any shorter periods of time would risk substantial commercial and competitive harm to Amer-Sil. Id.

As detailed in his Declaration, Mr. Dauwe personally reviewed all of the Designated Documents and determined the length of time for which *in camera* treatment is appropriate based on his assessment of the harm that The Moore Company would suffer if the Designated Documents were publicly disclosed. Dauwe Decl. ¶ 11. Based on that review, The Moore Company has indicated the minimum lengths of time for which the documents should be afforded *in camera* treatment. Id. ¶ 12.

Because it discusses the above listed documents in great detail and specifically as to why they are deserving of *in camera* treatment, the Declaration of Guy Dauwe should also be

afforded *in camera* treatment for a period of ten years, which is the longest period of time for which *in camera* treatment is sought for any document discussed therein.

WHEREFORE, The Moore Company respectfully requests that (1) *in camera* status be granted for the time frames above those documents or portions of documents identified in Exhibit A, and (2) *in camera* status be granted for a period of ten years to the Declaration of Guy Dauwe and its accompanying exhibits.

Respectfully submitted,

THE MOORE COMPANY  
By its attorneys,



Michael J. Connolly  
Laura B. Angelini  
HINCKLEY, ALLEN & SNYDER LLP  
28 State Street  
Boston, Massachusetts 02109-1775  
(617) 345-9000

Dated: May 1, 2009

**CERTIFICATE OF SERVICE**

I hereby certify that on May 1, 2009, I caused a copy of this document to be served upon the following persons via first class mail, postage pre-paid:

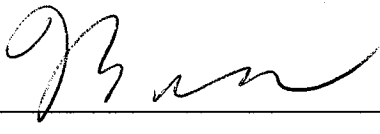
Eric D. Welsh, Esq. [**first-class mail and email**]  
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Three Wachovia Center, Suite 3000  
401 South Tryon Street  
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(704) 372-9000

J. Robert Robertson, Esq. [**first-class mail and email**]  
Federal Trade Commission  
600 Pennsylvania Avenue, NW  
Washington, D.C. 20580

Steven Dahm, Esq. [**first class mail and email**]  
Federal Trade Commission  
600 Pennsylvania Avenue, NW  
Washington, D.C. 20580

Administrative Law Judge D. Michael Chappell [**two by first class mail and by email**]  
Federal Trade Commission  
600 Pennsylvania Avenue, NW, Room H-106  
Washington, DC 20580

Donald S. Clark [**original and two copies**]  
Secretary of the Federal Trade Commission  
600 Pennsylvania Avenue, NW, Room H-135  
Washington, DC 20580

TFM  \_\_\_\_\_

**UNITED STATES OF AMERICA  
BEFORE THE FEDERAL TRADE COMMISSION**

**COMMISSIONERS:**      **William E. Kovacic, Chairman**  
                                 **Pamela Jones Harbour**  
                                 **Jon Leibowitz**  
                                 **J. Thomas Rosch**

In the Matter of	)	
	)	
Polypore International, Inc.,	)	Docket No. 9327
	)	Public
A corporation.	)	
	)	

**ORDER**

Upon consideration of The Moore Company's motion for in camera treatment of certain hearing exhibits designated by Polypore International, Inc., it is hereby ordered that the motion is GRANTED, and the documents identified on Exhibit A of The Moore Company's motion, which is attached hereto, shall be afforded in camera treatment pursuant to Rule 3.45(b) of the Federal Trade Commission's Rules of Practice, 16 C.F.R. § 3.45(b) for the time periods indicated in Exhibit A to the motion, all time periods commencing from the date of this Order.

ENTER:

\_\_\_\_\_  
Administrative Law Judge D. Michael Chappell

DATE:

# **Exhibit A**



Exhibit A

**CATEGORY I: Product Development Information**

<b>Trial Ex. No.</b>	<b>Portion for which <i>In Camera</i> Treatment is Necessary</b>	<b>Date</b>	<b>Begin Doc. No.</b>	<b>End Doc. No.</b>	<b>Length of <i>In Camera</i> Treatment Requested</b>
RX 1622	Entire document	10/10/08	AM 0037744	AM 0037753	10 years
RX 1624	Entire document	12/08/08	AM 0285044	AM 0285069	10 years
RX 1625	Entire document	2007	AM 0290714	AM 0290714	3 years
RX 1629	Entire document	10/16/08	AM 0037251	AM 0037256	10 years

**CATEGORY II: Product Marketing, Customer, and Sales Strategy Information**

<b>Trial Ex. No.</b>	<b>Portion for which <i>In Camera</i> Treatment is Necessary</b>	<b>Date</b>	<b>Begin Doc. No.</b>	<b>End Doc. No.</b>	<b>Length of <i>In Camera</i> Treatment Requested</b>
RX 1612	Entire document	2007	AM 0150896	AM 0150908	10 years
RX 1613	Entire document	8/23/07	AM 0291731	AM 0291741	10 years

RX 1614	Entire document	3/01/08	AM 0295059	AM 0295085	10 years
RX 1619	Entire document	3/31/08	AM 0288909	AM 0288910	5 years
RX 1620	Entire document	7/02/08	AM 0291633	AM 0291634	10 years
RX 1621	Entire document	8/28/08	AM 0069915	AM 0069924	5 years
RX 1623	Entire document	11/26/08	AM 0286572	AM 0286573	3 years
RX 1628	Entire document	2008	AM 0250964	AM 0250999	10 years

**CATEGORY III: Pricing Information**

<b>Trial Ex. No.</b>	<b>Portion for which <i>In Camera</i> Treatment is Necessary</b>	<b>Date</b>	<b>Begin Doc. No.</b>	<b>End Doc. No.</b>	<b>Length of <i>In Camera</i> Treatment Requested</b>
RX 1606	Entire document	01/01/05 - 3/12/05	AM 0026113	AM 0026116	3 years
RX 1607	Entire document	01/01/06 - 3/12/06	AM 0026117	AM 0026119	3 years
RX 1608	Entire document	01/01/07 - 3/12/07	AM 0026120	AM 0026123	3 years

RX 1609	Entire document	01/01/08 – 12/31/08	AM 0026124	AM 0026124	3 years
RX 1615	Page AM0003791	6/16/07	AM 0003789	AM 003802	5 years

# **Exhibit B**

# PARKER POE

PARKER POE ADAMS & BERNSTEIN LLP

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March 27, 2009

## VIA ELECTRONIC MAIL AND FIRST CLASS MAIL

THE MOORE COMPANY

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Re: In the Matter of Polypore International, Inc.  
Docket No. 9327

Ladies and Gentlemen:

My firm represents Polypore International, Inc. ("Polypore") in connection with a matter pending before the Federal Trade Commission entitled In the Matter of Polypore International, Inc., Docket No. 9327 (the "Matter"). The hearing of this Matter is set to begin on May 12, 2009.

Pursuant to the terms of the Protective Order Governing Discovery Material ("Protective Order") (a copy is enclosed) and Rule 3.45(b) of the Rules of Practice for Adjudicative Proceedings before the United States Federal Trade Commission ("Rule 3.45(b)"), you are hereby notified that Polypore's Counsel intends to introduce evidence containing Confidential Material, as that term is defined in the Protective Order, at the May 12, 2009 hearing of this Matter. The Confidential Material may be in the form of documents The Moore Company has produced to Polypore's Counsel, documents The Moore Company has produced to the Federal Trade Commission, documents used in depositions of The Moore Company's witnesses, and/or the deposition testimony or transcripts of The Moore Company's witnesses.

The Confidential Material introduced into evidence at the hearing of this Matter will continue to be subject to the Protective Order, which safeguards against the use or disclosure of confidential information submitted or produced in connection with this Matter. However, please

CHARLESTON, SC  
COLUMBIA, SC  
MYRTLE BEACH, SC  
RALEIGH, NC  
SPARTANBURG, SC

March 27, 2009  
Page 2

be aware that all exhibits entered into evidence become part of the public record unless *in camera* status is granted by Administrative Law Judge Chappell. Please let this letter serve as formal notice that pursuant to the terms of the Protective Order and Rule 3.45(b), you may obtain *in camera* treatment for such Confidential Material, or any portion thereof, only by appropriate motion to the Administrative Law Judge. If you have any questions regarding the foregoing, please feel free to contact me.

Sincerely yours,

Handwritten signature of Eric D. Welsh, appearing as "E. Welsh / brw".

Eric D. Welsh

EDW/brw

Enclosure

# **Exhibit C**

**PARKER POE**

**PARKER POE ADAMS & BERNSTEIN LLP**

*Attorneys and Counselors at Law*

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April 17, 2009

**VIA ELECTRONIC MAIL AND FIRST CLASS MAIL**

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Re: In the Matter of Polypore International, Inc.  
Docket No. 9327

Ladies and Gentlemen:

Following up on my letter of March 27, 2009, below please find a list identifying evidence Polypore International, Inc. ("Polypore") may introduce at the May 12, 2009 hearing of the above-referenced matter. Subject to information learned during the April 23, 2009 deposition of Mr. Guy Dauwe, this list specifies The Moore Company's documents and witness testimony which Polypore intends to introduce at trial. Please be advised that pursuant to the terms of the Protective Order, Rule 3.45(b), and the April 14, 2009 Order Granting Non-Party The Moore Company's Motion for Extension of Time to Seek *In Camera* Treatment, you may obtain *in camera* treatment for such evidence, or any portion thereof, only by appropriate motion to the Administrative Law Judge. If you have any questions regarding the foregoing, please feel free to contact me.

Sincerely yours,



Eric D. Welsh

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Direct Fax: 704.335.9755  
ericwelsh@parkerpoe.com

Guy Dauwe – Deposition Date 4/23/09	Entire Transcript
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Deposition No.	Exhibit Page No.
AM0001064	AM0001065
AM0001212	AM0001214
AM0001407	AM0001409
AM0001889	AM0001891
AM0003560	AM0003635
AM0003664	AM0003665
AM0003703	AM0003704
AM0003706	AM0003724
AM0003789	AM0003802
AM0003871	AM0003873
AM0003878	AM0003878
AM0004505	AM0004508
AM0004616	AM0004617
AM0004618	AM0004620
AM0004621	AM0004624

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RALEIGH, NC  
SPARTANBURG, SC

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AM0025642	AM0025649
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AM0036471	AM0036477
AM0037251	AM0037256
AM0037298	AM0037303
AM0037744	AM0037753
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AM0291296	AM0291297
AM0291633	AM0291634
AM0292412	AM0292434
AM0292813	AM0292912
AM0293831	AM0293847
AM0293964	AM0293985
AM0295059	AM0295085
AM0296387	AM0296394
AM0296397	AM0296405
AM0296408	AM0296416
AM0296419	AM0296427
AM0296430	AM0296442
AM0296468	AM0296479
AM0296611	AM0296619
AM0296622	AM0296637
AM0296638	AM0296645

AM0296648	AM0296655
AM0296763	AM0296767
AM0297189	AM0297192
AM0297259	AM0297264
AM0297265	AM0297270
AM0297422	AM0297424
AM0301507	AM0301518
AM0301526	AM0301576
AM0302100	AM0302111
AM0303951	AM0303977
AM0304250	AM0304253
AM0304255	AM0304280
AM0316430	AM0316451
AM0324410	AM0324452

EDW/brw



**UNITED STATES OF AMERICA  
FEDERAL TRADE COMMISSION  
OFFICE OF ADMINISTRATIVE LAW JUDGES**

\_\_\_\_\_ )  
**In the Matter of** )

**Polypore International, Inc.** )  
**a corporation.** )  
\_\_\_\_\_ )

**Docket No. 9327**

**PROTECTIVE ORDER GOVERNING DISCOVERY MATERIAL**

For the purpose of protecting the interests of the Parties and Third Parties in the above-captioned matter against improper use and disclosure of confidential information submitted or produced in connection with this Matter:

IT IS HEREBY ORDERED THAT this Protective Order Governing Confidential Material ("Protective Order") shall govern the handling of all Discovery Material, as hereafter defined.

**DEFINITIONS**

For purposes of this Protective Order, the following definitions apply:

1. "Confidential Material" shall mean all Discovery Material that is confidential or proprietary information produced in discovery. Such material is referred to in, and protected by, section 6(f) of the Federal Trade Commission Act, 15 U.S.C. § 46(f); section 21 of the Federal Trade Commission Act, 15 U.S.C. § 57b-2, the FTC Rules of Practice, Sections 4.9, 4.10, 16 C.F.R. §§ 4.9, 4.10; and precedents thereunder. Confidential Material shall include non-public trade secret or other research, development, commercial or financial information, the disclosure of which would likely cause commercial harm to the Producing Party or to Respondent. The

following is a non-exhaustive list of examples of information that likely will qualify for treatment as Confidential Material: strategic plans (involving pricing, marketing, research and development, product road maps, corporate alliances, or mergers and acquisitions) that have not been fully implemented or revealed to the public; trade secrets; customer-specific evaluations or data (e.g., prices, volumes, or revenues); sales contracts; system maps; personnel files and evaluations; information subject to confidentiality or non-disclosure agreements; proprietary technical or engineering information; proprietary financial data or projections; and proprietary consumer, customer, or market research or analyses applicable to current or future market conditions, the disclosure of which could reveal Confidential Material. Discovery Material will not be considered confidential if it is in the public domain.

2. "Document" means the complete original or a true, correct, and complete copy and any non-identical copies of any written or graphic matter, no matter how produced, recorded, stored, or reproduced. "Document" includes, but is not limited to, any writing, letter, envelope, telegraph, e-mail, meeting minute, memorandum, statement, affidavit, declaration, transcript of oral testimony, book, record, survey, map, study, handwritten note, working paper, chart, index, tabulation, graph, drawing, chart, printout, microfilm index, computer readable media or other electronically stored data, appointment book, diary, diary entry, calendar, organizer, desk pad, telephone message slip, note of interview or communication, and any other data compilation from which information can be obtained, and includes all drafts and all copies of such Documents and every writing or record that contains any commentary, notes, or marking whatsoever not appearing on the original.

3. "Discovery Material" includes without limitation deposition testimony, exhibits, interrogatory responses, admissions, affidavits, declarations, Documents, tangible thing or

answers to questions produced pursuant to compulsory process or voluntarily in lieu thereof, and any other Documents or information produced or given to one Party by another Party or by a Third Party in connection with discovery in this Matter. Information taken from Discovery Material that reveals its substance shall also be considered Discovery Material.

4. "Commission" shall refer to the Federal Trade Commission, or any of its employees, agents, attorneys, and all other persons acting on its behalf, excluding persons retained as consultants or experts for purposes of this proceeding.

5. "Polypore" means Polypore International, Inc., and its predecessors, divisions, and subsidiaries, and all persons acting or purporting to act on its behalf.

6. "Respondent" means Polypore.

7. "Party" means the Commission or Polypore.

8. "Third Party" means any natural person, partnership, corporation, association, or other legal entity not named as a Party to this Matter and its employees, directors, officers, attorneys and agents.

9. "Producing Party" means a Party or Third Party that produced or intends to produce Confidential Material to any of the Parties. With respect to Confidential Material of a Third Party that is in the possession, custody or control of the FTC, or has been produced by the FTC in this matter, the Producing Party shall mean the Third Party that originally provided such material to the FTC. The Producing Party shall mean the FTC for purposes of any Document or Discovery Material prepared by, or on behalf of, the FTC.

10. "Matter" means the above captioned matter pending before the Federal Trade Commission, and all subsequent administrative, appellate or other review proceedings related thereto.

## TERMS AND CONDITIONS OF PROTECTIVE ORDER

1. Any Document or portion thereof submitted by Respondent or a Third Party during the Federal Trade Commission ("FTC") investigation preceding this Matter or during the course of proceedings in this Matter that is entitled to confidentiality under the Federal Trade Commission Act, or any regulation, interpretation, or precedent concerning documents in the possession of the Commission, as well as any information taken from any portion of such document, shall be treated as Confidential Material for purposes of this Protective Order. For purposes of this Protective Order, the identity of a Third Party submitting such Confidential Material shall also be treated as Confidential Material where the submitter has requested in writing such confidential treatment.

2. The Parties and any Third Parties, in complying with informal discovery requests, disclosure requirements, discovery demands or formal process in this Matter may designate any responsive document or portion thereof Confidential Material, including documents obtained by them from Third Parties pursuant to discovery or as otherwise obtained.

3. The Parties, in conducting discovery from Third Parties, shall provide to each Third Party a copy of this Protective Order so as to inform each such Third Party of his, her or its rights herein.

4. A designation of confidentiality shall constitute a representation in good faith and after careful determination that the material is not reasonably believed to be already in the public domain and that counsel believes the material so designated constitutes Confidential Material as defined in Paragraph 1 of the Definitions of this Protective Order. All deposition transcripts

shall be treated as Confidential Material.

5. If any Party seeks to challenge the Producing Party's designation of material as Confidential Material, the challenging Party shall notify the Producing Party and all other Parties of the challenge. Such notice shall identify with specificity (*i.e.*, by document control numbers, deposition transcript page and line reference, or other means sufficient to locate easily such materials) the designation being challenged. The Producing Party may preserve its designation by providing the challenging Party and all other Parties a written statement of the reasons for the designation within five (5) business days of receiving notice of the confidentiality challenge. If the Producing Party timely preserves its rights, the Parties shall continue to treat the challenged material as Confidential Materials, absent a written agreement with the Producing Party or order of the Commission providing otherwise.

6. If any conflict regarding a confidentiality designation arises and the Parties and Producing Party involved have failed to resolve the conflict via good-faith negotiations, a Party seeking to disclose Confidential Material or challenging a confidentiality designation may make written application to the hearing officer for relief. The application shall be served on the Producing Party and the other Parties to this Matter, and shall be accompanied by a certification that good-faith negotiations have failed to resolve the outstanding issues. The Producing Party and any other Party shall have five (5) business days after receiving a copy of the motion to respond to the application. While an application is pending, the Parties shall maintain the pre-application status of the Confidential Material. Nothing in this Protective Order shall create a presumption or alter the burden of persuading the hearing officer of the propriety of a requested disclosure or change in designation.

7. The Parties shall not be obligated to challenge the propriety of any designation or treatment of information as Confidential Material and the failure to do so promptly shall not preclude any subsequent objection to such designation or treatment, or any motion seeking permission to disclose such material to Persons not otherwise entitled to access under the terms of this Protective Order. If Confidential Material is produced without the designation attached, the material shall be treated as Confidential from the time the Producing Party advises Complaint Counsel and Respondent's Counsel in writing that such material should be so designated and provides all the Parties with an appropriately labeled replacement. The Parties shall return promptly or destroy the unmarked materials.

8. Material produced in this Matter may be designated as confidential by placing on or affixing to the document containing such material (in such manner as will not interfere with the legibility thereof), or if an entire folder or box of documents is confidential by placing or affixing to that folder or box, the designation "CONFIDENTIAL-FTC Docket No. 9327" or any other appropriate notice that considered to be confidential material. Confidential information contained in electronic documents may also be designated as confidential by placing the designation "CONFIDENTIAL-FTC Docket No. 9327" or any other appropriate notice that identifies this proceeding, on the face of the CD or DVD or other medium on which the document is produced. The foregoing designation of "CONFIDENTIAL-FTC Docket No. 9327" shall not be required for confidentiality to apply to documents and information previously produced voluntarily or pursuant to a Civil Investigative Demand or subpoena during the investigational phase preceding this Matter for which confidential treatment was requested. Masked or otherwise redacted copies of documents may be produced where the portions deleted

contain privileged matter, provided that the copy produced shall indicate at the appropriate point that portions have been deleted and the reasons therefor.

9. Confidential Material shall be disclosed only to: (a) the Administrative Law Judge presiding over this proceeding, personnel assisting the Administrative Law Judge, the Commission and its employees, and personnel retained by the commission as experts or consultants for this proceeding, (b) judges and other court personnel of any court having jurisdiction over any appellate proceedings involving this matter, (c) court reporters in this matter, (d) outside counsel of record for Respondent, its associated attorneys and other employees of its law firm(s), provided they are not employees of Respondent, (e) Michael Shor, Polypore Special Counsel, (f) anyone retained to assist outside counsel in the preparation of hearing of this proceeding including consultants, provided they are not affiliated in any way with Respondent and have signed Exhibit A hereto, (g) any witness or deponent who may have authored or received the information in question; (h) any individual who was in the direct chain of supervision of the author at the time the Discovery Material was created or received, except that this provision does not permit disclosure of Industrial Growth partner or Warburg Pincus International documents to Polypore or former Microporous personnel who would not otherwise have had access to the Discovery Material; (i) any employee or agent of the entity that created or received the Discovery Material; (j) anyone representing the author or recipient of the Discovery Material in this Matter; and (k) any other Person(s) authorized in writing by the Producing Party.

10. Disclosure of confidential material to any person described in Paragraph 9 of this Protective Order shall be only for the purposes of the preparation and hearing of this Matter, or any appeal therefrom, and for no other purpose whatsoever; provided, however, that the

Commission may, subject to taking appropriate steps to preserve the confidentiality of such material, use or disclose confidential materials as provided by its Rules of Practice; Sections 6(f) and 21 of the Federal Trade Commission Act; or any other legal obligation imposed upon the Commission.

11. In the event that any Confidential Material is contained in any pleading, motion exhibit or other paper filed or to be filed with the Secretary of the Commission, the Secretary shall be so informed by the Party filing such papers, and such papers shall be filed under seal. To the extent that such material was originally submitted by a Third Party, the Party including the Materials in its papers shall immediately notify the submitter of such inclusion. Confidential Material contained in the papers shall remain under seal until further order of the Administrative Law Judge; provided, however, that such papers may be furnished to persons or entities who may receive Confidential Material pursuant to Paragraphs 9 or 10. Upon or after filing any paper containing Confidential Material, the filing party shall file on the public record a duplicate copy of the paper that does not reveal confidential material. Further, if the protection of any such material expires, a Party may file on the public record a duplicate copy which also contains the formerly protected material.

12. If counsel plans to introduce into evidence at the hearing any document or transcript containing Confidential Material produced by another Party or by a Third Party, they shall provide ten (10) days advance notice to the other Party or Third Party for purposes of allowing that Party or Third Party to seek an order that the document or transcript be granted in camera treatment. If that Party or Third Party wishes in camera treatment for the document or transcript, the Party or Third Party shall file an appropriate motion with the Administrative Law



Judge. Where in camera treatment is granted, a duplicate copy of such document or transcript with the Confidential Material deleted therefrom may be placed on the public record.

13. If any Party receives a discovery request in another proceeding that may require the disclosure of Confidential Material submitted by another Party or Third Party, the recipient of the discovery request shall promptly notify the submitter of receipt of such request. Unless a shorter time is mandated by an order of a court, such notification shall be in writing and be received by the submitter at least 10 business days before production, and shall include a copy of this Protective Order and a cover letter that will apprise the submitter of its rights hereunder. Nothing herein shall be construed as requiring the recipient of the discovery request or anyone else covered by this Order to challenge or appeal any order requiring production of Confidential Material, to subject itself to any penalties for non-compliance with any such order, or to seek any relief from the Administrative Law Judge or the Commission. The recipient shall not oppose the submitter's efforts to challenge the disclosure of confidential material. In addition, nothing herein shall limit the applicability of Rule 4.11(e) of the Commission's Rules of Practice, 16 C.F.R. §4.11(e), to discovery requests in another proceeding that are directed to the Commission.


14. At the time that any consultant or other person retained to assist counsel in the preparation of this action concludes participation in the action, such person shall return to counsel all copies of documents or portions thereof designated confidential that are in the possession of such person, together with all notes, memoranda or other papers containing judicial review, the parties shall return documents obtained in this action to their submitters, provided, however, that the Commission's obligation to return documents shall be governed by the provisions of Rule 4.12 of the Rules of Practice, 16 C.F.R. §4.12.

15. The inadvertent production or disclosure of any Discovery Material, which a Producing Party claims should not have been produced or disclosed because of a privilege, will not be deemed to be a waiver of any privilege to which the Producing Party would have been entitled had the privileged Discovery Material not inadvertently been produced or disclosed. The inadvertent production of a privileged document shall not in itself be deemed a waiver of any privileged applicable to any other documents relating to the subject matter.

16. This Protective Order shall not apply to the disclosure by a Producing Party or its counsel of its own Confidential Material.

17. The provisions of this Protective Order, insofar as they restrict the communication and use of confidential discovery material, shall, without written permission of the submitter or further order of the Commission, continue to be binding after the conclusion of this proceeding.

ORDERED:

  
D. Michael Chappell  
Administrative Law Judge

Date: October 23, 2008

**EXHIBIT A  
UNITED STATES OF AMERICA  
FEDERAL TRADE COMMISSION  
OFFICE OF ADMINISTRATIVE LAW JUDGES**

In the Matter of  Polypore International, Inc. a corporation.	) ) ) ) ) )	Docket No. 9327
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**DECLARATION CONCERNING PROTECTIVE ORDER  
GOVERNING DISCOVERY MATERIAL**

I, \_\_\_\_\_, hereby declare and certify the following to be true:

1. [Statement of employment]

2. I have read the "Protective Order" governing Discovery Material ("Protective Order") issued by the Commission on October 23, 2008, in connection with the above-captioned Matter. I understand the restrictions on my access to and use of any Confidential Material (as that term is used in the Protective Order) in this Matter, and I agree to abide by the Protective Order.

3. I understand that the restrictions on my use of such Confidentiality Material include:

- a. that I will use such Confidential Material only for the purpose of preparing for this proceeding, and hearing(s) and any appeal of this proceeding and for no other purpose;
- b. that I will not disclose such Confidential Material to anyone, except as permitted by the Protective Order;
- c. that I will use, store and maintain the Confidential Material in such a way as to ensure its continued protected status; and
- d. that, upon the termination of my participation in this proceeding, I will promptly return all Confidential Materials and all notes, memoranda, or other papers containing Confidential Material, to Complaint Counsel or Respondent's Outside Counsel as appropriate.

4. I understand that if I am receiving Confidential Material as an Expert/Consultant, as that term is defined in this Protective Order, the restrictions on my use of Confidential

Material also include the duty and obligation to:

- a. maintain such Confidential Material in separate locked room(s) or locked cabinet(s) when such Confidential Material is not being reviewed;
- b. return such Confidential Material to Complaint Counsel or Respondent's Outside Counsel, as appropriate, upon the conclusion of my assignment or retention, or upon conclusion of this Matter; and
- c. use such Confidential Material and the information contained therein solely for the purpose of rendering consulting services to a Party to this Matter, including providing testimony in judicial or administrative proceedings arising out of this Matter.

5. I am fully aware that, pursuant to Section 3.42(h) of the FTC Rules of Practice, 16 C.F.R. § 3.42(h), my failure to comply with the terms of the Protective Order may constitute contempt of the Commission and may subject me to sanctions.

Date: \_\_\_\_\_

\_\_\_\_\_  
Full Name [Typed or Printed]

\_\_\_\_\_  
Signature

**UNITED STATES OF AMERICA  
BEFORE THE FEDERAL TRADE COMMISSION**

**COMMISSIONERS:**      **William E. Kovacic, Chairman**  
                                 **Pamela Jones Harbour**  
                                 **Jon Leibowitz**  
                                 **J. Thomas Rosch**

In the Matter of	)	
Polypore International, Inc.,	)	Docket No. 9327
A corporation.	)	Public
	)	

**DECLARATION OF GUY DAUWE IN SUPPORT OF MOTION FOR *IN CAMERA* TREATMENT**

I, **Guy Dauwe**, declare as follows:

1. I am the Managing Director of Amer-Sil, S.A. ("Amer-Sil"). Amer-Sil is a wholly-owned subsidiary of The Moore Company. Amer-Sil exists under the laws of Luxembourg. Amer-Sil's production facilities and offices are located in Zone Industrielle, Kehlen, L-8287, Luxembourg.

2. I have reviewed the pleadings and motions filed by the FTC and by Polypore International, Inc. ("Polypore") in this matter. I submit this declaration in support of The Moore Company's Motion for *In Camera* Treatment of Documents Designated by Polypore.

3. Polypore has informed Amer-Sil that, in this proceeding, it intends to introduce evidence containing "Confidential Material" as that term is defined in the Protective Order Governing Discovery Material (the "Protective Order").

4. I have reviewed the documents designated by Polypore and concluded that certain information in those documents is highly confidential and that the public disclosure of that information would cause significant harm to Amer-Sil's commercial and competitive interests.

5. Those documents for which *in camera* treatment is appropriate are listed in Exhibit A to this declaration.

6. The documents listed in Exhibit A contain information that is highly confidential and generally not disclosed outside of Amer-Sil, except insofar as it may be shared confidentially with Amer-Sil's business partners. It is distributed within the company only to those who have a specific need for the information. Amer-Sil maintains all of its records in a locked facility. It does not permit tours of the facility or permit access to any part of the facility where confidential business records are stored, or confidential manufacturing processes take place. Those employees who receive the information typically do so only upon entering into confidentiality agreements that prohibit them from disclosing the information to others. Amer-Sil guards the confidentiality of this information because of its value to the Company's ongoing business, as well as the competitive harm it would suffer if the information was disclosed. The information is the product of a significant investment of time and resources, and could not be acquired or duplicated by others in the absence of a similar expenditure of time and resources, if it could be duplicated at all. Additionally, Amer-Sil, and by extension The Moore Company, has sought legal advice and incurred substantial cost to protect the confidentiality of the documents listed in Exhibit A.

7. For the convenience of the Court, the documents listed in Exhibit A have been organized into categories, each of which is discussed below.

8. Category 1: Product Development Information. These documents contain executive-level information of the highest confidentiality and materiality. They include information about Amer-Sil's upcoming product releases, sales and marketing strategy, and current and prospective customers. Amer-Sil has invested and continues to invest hundreds of thousands of dollars in its ongoing efforts to develop new products. It has also invested substantial amounts of money in developing its relationships with its clients and its knowledge of their unique needs. Public disclosure of this information is certain to cause substantial commercial and competitive harm to Amer-Sil because of the advantage it would provide to competitors. Amer-Sil prides itself on its unique process of manufacturing battery separators. Amer-Sil is unaware of any other company in the world that uses the same process or a similar process as Amer-Sil. Amer-Sil believes that its unique process gives its separators a competitive edge. Amer-Sil is highly protective of the secrecy surrounding its manufacturing process. No published literature or other publicly-available printed materials on this process exist (other than the non-specific information reflected in a patent, which does not reveal any confidential or proprietary information). All such information is highly confidential. Changes in the design of Amer-Sil's products are a crucial part of Amer-Sil's competitive advantage over its competitors. Publicizing such information would be extremely damaging to Amer-Sil. Public disclosure would also risk substantial commercial and competitive harm to Amer-Sil's customers. Additionally, the information contained in Exhibits RX622, RX1624, RX1628, and RX1629, regarding new products in development, is protected by nondisclosure agreements entered into between Amer-Sil and its existing and prospective customers. It is respectfully submitted that this information should be protected for three to ten years, and that any shorter periods of time would risk substantial commercial and competitive harm to both Amer-Sil and its customer.

9. Category 2: Product Marketing, Customer, and Sales Strategy Information. These documents contain highly sensitive marketing strategy and product development information, including sales strategy, pricing information, prospective customers, and current customers. This information was assembled at considerable time and expense, and represents a core business asset. As reflected in the documents, this information was shared with a limited number of employees within Amer-Sil and with each prospective customer that participated in discussions with Amer-Sil. The other entities that participated in discussions with Amer-Sil understood and desired that the discussions would be confidential. For example, as set forth the document, the information contained in Exhibit RX1620 was shared with Amer-Sil only after Amer-Sil entered into a confidentiality agreement. The product design information provided by Amer-Sil's customer, which is contained in Exhibit RX1621, is also protected by a nondisclosure agreement entered into between Amer-Sil's customer and Amer-Sil. Public disclosure of this information would damage Amer-Sil's competitive position because it would provide Amer-Sil's competitors with information regarding Amer-Sil's marketing strategy and product development, without the attendant cost that Amer-Sil incurred in generating the information, and enable Amer-Sil's competitors to use that information in their own negotiations with Amer-Sil's customers. Disclosure will also enable customers to gain bargaining leverage over Amer-Sil, in that they would obtain information regarding Amer-Sil's confidential negotiations with other current or prospective customers. Disclosure may also significantly disrupt Amer-Sil's customer relationships. It is respectfully submitted that this information should be protected for three to ten years, as indicated in Exhibit A, and that any shorter periods of time would risk substantial commercial and competitive harm to Amer-Sil.


10. Category 3: Pricing Information. These documents provide information relating to Amer-Sil's product sales ordered by individual customer. Public disclosure of this information would damage Amer-Sil's competitive position, because it would provide Amer-Sil's competitors with information regarding the confidential pricing information tailored by Amer-Sil for specific products sold to specific customers. Amer-Sil's price terms are individually negotiated with each of its customers, taking into account a host of factors that are unique to each customer relationship. All of this information is confidential and competitively sensitive. Amer-Sil would suffer substantial competitive harm if it were made part of the public record in this matter. The information contained in RX1615 is also protected by a nondisclosure agreement. It is respectfully submitted that this information should be protected for three to five years, and that any shorter periods of time would risk substantial commercial and competitive harm to Amer-Sil.

11. I personally reviewed all of the documents listed in Exhibit A and determined the length of time for which *in camera* treatment is appropriate based on my assessment of the harm that would be caused by public disclosure.

12. Based on my review of the documents listed in Exhibit A, I have indicated the minimal length of time for which, in my judgment, the documents should be afforded *in camera* treatment.

I declare under the penalty of perjury under the laws of the United States that the foregoing is true and correct to the best of my knowledge and belief.

Executed this 1 day of May, 2009 in Kehlen, Luxembourg.

  
Guy Dauwe



# **Exhibit A**

Exhibit A

**CATEGORY I: Product Development Information**

<b>Trial Ex. No.</b>	<b>Portion for which <i>In Camera</i> Treatment is Necessary</b>	<b>Date</b>	<b>Begin Doc. No.</b>	<b>End Doc. No.</b>	<b>Length of <i>In Camera</i> Treatment Requested</b>
RX 1622	Entire document	10/10/08	AM 0037744	AM 0037753	10 years
RX 1624	Entire document	12/08/08	AM 0285044	AM 0285069	10 years
RX 1625	Entire document	2007	AM 0290714	AM 0290714	3 years
RX 1629	Entire document	10/16/08	AM 0037251	AM 0037256	10 years

**CATEGORY II: Product Marketing, Customer, and Sales Strategy Information**

<b>Trial Ex. No.</b>	<b>Portion for which <i>In Camera</i> Treatment is Necessary</b>	<b>Date</b>	<b>Begin Doc. No.</b>	<b>End Doc. No.</b>	<b>Length of <i>In Camera</i> Treatment Requested</b>
RX 1612	Entire document	2007	AM 0150896	AM 0150908	10 years
RX 1613	Entire document	8/23/07	AM 0291731	AM 0291741	10 years

RX 1614	Entire document	3/01/08	AM 0295059	AM 0295085	10 years
RX 1619	Entire document	3/31/08	AM 0288909	AM 0288910	5 years
RX 1620	Entire document	7/02/08	AM 0291633	AM 0291634	10 years
RX 1621	Entire document	8/28/08	AM 0069915	AM 0069924	5 years
RX 1623	Entire document	11/26/08	AM 0286572	AM 0286573	3 years
RX 1628	Entire document	2008	AM 0250964	AM 0250999	10 years

**CATEGORY III: Pricing Information**

<b>Trial Ex. No.</b>	<b>Portion for which <i>In Camera</i> Treatment is Necessary</b>	<b>Date</b>	<b>Begin Doc. No.</b>	<b>End Doc. No.</b>	<b>Length of <i>In Camera</i> Treatment Requested</b>
RX 1606	Entire document	01/01/05 - 3/12/05	AM 0026113	AM 0026116	3 years
RX 1607	Entire document	01/01/06 - 3/12/06	AM 0026117	AM 0026119	3 years
RX 1608	Entire document	01/01/07 - 3/12/07	AM 0026120	AM 0026123	3 years

RX 1609	Entire document	01/01/08 – 12/31/08	AM 0026124	AM 0026124	3 years
RX 1615	Page AM0003791	6/16/07	AM 0003789	AM 003802	5 years

If the Commission intends to disclose any of the following information in a final decision, please contact:

Michael Connolly, Esq.  
Hinckley, Allen & Snyder LLP  
28 State Street  
Boston, MA 02109-1775  
Phone: 617 345-9000  
Fax: 617 345-9020

**SUBJECT : 11<sup>th</sup> ELBC Warsaw / 23.09 – 26.09.2008**

To : G. Dauwe

From : H. Deruette

cc.: U.Lambert  
P.Meurens  
A. Cattiaux  
C. Fannes  
M. Espen  
V. Toniazzo

Date : 10.10.2008

*Amer-Sil personnel: G.Dauwe, JM Martin, V. Toniazzo, G. Chaix  
H. Deruette*

**People contacted:**

**I) Customers**

**Energys**

**Larry M. Burkert, Sr. Procurement Manager**

**Dr. Herbert Borowsky, Director Technology Development**

**Dr. Rhodri Wyn Ewans, VP Technology & Engineering**

**Rob Brile, Director of Engineering Reserve Power VRLA Americas and Asia**

- FTC

They are rumours saying that Daramic is going to stop the Cellforce separator and to close the plant in Austria. 2 production line are installed in Austria but the building is designed for 3 lines. 7 to 8 million USD / line. 12 million m2 / line. It takes approx 18 months to build a plant + 3 to 4 months to be on full stream. German extruders are the best. The delivery time of the extruder is quite long. To produce the Cellforce the use of the Ace-Sil is required. The Ace-Sil is used as regrind (very small amount). Daramic prefer to push PE + additive (ENSCI). For this reason Energys is looking to a second PE source. They have already approached two PE separator manufacturers in Asia. They would like to know if Amer-Sil is interested to move to the production of PE separators. They have been told that it has to be discussed with the Moore Company. We need also from them some figures to make our evaluation (how many m2 / year, how many years contract).

*RX 1622*

AM 0037744

FTC lawyers want to see Enersys very active at finding an alternative to Daramic. It will proof that it is very necessary. Enersys must also show to the lawyers that they are very active to find a second source. Enersys US uses PE separator in stationary flooded cells. They have also approved the Darak separator.

- Introduction of the woven / non woven sleeve for flat positive tubular plate in traction as replacement of Korosil, glass mat double wrapping etc...

The idea has been very well received. The positive plate is inserted into the woven sleeve and then it pass through an oven to shrink the fabric. This is mainly for the US market. They were told that our intention is to supply woven fabric. The sleeve will be weaved and impregnated at the Moore company. Rob Brile will report to George Ayrton who is in charge of motive power at Enersys USA. Larry Burket found two obstacles: get rid of the boot and move from sleeve to leaf. Give up the sleeve process can be an issue as all the production is organised around the sleeve technic. Angel hair is pre assembled to the glass mat. Premium batteries are wrapped twice with glass mat (horizontally and vertically). He was told that the purpose of the woven sleeve is to replace the glass mat wrapping and Korosil. No need to move to leaf separator and they can keep the boot. First step is that we have to give a price idea (rough quotation). This is just to check if the idea is economically viable. If yes they will ask for samples. Rob Brile will report this discussion to George Ayrton.

Dr. Borowsky mentioned that are already using such a concept in Germany in reserve power but with a loose polyester sleeve. The plate is inserted manually into the polyester sleeve. However because it is loose they have some shedding.

- AS09/ AS09+

Dr. Borowsky mentioned that he has already tested two types of samples. The end of charge was not good due to the presence of impurities. End of charge is not so problematic in stationary but this is an issue in traction. There is a risk of overcharge. Dr. Borowsky has mad a life cycle test with the AS09. Normally capacity should remain stable until 500 cycles. The AS09 was already decreasing before 500 cycles. **He mentioned that impurities are not always metallic but can also be organic. Carbon black has a depolarising effect although having no metallic impurities (organic impurities)**

For DIN OpzS, Enersys has moved to non woven. However they are still producing a stationary flooded cells using 38 tubes (OpzS 250). They are using woven gauntlet. Dr. Borowsky would like to move also to non woven gauntlets. We told him that it should be no problem (Tergar). We have to check this and revert to Peter Kaiser.

Dr. Borowsky needs to speak again with Valérie regarding the AS09+. We have to send the presentation.

Action:

- Give to Larry Burket a price idea concerning the woven polyester sleeve (JMM/GD)
- Inform Larry Burket if Amer-Sil is interested to move to the production of PE sep (GD)
- Send AS09+ presentation to Dr. Borowsky (JMM)
- Contact P. Kaiser to get more info regarding 38 tubes in non woven for OpzS 250 (diameter, height, volume) + check feasibility at Amer-Sil / Tergar (JMM)

**Rahimafrooz**

**Eng. Sayeed Hassan, Chief Operating Officer**

Rahimafrooz has two problems:

- separator short circuit

We supply the separator DLN100 (IPS and solar batteries) and DLC120 (BS traction). Problem is mainly in IPS and solar batteries for which the design of the separator has not been changed. In BS traction cells we have moved in 2006 from DC120 to DLC120. They are suspecting that the cut edge of the gauntlet is causing the short circuit. The gauntlet is in direct contact with the backweb. Sayeed was told that we will move back immediately to DC120. For the DLN100 we have no calendar rolls to produce DC100. It is not sure that the ribs spacing is the cause of the problem. Quantity supplied YTD September 08: DLC100, 36711 m<sup>2</sup> and DLC120, 2669 m<sup>2</sup>.

- Gauntlet is disintegrating after few hundred cycles (no correct washing)

Sayeed was told that the problem is mainly with wet filled gauntlets. This is a washing problem.

Sayeed was informed about the short circuit problem but not about the oxydation of the gauntlet. He will make the follow up. Regarding these two problems, we have to communicate through him.

Action: send to Sayeed a summary of the situation. Do they make tank formation or jar formation? (HD)

**University of Wollongong (Australia)**

**Dr. Shi Zhong, Senior Research Fellow**

He has worked on the concept of AGM / gel battery. He would like to develop a gel spiral wounded battery. Corrugated separator has been recommended.



**INCI Akü**

Mrs. Sibel Eserdag, Product and Method Development Manager

Mrs. Eserdag is in charge of SLI batteries. INCI produces 3,2 millions SLI batteries for a production capacity of 4 millions. In addition to SLI, they produce also traction and stationary batteries. For the time being they are buying the plates but their intention is to move to the full production. For the time being they are making a feasibility study. Target is to produce 50 000 traction cells. Wet filling.

Action: send e-mail to Mrs. Eserdag summarizing advantages of Amer-Sil products (HD)

**Global Battery**

**Mr. Hee-Jung Kim, Team Manager**

Unfortunately Mr. Kim has not received the agenda sent before the meeting.

Global is supplying KT Telecom with OpzV cells for 7 years. Unfortunately they have encountered recently 2 problems:

- Positive pole expansion. This is Global fault. Somebody changed the O ring.
- The alloy recommended by Wilhelm Hagen was not correct. The negative plate brakes

KT telecom has moved this year from OpzV to stationary flooded (PS cells). This explain the lower volume. The PS cell has 32 tubes, woven gauntlet using PE separator. Mr. Kim's project is to move to 19 tubes (OpzS) and his intention is to use our separator.

Mr. Kim has the intention to move from 3,4 mm separator in OpzV cells to 1,9 mm. By this way he will have more plates and more capacity. He has already implemented this change 10 years ago at Global Hi-Tech. They have also the intention to produce the OpzV cells on the same production line than traction cells. The target is to increase the production speed. However the Amer-Sil separator must be sleeveable. We have supplied one roll of corrugated separator SK200. Mr. Kim has no feed back. He needs to check. In case they can not use the corrugated separator on the production line then this idea will be abandoned. They might consider the possibility to invest in a automated production line based on leaf separator.

Global Battery has started this year the production of DIN traction cells. They are produced on the automated production line with Global PE separator.

Global Battery is also working on a project of traction gel cells with the Amer-Sil separator. Target is to have all the design finished before the end of the year. Next year they will make some prototypes to test in the field.

For golf car batteries although the water consumption is higher than with the Flex-Sil, Global is prepared to introduce the corrugated separator (because of the higher capacity) in longest 6V, longest 8V and longest 12V. For the longest 12V only those sold to the Japanese market. The charging regime of the Amer-Sil separator is similar to GS Kase separator. The first step is to introduce our separator in the longest 6V and longest 12V. 5000 batteries / month. Longest 6V has 3 cells. 16 sep / cell or 48 sep / battery. We have to contact KJ Lee to remit our quotation.

For all their golf car batteries, they have removed one plate. They are comparing the Flex-Sil against the Amer-Sil separator. In this test there is no batteries according to the previous design i.e one plate more + Flex Sil.

They have tested our non woven gauntlet in OpzV cells (200AH) during 1,5 year. No problem. Test is good. Accelerated life cycle test.

They have also tested the AS03 and AS09 in traction cells in the field. One year test. No problem. Mr. Kim will send the report.

They have however a problem of filling density with their machine. They have purchased one Hadi machine a long time ago. Additional wet filling machines have been purchased in Korea (copy of Hadi machine). Hadi is said to be 5 time more expensive than the local machine. From top to bottom (bar), filling density is as follows:

Local woven: High, low (middle), High (bottom)

Non woven Amer-Sil: High, low, low.

The wet filling machine currently in operation has no system to adjust the filling pressure. At the end of the year they will receive a new filling machine having this time the automatic filling pressure adjustment. Before to move to non woven, they have to solve this density problem. AS03, mecondor non woven, AS09 are all similar.

The production of CGS batteries (gel monobloc with flat positive plates) is increasing. We supply the DGT200. Application telecom, ICE train.

Action : send to Mr. Kim summary of our meeting + resend agenda meeting dated September 18<sup>th</sup>.

**Willard Batteries**

**Mr. Laurence Geyer, Technical Manager Industrial Batteries**

**Mr. Kelvin Naidoo, Group technical executive**

The Hadi machine is at full capacity. Positive plates for dry charges cells are still dry filled. They are using woven gauntlet, tank formation. They have purchased a second Hadi machine. Then they will stop the dry filling machine. The question from Willard is: Is non woven gauntlet filled on the Hadi wet filling machine compatible with tank formation?

According to Cleps and Pierre Lenain no problem. Important is that the plates are washed correctly after tank formation. Laurence has receive the same information from other delegates. They will make some test to find out the right washing procedure. If they have problem they will contact us to be put in relation with a battery consultant.

Regarding the pitch problem, Laurence was informed that we have invested in a new sewing pitch and that the filling problem on the Hadi machine should be solved. He would like to receive a copy of all correspondence sent to Emmanuel regarding this subject.

Problem of power shortage is over in South Africa. They have implemented a program to save electricity. During few months the demand for inverter system was very high however it has stopped.

Action: Send to Laurence all the correspondence regarding pitch problem.

**United Lead Oxyde**

**Kalidas Shirodkar, Director**

**Satish Shirodkar, Director**

They are now supplying the former Oldham Russia. They are prepared to order from us. We have to make a proforma for 14 000 gauntlets 8,0 x 19 tubes x 298 mm, CFR Chennai (seafreight)

Action: make the proforma (HQ)

**NIFE / Brasil**

**Mr. Clas Goran Wanning, Managing Director**

They have sold their dry filling machine to Fulguris in order to get some cash. The two patterns found recently had finally no cash. It was land owners but with no cash to invest into NIFE. They are no longer in the company.

Mr. Wanning is around 74 year old. His wife lives in Rio. Mr. Wanning lives in a flat hotel in Sao Paulo (Jardins). He drives every week end to Rio (450 km one way).

Mr. Wanning is expecting an important order from Ericsson Sweden. The financial situation at NIFE is very critical. We have to be very carefull. They can not work with L/C because they have to deposit the money at the time of LC opening.

**Moura Batterias**

**Mr. César Sena, Industrial Director**

**Mr. Antonio Ferreira,**

Tony works now for Moura. He lives between Bello Jardim and Recife. He is in charge to develop OpzS cells with flat positive plates. Tony was told that we used to supply our corrugated separator in traction but we have been displaced by the Cellforce due to the exchange rate USD / Euro. Moura has developed a golf car battery with the Amer-Sil separator.

Action:

- Inform Tony about our contact person at Moura and make a follow up of the golf car project. Production was supposed to restart this year (HD)

**Pacific Batteries**

**Mr. Peter Chaplin, Engineering Manager**

This company produces only submarine batteries. One battery per year. They supply not only the battery but also the electronic to go with. They are using the Darak separator + Mecondor woven. He will ask for samples.

Action: send e-mail recalling our discussion and offer to supply samples (HD)

**L'Accumulateur Tunisien Assad**

**Mr. Kossentini,**

**Ahmed Ayadi, Product Development Manager**

They produce 5000 traction cells per year with positive plates imported from Enersys France. Daramic PE separator is purchased in rolls and cut into leaf. They have just made an agreement with Enersys to produce industrial batteries.

**Luminous Power Technologies (P) Ltd**

**Mr. Rakesh Malhotra, Managing Director**

**Ajoy Datta, Director Chief Technology Officer**

Luminous belongs to the SAR group. The SAR group has been established by Mr. Malhotra and employs around 18 000 people. They are going to become public. Luminous itself produces inverter, UPS systems and flooded batteries.

They produced around 50 000 inverter batteries per month out of which 10 000 pieces with tubular positive plates. All flooded. For the batteries with flat positive plates, they are using a PE pocket. The PE separator is purchased from Anpei / Taiwan. The woven gauntlet is purchased locally.

They have a project to produce 2V OpzV cells. Amer-Sil products have been introduced. Mr. Malhotra is still interested at purchasing a factory in Europe.

Action: send to Mr. Datta e-mail summarizing advantages of Amer-Sil products for gel (HD)

#### **System Sunlight**

**Mrs. Yiota Halikiopoulou, Purchasing Officer (Athens)**

**Mr. Manolis Leledakis, Purchasing Manager (Athens)**

They have moved from woven to non woven in OpzS. Woven remain now only for submarine. According to Yiota YTD September 2008, they have already purchased 11 millions Lmt in non woven. They will produce 450 000 traction cells and next year 700 000 to 800 000 cells (figures are conform to what I have been told during my visit to Sunlight in January 2008).

Target is to produce 5 submarine per year. In 2007, they have produced 4 submarine representing approx 1,3 million Lmt. According to Yiota for 2009, they should produce around 6 to 7 submarine batteries. We are invited to remit our quotation for 2009.

Action: introduce new fabric which will replace HD type + supply samples. Make a global offer for 2009

#### **Chloride Egypt**

**Mr. Walid Daoudi, General Manager**

They are producing starter batteries, stationary and traction batteries. Positive tubular plates are imported from CMP. Mr. Daoudi is looking at an other supplier for the positive tubular plates as CMP has very long delivery time and delay. TAB has been recommended (gauntlet with edge protection). Advantages of the edge protection versus the sleeve has been introduced.

Action: Check with TAB if they have been approached by Chloride Egypt (JMM).

#### **Exide India**

**Mr. Subhankar Chakraborty, R&D Center**

They are interested to move to non woven in submarine batteries. They will send us a drawing in order to check from our side if it is possible. They have compared woven and non woven in wet and dry filling. They have found that non woven has a lower capacity in dry filling. They wanted to have our opinion. One possibility could be the presence of fuzz. As Avoca is their supplier we remained very evasive (they should ask to Avoca not Amer-Sil)

**Vulcan Batteries**

**Abraham (Cheni) Kerem, CEO**

**Shimon Hazan, Plant Manager**

**Moti Ravet, Technical Manager**

Purpose of this contact was to review the situation of the Israeli market. Vulcan and Schnapp produce SLI batteries only. Lahor in Nazareth who was producing stationary batteries has almost stop the operation (we have supplied in the past but Chlorine problem). Talron has stop the production and imports now finished batteries however they are not sure if they are still very active on the market. It remains only Israeli Batteries, Mr. Adi Segal in Acco (St Jean d'Acre) producing industrial batteries. We used to supply Israeli Batteries but they have moved to PE sleeve. Adi Segal at that time had no time to listen my arguments in favour of the edge protection.

Mr. Kerem has studied in Dauphine. He is completely fluent in French (no accent).

**Steco**

**Mr. Sylvain Camus, Chief Financial & Operating Officer**

**Mrs. Aurélie Pradourat, R&D Manager**

**Mr. Gaël Hemon, Supply Chain Manager**

Steco was bankrupt. An investment funds has invested 7 million € to restart the activity. Steco is specialized in the production of SLI and truck batteries. Production is automated with pocket. They are looking for an alternative to the PE separator. Corrugated separator has been introduced unfortunately not suitable for their production process.

**Afrique Cables**

**Mr. Abdelhamid Eel Acham, Industrial Director**

This company produced SLI batteries (visited in 1999). As Chloride Egypt, this company belongs to the Chaabi group. They have a project to move to the production traction + stationary batteries. In a first step they will make only assembling. TAB has been recommended as plate supplier.

The owner of Tecna has passed away. The company is disorganized. Some family members want to sell the company other not.

**First National Batteries**

**Louis Laubscher, Managing Director**

**Dr. Louis Denner, Technical Director**

Still no production of gel monobloc batteries.

**II) Competitor and Supplier Contacts:**

**O.M Impianti**

**Mr. Orazio Sartori, NBE Vice CEO**

**Mr. Jacopo Maggioni, OMI Vice CEO**

They are in contact with Rahimafrooz. Filling machine cost around 50 000 € (without the recycling part). He will send us a presentation. They are 3 wet filling machine suppliers on the market Hadi, CTT (chloride), OMI.

**Mr. Pierre Lenain, Battery Consultant**

He is OK to work as a consultant but only for small project.

**Accuma China**

**Mrs. Amy Hao, General Manager**

Accuma is based in Wuxi. She has left Frötek and she is working now for Accuma.

**EBM (Engineering Battery Master)**

**Mr. Alfred Apse**

Engineering company employing 10 people and working in the lead acid battery field.

Mr. Apse is in charge of AGM batteries.

**BM Battery Machines**

**Ing Fabrizio Salvetti, Project Manager**

I met Mr. Salvetti during the CIBF this year. He used to work for Fiamm as production director in Montecchio and Crumlin. During the CIBF he was working with Mr. Gang Xie in a company called China Success Industrial Limited. They had a project to produce traction cells and tubular flooded monobloc batteries in Jakarta???. Mr. Salvetti has withdrawn from this project. He is now working fro BM.

If the Commission intends to disclose any of the following information in a final decision, please contact:

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Hinckley, Allen & Snyder LLP  
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Boston, MA 02109-1775  
Phone: 617 345-9000  
Fax: 617 345-9020



**Meeting at Crown Battery  
Amer-Sil product presentation**

Fremont, USA  
December 8th, 2008



RX 1624

**New product for flat plate motive**  
**Current solution**

**5 components**

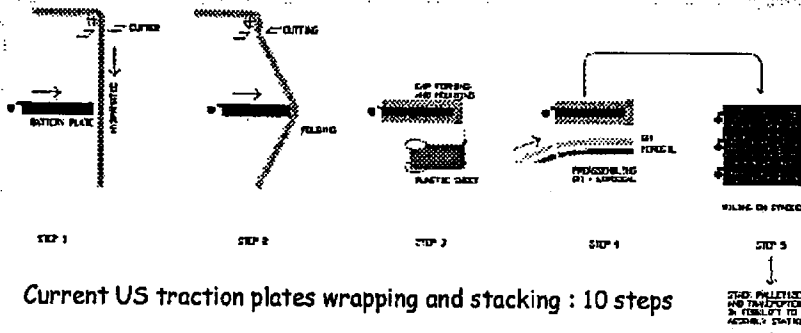
- Hydramatic, glassmat, Koroseal, boot and separator
- Difficult supply chain ( single source and expensive )
- Health & environmental concerns for Hydramatic

**Cumbersome and long process**

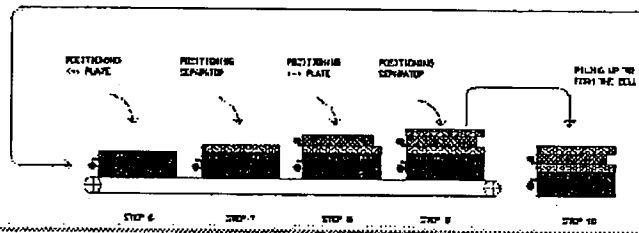
- More than 10 steps
- Cf. scheme



## Current US plate wrapping process (automated)



## Current US traction plates wrapping and stacking : 10 steps



**New product for flat plate motive**  
**New solution proposed by Amer-Sil**

- **Only 2 components!**
  - Fabric sleeve or pocket and separator
    - ✓ Woven or non-woven fabric
    - ✓ In roll form or per piece (as pocket or as sleeve)
    - ✓ Cf photos



**New product for flat plate motive**  
**New solution proposed by Amer-Sil**

**□ Easy, continuous process**

1. Insertion of positive plate into fabric
2. Shrinking of the fabric by heating
3. Possibility to :
  - a . Close with a boot
  - b . Use a pocket supplied by Amer-Sil
  - c . Make the pocket in-house (while cutting roll)
4. Stacking of the plates



**New product for flat plate motive**  
**New solution proposed by Amer-Sil**

**Technical advantages**

- Lower electrical resistance : better electrical output (**higher capacity**)
- Better acid circulation; less stratification
- Possibility to optimize the separator
  - ✓ i.e., via rib configuration and/or rib height distribution

**Logistic advantages**

- Easy supply chain ( one standard product )
- Reduced inventory
- Product made in the US ( Amer-Sil US )
- Can be in roll or piece form



**New product for flat plate motive**  
**New solution proposed by Amer-Sil**

**□ Competitive solution**

- ✓ Much less process scrap
- ✓ Higher productivity
- ✓ Lower cost
- ✓ More separator choices



**New product for flat plate motive**  
**Proposal**

- Confidentiality agreement**
- Cooperate to validate the concept**
  - 1. Current solution vs new solution with
    - a. PE
    - b. PVC
  - Sample size needed ?
- Looking for broad application**
- Sharing of test results (US and Lux)**
- Continued cooperation to further improve**





**New product for flat plate motive**  
**New solution proposed by Amer-Sil**

**No road-blocks**

- Active mass loss : low (due to small fabric pores)
- PAM compression : OK (via fabric shrinkage)
- Lateral shorts : none (if fabric with side protection)
- Oxygen : escape via fabric pores (same as in tubular plates)



**New product for flat plate motive**  
**New solution proposed by Amer-Sil**

- **Proven fabrics (from tubular plate experience)**
  - Same materials used in standby and traction batteries
  - Long history and experience
  - Use of known resins with high oxydation resistance
  - Amer-Sil has patents related to fabrics & products
  - Therefore : see it as a low-risk, new product
  - And : no risk related to fabric used
  - Propose testing to confirm efficiency, fine-tune process



**New product for flat plate motive**  
**New solution proposed by Amer-Sil**

**Testing proposal1 : with minimum tests**

1. Base-line : existing cell with 5-layer wrap
2. Wrap replaced by new Amer-Sil woven pocket
3. Non-woven pocket without boot, with PE
4. Woven pocket with leaf PVC ribbed separator with GM

Tests : 3 cells for each test



**New product for flat plate motive**  
**New solution proposed by Amer-Sil**

**Testing proposal2 : extended number of tests**

1. Base-line : existing cell with 5-layer wrap
2. Wrap replaced by new Amer-Sil woven pocket
3. Non-woven pocket without boot, with PE
4. Woven pocket with leaf PVC ribbed separator with GM
5. Woven pocket with leaf PVC corrugated separator with GM
6. Woven pocket without boot, with PE
7. ...

Some tests at Amer-Sil



**New product for flat plate motive**  
**New solution proposed by Amer-Sil**

- Made in US : The Moore Co. (= Amer-Sil)**
- The Moore Co. : leader in textiles**
  - Stretch fabrics and polyester, ...
  - Weaving, knitting and finishing
  - Nearly 100 years experience
  - High technical content

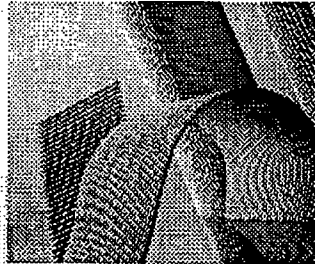
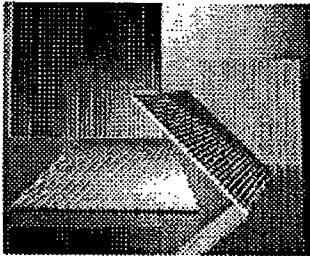


**Amer-Sil Separators  
For industrial battery  
applications**



## Amer-Sil separators

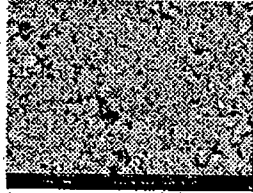
- Pure polymer / silica mix : micro-porous
- No mineral oil, no resin
- Micro-porous : very high porosity
- Ribbed or corrugated patterns
- Many choices : from  $< 0.015$  inch to 0.2 inch
- Numerous rib configurations



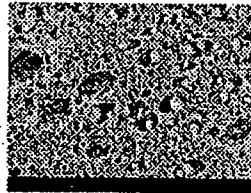
## Separator for flat plate motive

### Separator overview

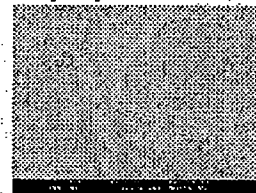
Ribbed PVC/silica



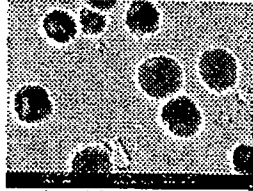
Corrugated PVC/silica



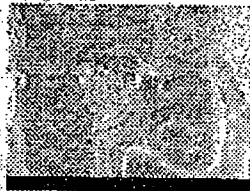
Polyethylene



PET mat/Phenolic resin



Polyethylene / Rubber



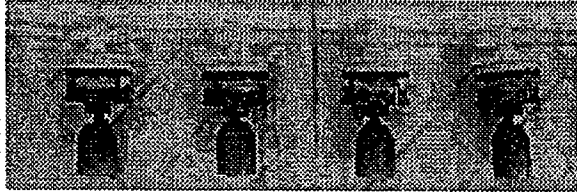


**Separator for flat plate motive**  
**Requested properties**

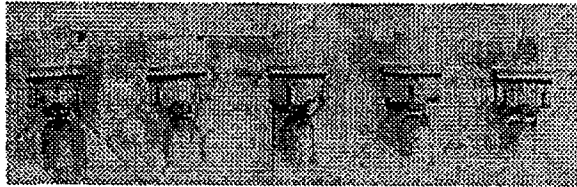
- High pore volume
- Low acid displacement
- Low electrical resistance
- Good oxydation resistance
- Low amount of organic impurities



**Amer-Sil separators : long life**  
***Mineral oil release from PE separators (traction)***



Water-refill plugs from  
batteries with PE separators:  
Black scum – dirty, clogged



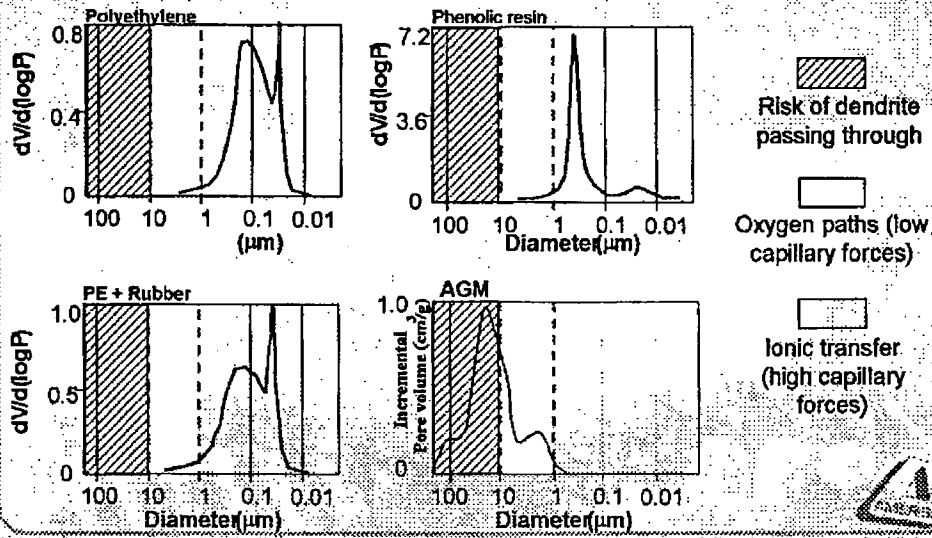
Water-refill plugs from  
batteries with AS separators  
Clean, no issues

***But PVC : inert → natural resistance against oxydation***  
***& chemicals***



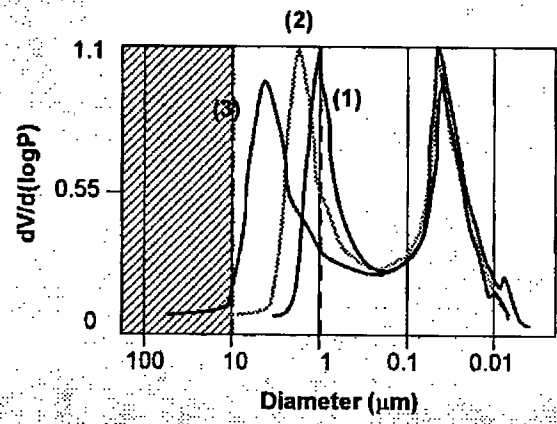
## Amer-Sil separators

### Separator pore size distribution of others



# Amer-Sil separators

## PVC/silica Separator pore size distribution

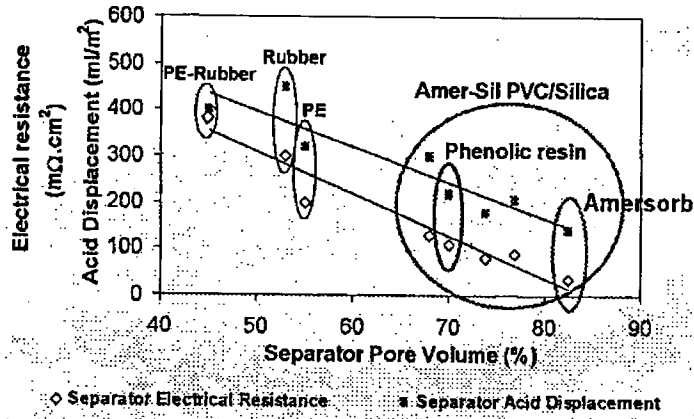


- (1) Amersil ribbed separator
- (2) Amersil corrugated separator
- (3) Amersorb separator



# Amer-Sil separator properties

□ Impact of separator pore volume on other physical properties



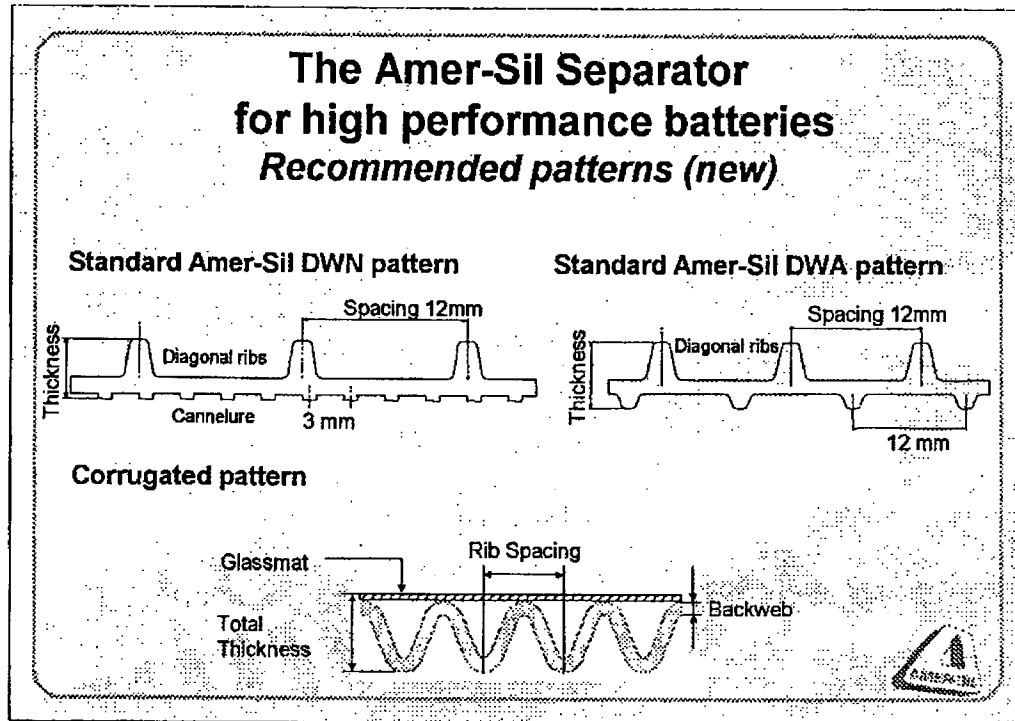
## Amer-Sil separators

### *Physical properties vs. other types*

Typical values	Amer-Sil Standard	Amersorb ribbed	Amer-Sil corrugated	Amersorb corrugated	PE	Rubber	Phenolic resin	Cellulose
Thickness (mm)	2.0	2.0	2.0	2.10	2.0	2.0	2.0	2.10
Backweb (mm)	0.50	0.57	0.57	0.42	0.50	0.57	0.55	0.50
Total porosity (cm <sup>3</sup> /g)	1.20	-	1.58	-	0.90	0.85	1.20	0.73
Pore volume (%)	68	76.9	73.9	82.4	55	53	68	45
Pore size (µm)								
Min	0.05	0.05	0.05	0.05				
Mean					0.10	0.17	0.50	0.09
max	1	1-10	1-3	1-10				
Elec. Resistance (mΩ.cm <sup>2</sup> )	<del>10</del> 120	89	80	35	200	300	110	270
Displacement of acid (ml/m <sup>2</sup> )	<del>300</del> 230	207	180	140	300	450	220	390
Oxidation weight loss (%)	3	3	3	3	5-20	15-30	29	23
Wettability (s)	2	1	2	1	5000	15	200	> 1200



## The Amer-Sil Separator for high performance batteries *Recommended patterns (new)*



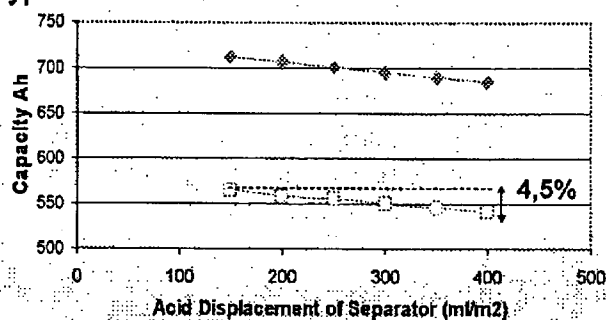
Amersil recommended patterns to get the best of your gel batteries are the DT and DC pattern.

DT has diagonal ribs on the positive side and straight ribs on the negative side, while DC has diagonal ribs on the positive sides but cannelure on the negative side.

For more information on our product range, we invite you to visit our booth and thank you for your kind attention.

## Separator for flat plate motive Influence of acid displacement

- Battery capacity vs separator acid displacement
- Cell Type 6 PzV 550



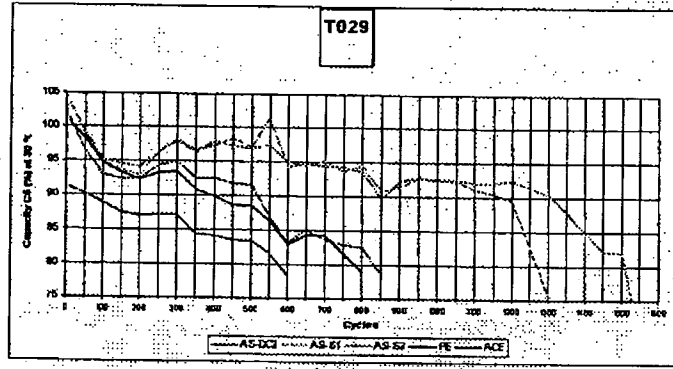
◆ acid volume /cell x 10    □ calc. capacity Ah (Discharge 1.29 -> 1.125)





# Separator for flat plate motive Cycle Life

□ C5 capacity of 2V PzS cells at 47 °C



**Separator for flat plate motive**  
**Cycle Life**

**Cycling procedure**

**Discharge : 1.8 h at  $1.66 * I_5$**

**Charge 1 :  $1.25 * I_5$  until 2.4 V per cell**

**Charge 2 :  $0.25 * I_5$  until loading factor of 1.2**

**Waterbath at 47 °C and 3 cycles per day**

**Capacity test at 30 °C**



If the Commission intends to disclose any of the following information in a final decision, please contact:

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**Technical Department****Separators****Research and Development Expenses by project,  
capitalized for EVA in year 2008 (k€ )**

■ PVC stabilization (TP 169) + brevet	30.0
■ PVC flexibility	15.0
■ PMMA based products (TP 157)	20.0
■ Amersleeve (TP 168)	35.0
■ New applications : shoe lining (TP 170)	15.0
■ Extrusion Modeling (TP 172)	40.0
■ Gelsil	50.0
■ TOTAL	195.0



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R X1625

If the Commission intends to disclose any of the following information in a final decision, please contact:

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**SUBJECT : Visit report Enersys / Kehlen 16/10/2008**

To : G. Dauwe

From : H. Deruette / JM Martin

cc.: U.Lambert  
P.Meurens  
JM.Martin  
A. Cattiaux  
V. Toniazzo  
C. Fannes

Date : 22.10.2008

Visitors : Mr. Larry Burkert,  
Mr. Georges Ayrton,  
Mr. Gerry Bonduelle,  
Mr. Herbert Borowski

Amer-Sil: G. Dauwe, H. Deruette, V.Toniazzo,  
U. Lambert, JM Martin,

1) Stabilization

They did not realized that we have two level of stabilisation one with ESBO oil + lead sulphate and one with only ESBO. Level one and two are available.  
In fact during the plant tour, the use of the raw materials was explained as the esbo and the pb sulphate.

Since 2003, they have chlorine problem in VB monobloc batteries mainly on the US market.

Besides their comments on pe black-scum from Daramic, the topic was not discussed deeply.

We have to inform G. Bonduelle if we are stabilizing separators supplied to Bulgaria and Italy ? If yes which level of stabilisation and since when? The same apply for traction separators supplied to Germany and Poland.

*RX 1629*

AM 0037251

## 2) Daramic

Daramic workers were on strike due to a project of cross training within the company. They broke the strike but workers are not very happy to be back at work. The efficiency at work is very low.

During the strike, Daramic has hired temporary workers. The quality has decreased a lot with many black scum problems. They are using a chemical lubricant to help the extrusion.

Only C&D and Enersys are using translucent containers in stationary flooded cells. For each order Daramic was sending a sample prior shipment. After testing (assembly of a real cell and formation!), Enersys was giving its approval or not. Anyway at the end Enersys was forced to take also the rejected material because no good products available

For each order Daramic was giving a call to tell Enersys what was out of specs. Even if the material was not accepted by Enersys, Daramic did not reproduce. Daramic is very arrogant. The problem is due to the upper management. Daramic is in monopoly situation. East Peen, GNB, Douglas all are complaining against Daramic. Douglas was even not informed about the strike. JCI moved away from Daramic to Entek.

## 3) Traction

European battery manufacturers wish to move to flat positive plate in traction. However the industry is not ready to accept. The trend is also to deliver more energy, more capacity. Due to the high lead price, the market share of tubular shrunk in the US. Although tubular deliver more capacity versus flat positive plate nobody want to pay for the extra capacity.

At Enersys USA, the ratio tubular versus flat is one to three. Enersys products are produced in different factories but can be sent anywhere in the world. Same quality, even in China. Products from Enersys China are not only for the local market but also for exportation (i.e. the quality has to be similar to the other Enersys products).

George/Larry confirmed having received our quote but as currently the market is down, they will reduce their business share produced in woven to keep the cladex parts. Under this consideration a change in supplier for this woven part ( reducing year by year) has no priority.

## 4) Amer-Sil separator in stationary flooded cells in the US

Enersys USA has tested our separator in stationary flooded cells. They have obtained a higher capacity versus their current separator. Although they have some concerns regarding PVC, technicians were prepared to introduce our separator in a battery with higher capacity and reduced longevity (10 years life only). This idea has been discussed with the marketing department but abandoned although the current product do not last 20 years.

We are requested to supply ( again ) samples for an UPS battery, where they are now making field test with our AC 132 separator ( file in hands of Eng. J. Ressureccion , team leader Jane Wallace). We already delivered in Nov. 2006, co6-20424, samples for the lab. Testings. The new request is in our schedule for end October, in the RES version ( 500 pcs )

#### 5) New chemistry

Energys is also involved in lithium ion and lithium metal batteries. However it is a small portion of their business. This is just to show that they are present on these markets.

#### 6) Woven sleeve as replacement of koroseal, glass mat etc....

Angel-hair (Hydramatic) is put around the positive plate. Then a compressible layer of glassmat is wound around the angel-hair. The whole is placed into the Koroseal sleeve. The positive plate is then placed into the PE sleeve. The PE separator is flat against the negative.

According to Georges, the cell stack compression is as high as 50 % based on the interplate spacing versus the thickness of all the ingredients. This level of compression is requested to reach the longevity (PAM of flat plate has to be very well constraint).

They have tried in the past the Amersleeve (corrugated + glass mat) but it gave poor results. Separator split and cracked. Negative mass expansion.

- Function of the boot: sediment are accumulating at the bottom of the cell. Although they are using prism, Georges Ayrton think that the boot is necessary to avoid short circuit in case the sediments come into contact with the bottom of the plate. The boot helps also to align the plates.
- Function of the angel hair: it creates a 3 dimensional access to acid and facilitates oxygen flow to the top of the plate and from there to the negative plate (create channel to allow degassing)
- Function of the glass mat layer: the glass mat allows a certain compression. They have 50% compression in traction cells.
- Function of the Koroseal: it is closed on the outmosts to prevent mossing on the sides (= side protection to prevent shorts); it allows that the glass mat do not become fluffy an enter in the separator ribs.



We told them that the oxygen can easily escape through the fabric pores (cf. in woven and non-woven gauntlets), as a consequence there is no need to have angel hairs. The glass mat can be laminated on to the separator by this way we keep the compressibility. Separator is flat and placed against the negative plate. If we use glassmat on the negative, we can provide separator with ribs on the negative for higher electrolyte reservoir, without risk of inter-ribs filling by the NAM expansion.

According to Dr. Borowski, the flat pattern on the negative plate is not a real drawback, as acid moves easily enough through the separator during charge and discharge. If no glassmat is applied on the negative side, any ribbed or corrugated separator used after a while will lead to the same situation anyway (no acid reservoir against the negative plate), because of the active mass expansion into the inter-ribbed spaces.

George thinks that edge protection would be needed on the polyester pocket, whatever it is, woven or non-woven. One possibility to avoid the edge protection on the polyester sleeve would be to sleeve the negative plate with the PE separator... we have to convince him to test polyester pocket with edge protection and leaf separator...

Georges Ayrton is prepared to test our concept, however he has limited resources in terms of money, people, lab testing facility. We have to give first a price indication. If it is more expensive no test. Having less components in the cell, Georges needs to work out the right compression. His idea is to test the woven fabric first. We have to make proposals. The following can be discussed :

Corrugated PVC/silica leaf, with glassmat on the negative? Glassmat would help to reach the requested compression without destroying the corrugated separator. (Glassmat against the negative would help to prevent) the active mass expansion...

Ribbed PVC/silica leaf with glassmat on the negative

Leaf PE or PVC flat pattern on negative side

Sleeve PE on the negative

Ref : current design ( see separate minute by UL)

## 7) Market

The general economy is slowing down. The demand is declining for 2-3 months. Usually the general economy is slowing down before the battery industry. The battery industry recovers after the general economy. This time slow down of the general economy and the battery industry is at the same time. Stationary market is down in Europe and still Ok in the US. The motive power market is dropping. Douglas is hurted badly and is running at the edges. After having sold their sli to EP they were now looking to find a partner for the industrial site.

The crisis will hit GNB more than East-Penn. Small players will disappear. At the beginning Enersys was a 400 million USD company today it is a 2 billion USD company. The pressure from Enersys top management on their employees is 10 fold more than when the lead price was very high. Daramic is linked by contract with Exide. Prices are fixed.

With all raw material price increase they have tried to revise their prices and almost denied the right of product to Exide. Finally that have kept their selling price to Exide however they have increase their prices to the industry and got back 9 million USD.

#### 8) AS03A

They were informed that we are passing only part of the surcharge for the higher resin content. With the increase of all raw materials we will be forced to increase our selling price. We have proposed several alternatives:

1. Reduce the resin content of the AS03A and or
2. Move to the AS09 range (AS09A). But according to Dr. Borowski the too low end of charge voltage is a blocking point. In addition to this the wet ability of the AS09 family seemed to be less compared to the AS03A. The absorption is a very sensitive topic due to the manufacturing process in Hagen. Pickling is made with a spray (first eventual pb).
3. For a new version of the AS 09, Borowski sticks to the regular test e.g. 1500 cycles, 2 c / day... but George/Larry were optimistic to bring this period to 1 year ( depending on the results collected within period)

Then after pickling, the washing is not efficient enough if the fabric is too hydrophobic. Then some minimum remains at the plate surface and lead to dirt in the plan (environmental and health). We proposed to treat the AS09A with a surfactant. Move to 145 g nominal weight instead of 150 g but keeps the same amount of resin than AS03A

Dr. Borowski prefers to move to 145 g. He would like to test the 145 g version but also 120g. He was told that the minimum is 125 - 130 g. Dr. Borowski is ok to test it.

#### 9) Traction gel

We have proposed to move from woven to the AS09 gauntlet. This idea has been rejected due to some problem in the past (traction gel cells sold for all traction application heavy duty, low duty. A lot of cells have been returned from the field. Now traction are sold only for low duty application).

#### 10) Approval of Tergar woven gauntlet

Mr. Bonduelle made a report about filling test carried out with samples sent under C08-22358. Mr. Bonduelle has no problem to sent the report for the two batch of samples 1766 and C08-22358.

11) Output of traction cells by plant

Dr. Borowski remains very evasive with new figures but they were producing following our sales between 80 / 100 K cells / month.

Georges Ayrton mentioned that Enersys USA is producing 7 000 cells / day. With 20 days / month approx 1,6 million traction cells in three factories.

Besides the information collected from the black scum by the pe in their translucent container, this topic was not discussed very deeply.  
In fact during the plant tour, the use of the raw materials was explained as the esbo and the pb sulphate.

They didn't report claims with our separators in recent times, we reconfirmed that since 2003 we are stabilising with esbo all our separators.

**Action:**

- Inform Gerry Bonduelle when stabilization has been implemented, which level, if we are stabilising separators supplied to Bulgaria, Germany, France, Italy and Poland (HD)
- Mail to Borowski the ELBC – VT as 09 - presentation (JMM)
- Hagen, check to have the volume of the OpzS bloc batterie, project UL for the pet bag (JMM)
- Stabilisation : # 1, inform them when we have started to stabilised, esbo and lead sulphate to Italy, Poland, Bulgaria (JMM)
- AS 03A . #8, organise samples with Borowski for the 145 gr and the lighter resin/polyester fabric (JMM)

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# MARKETING - SALES



6

RX1612

# SEPARATOR MARKET

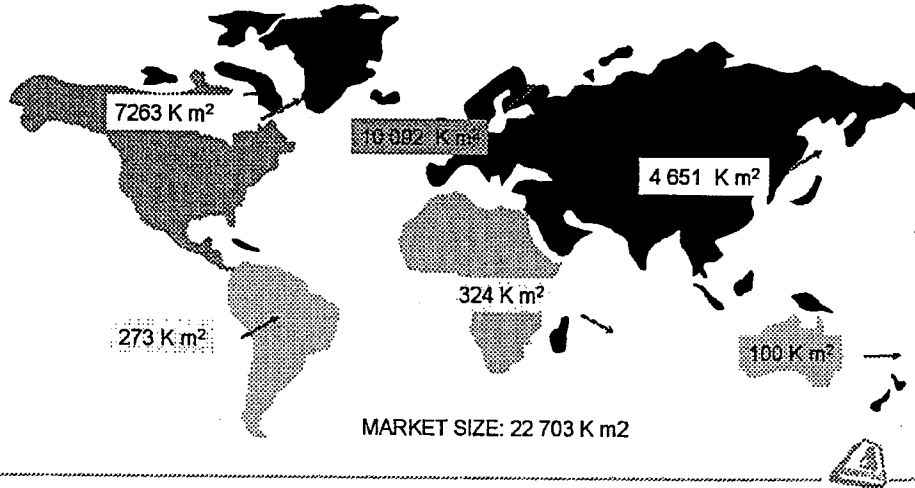


7

AMER-SIL S.A. - 2007 OPERATING MEETING

Marketing - Sales - SEPARATORS

**INDUSTRIAL MICROPOROUS SEPARATOR  
2006 World Market in K m<sup>2</sup>  
Flooded & Gel Batteries**



**THE 2006 MICROPOROUS BATTERY SEPARATOR MARKET**

**K €**

**EUROPEAN MARKET**

	<b>MARKET SIZE</b>	<b>AMER-SIL</b>	
<b>INDUSTRIAL</b>	<b>22 267</b>	<b>3 632</b>	<b>16%</b>

**OVERSEAS MARKET**

	<b>MARKET SIZE</b>	<b>AMER-SIL</b>	
<b>INDUSTRIAL</b>	<b>28 248</b>	<b>2 646</b>	<b>9%</b>

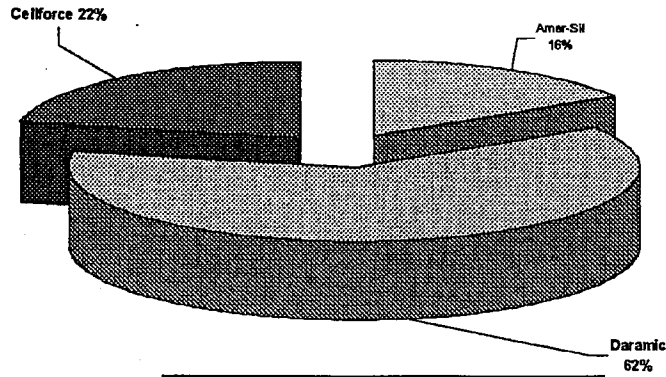
<b>TOTAL</b>	<b>50 515</b>	<b>6 278</b>	<b>12.4%</b>
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**2006 Competitive analysis**  
**EUROPEAN TRACTION SEPARATOR MARKET IN m2**

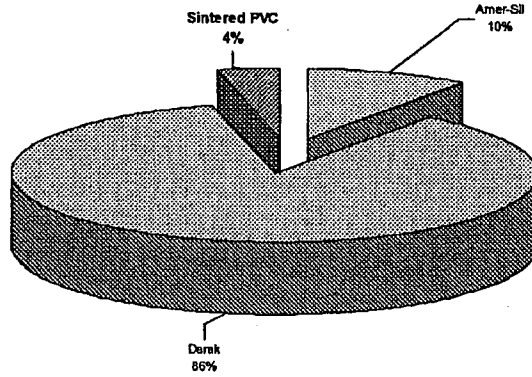


MARKET SIZE : 7 718 K M2  
TOTAL MARKET INDUSTRIAL: 10 092 K M2





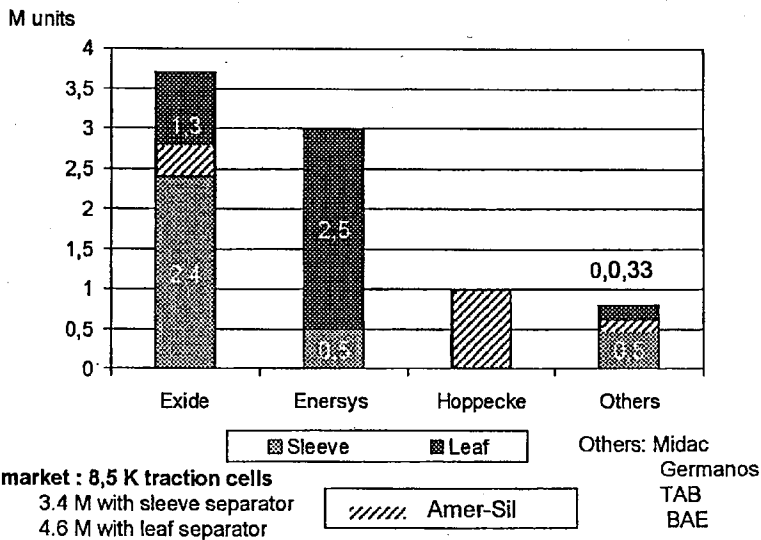
**2006 Competitive analysis**  
**EUROPEAN STATIONARY SEPARATOR MARKET IN m2**



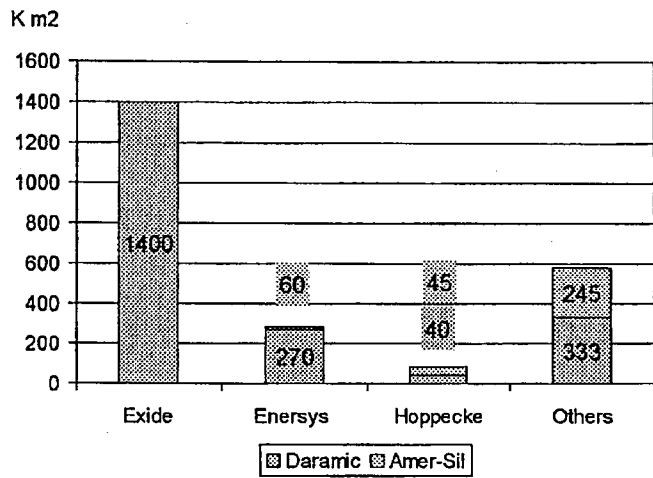
MARKET SIZE : 2 374 K m2  
TOTAL MARKET INDUSTRIAL: 10 092 K m2



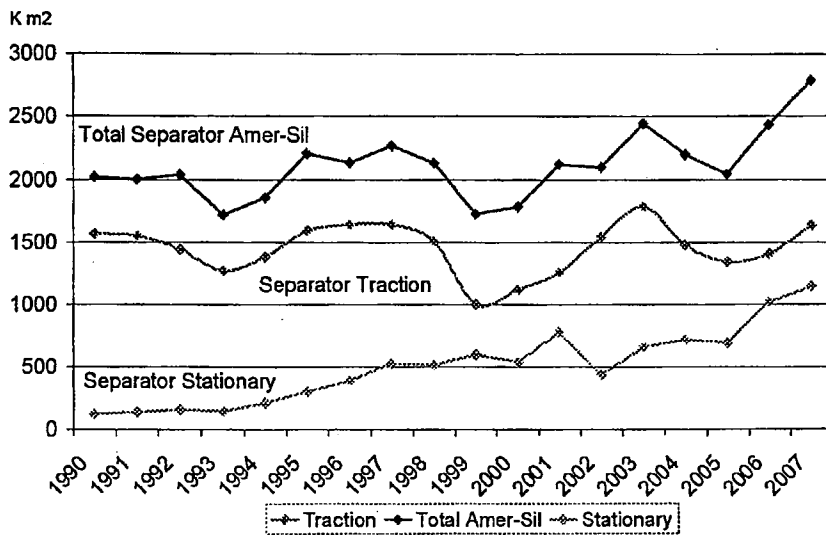
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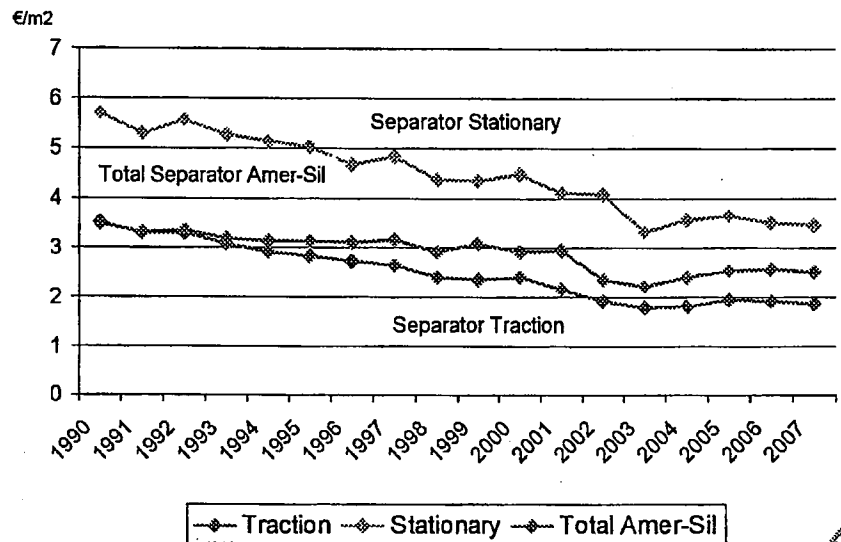
2006 EUROPEAN STATIONARY MARKET



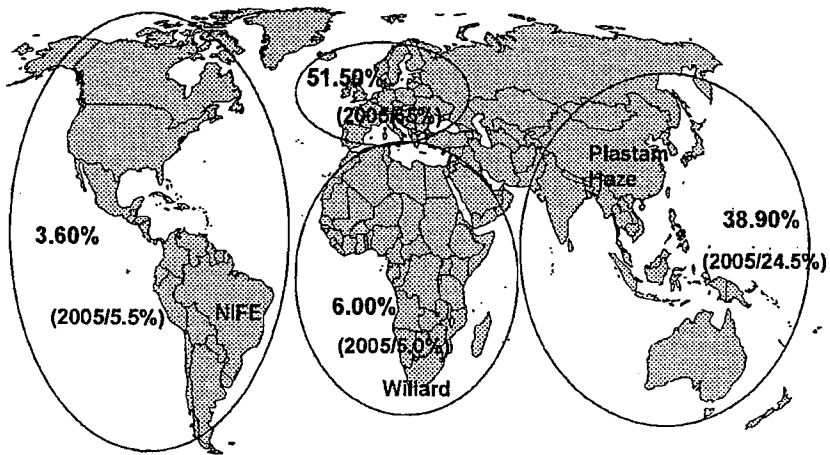
VOLUME AMER-SIL SEPARATOR HISTORY



### AMER-SIL SEPARATOR PRICE HISTORY



2006 AMER-SIL SALES BY REGION IN €



### SEPARATORS / GAUNTLETS – STRATEGIES

Goal : increase sales by 20% per year

Short term :

- Offer 2 - 3 year contracts
- Link separator and gauntlet proposals
- Drastically improve customer satisfaction : delivery, quality, flexibility, customer service
- Stabilise all our separators used in stationary applications
- Daramic's contract with Exide has been extended until 2009. Target is to start to supply Sonnenschein or Exide Portugal in gel monobloc batteries .
- Cut Tergar woven gauntlet with hot wire
- Reduce the variety of Tegar woven gauntlets
- Push AS09 material by aggressive pricing, test AS09AA for stationary cycling & gel applications
- Get approval for Tergar gauntlet at Enersys





## SEPARATORS / GAUNTLETS – STRATEGIES

### Long term :

- Transfer part of the corrugated separator production to China.  
It will give us a very strong advantage against the Darak separator (high delivery flexibility)
- Reduce our full cost in traction to 1,20 Euro / m2 to target the traction business
- Target the US market (Douglas, East Penn)
- Improve product features to create product differentiation (performance, cost)
- Offer improved delivery terms such as consignment stock and buffer stock for contractual customers (stock in Italy, Luxembourg, China)
- Get military certification for Tergar woven gauntlets



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## Growth at Amer-Sil White paper (confidential)

To : Peter Moore  
By : Guy Dauwe  
Date : 23 August 2007

Introduction	Page 1
Part 1 : Separators (without Exide)	Pages 2-3
Part 2 : Separators (Exide project)	Pages 4-5
Part 3 : Separators in Asia	Page 6
Part 3 : Non-woven gauntlets	Pages 7-8
Part 4 : Woven gauntlets and Tergar	1 page
Part 5 : Summary	1 page

### Introduction

Amer-Sil needs to grow to attain a "critical size". Today the structure is very heavy due to the complexity of our business : R&D, sales world-wide, highly technical products, two product lines, ... . As a consequence, for example, our personnel outlays are a very high 32,6% of sales.

In addition, our current size does not enable us to service the biggest (and most successful) customers in our niche. This obviously affects our long-term success. To put it in perspective : in 2006, we sold 105M lmt of gauntlets (85 Amer-Sil and 20M Tergar) and 2,3M m2 of separators. Enersys or Exide buy more than twice these volumes in Europe alone ! This means that we currently cannot be considered a potential key supplier for them.

In addition, I believe that our inherent product advantages and improvements will lead to significantly bigger market share. We also have strong market trends with us. In particular we have a very strong position in gel batteries; the inherent characteristics of battery usage in Asia make tubular gel batteries ideally suited for many applications (even more so than in US or in Europe). In such batteries only Darak or Amersil separators can be used and non-woven gauntlets.

Finally, we have an excellent starting position in developing markets with high growth rate (e.g., Asia).

I estimate this critical size at 20-25M€. Below you will find our plans to reach this critical size, via organic growth. It goes without saying that we are talking about profitable growth. Every step should increase our overall margin.

RX1613

Growth at Amer-Sil  
Part 1 : Separators (without Exide)  
Analysis and comments

**Separator growth (without "Exide project")**

At the end of June we have produced 1,43 M m<sup>2</sup>. This is much higher than ever before (compare with June 2006 : 1,22 M m<sup>2</sup>; in June 2005 : just short of 1M m<sup>2</sup>). Actually, today's production level was considered "impossible" with 3 lines only 2 years ago.

At the same time, we are now running close to capacity, with all 3 lines running 5 days a week and occasionally on the weekend. In addition, our orders are not smooth; a significant sales peak leads quickly to overtime and delivery difficulties.

Therefore we need to make the next, incremental step : investment in a horizontal extrusion screw ("compex") for line2.

This would give us an additional capacity of estimated 350k m<sup>2</sup> per year or, in other words, additional sales for about 800k€ per year. Such additional capacity is a proven fact : our line3 (with a similar horizontal extrusion screw) runs 20% faster than lines 1 and 2 for exactly the same products.

This modification is very similar to the set-up of line 3.

Several interesting opportunities exist for future growth. Most of these opportunities are already well-advanced and the chances of several ones materializing are high :

- Global (Korea) : Volume potential is more than 100k m<sup>2</sup>.
- Hoppecke (OpzV) : with the gained confidence in our products, they have now inquired for a quotation in their "toughest" product line, stationary gel. Volume is roughly 100k m<sup>2</sup> at a good price.
- China : market growing at 20% per year. We expect additional 100k m<sup>2</sup> of sales in 2008. Our growth may accelerate when we put a cutting machine in China.
- BAE : we are trying to gain access to a portion of their stationary separators (currently we are supplier for traction). Potential volume estimated at 100k m<sup>2</sup>.
- C&D (US Market) : Several opportunities identified during last visit. Idea is to finalize validation of Amersleeve with them. For specific opportunities, where they need extra capacity, we should be competitive even with bad exchange rate. Amersleeve is a much simpler solution which should be competitive. Overall volume potential is >500k m<sup>2</sup> but application is still 1 year away at least.
- India : development of market for gel separators, much like in China. At the moment still in its infancy.

Our separators are especially well-suited for so-called gel batteries. In order to make gel batteries work properly, high porosity and specific pore size are required. Today, only two separator qualify : Amer-Sil and Darak (from Daramic).

We believe that the particular conditions and uses of batteries in Asia will lead to big increase in gel batteries (much more than in US or Europe). The gel market in

Europe is already quite substantial as such batteries require no maintenance, no interventions during life time.

The main difference for the Asian market is that, on top of this advantage, batteries are nearly always cycled. For such applications, gel batteries are truly excellent. However they are much more difficult to make and that is what has slowed the introduction so far. But all signs are positive : many customers are trying to make gel batteries (with the help of consultants), customers have realized that other types are not adapted and the high lead costs reduce the price gap. Even better, best adapted are tubular gel batteries (with gauntlets). For cycling applications non-woven gauntlets present many advantages (see part 3).

### **Financial analysis**

Cost of this line modification is estimated at 504k€. There are several financial advantages :

1. Extra sales (main purpose)
2. Use of plastic extrusion screws; reduction of mechanical constraints (cost reduction of 18k€/year)
3. Higher yield and lower waste
4. Possibility to reduce backweb more
5. Equipment standardization and set-up time reduction

NPV with extra sales is 2,4M€ (only ten years considered!). Payback is 15 months.

Even without taking into consideration any extra sales, NPV is positive solely with increased efficiencies.

### **Conclusion**

Investment in new "compex" for Line2 is an excellent investment, with low risk and multiple advantages. The Net Present Value (NPV) is very high and the payback less than 2 years. Implementation planned for mid-2008.

All capital required will come from internal (Amer-Sil) cash-flow. It is important to note that we will try to reduce the total investment.

With a horizontal extrusion screw on L2, much like on L3, we would gain 350k m2 in extra capacity and improve operational efficiency as well. We need to do this urgently in order not to be "squeezed" with our production capacity.

## Growth at Amer-Sil

### Part 2 : Separators Exide

### Analysis and comments

#### Situation

Exide is the biggest manufacturer of stationary and gel industrial batteries. Currently, Energys is bigger in traction batteries. Overall, they are of comparable size and hold about 40% market share each.

However, for our products, stationary and gel batteries are much more interesting. Products are more complicated, carry much higher prices and margins and competition is limited. In addition, we expect growth in gel batteries to be higher than market growth. In these markets Exide is without any doubt the world-wide reference (brand-name : "Sonnenschein").

For the last 8 years, Exide has had an exclusive supply agreement with Daramic for its separators (and with Avoca for its non-woven gauntlets). This contract will end at the end of 2009. This long-term agreement was the consequence of Daramic buying PE separator line from Exide. However, the general sentiment at Exide today is that the contract terms are very disadvantageous to them.

To prepare the aftermath, Exide has launched a global separator project. Indeed, it takes a new supplier at least 2 years to be validated and bring capacity on-line. Before the current contract took effect, Amer-Sil was the main supplier of separators to Sonnenschein for telecommunications. Actually, Exide still buys a limited quantity (300k m2 or more than 10% of our volume) of separators for various applications (traction and stationary).

Their Request For Proposal (RFP) presents an absolutely unique chance for us to make a big step forward :

- High volume : 3M m2
- Multi-year contract : 3 to 5 years
- Best imaginable products : Sonnenschein gel and stationary (average price higher than current Amer-Sil average)
- Strategic importance : brand reputation and reduction volume Darak ; further opportunities exist
- Typically they are very technical and open to new ideas. Would be great help to introduce some new concepts

*We have answered their proposal and first feedback is very positive. Meeting to discuss proposal planned for Thursday 13 November at Exide headquarters in Atlanta. They will make final decision by year-end.*

At any rate, obtaining a piece requires significant capacity extension : installation of Line4 with capacity of more or less 3M m2 per annum. If the business obtained would be a lot smaller, we would attempt to downsize the investments to reasonably fit the opportunity.

## **Financial analysis**

Cost of this line4 installation is estimated at 7150k€. There are 3 sections :  
Building modifications (can be minimized or avoided) : 1000k€  
Equipment to reduce emissions (we are looking to reduce) : 650k€  
New line4 : 5500k€

We would try to get subsidies; no subsidies considered for the time being. In addition the investment figure may be too conservative; we are currently analysing in more detail in order to optimise (i.e., reduce) investments.

NPV is highly positive (+8,8M€ !) for the most-likely scenario, even when considering only a time-frame of 10 years. When taking into account 20 years, NPV increases to 16M€. Other scenarios give positive NPV as well.

For reference, lines 1 and 2 have been installed in the 70s, line 3 in 1991. Their useful life can safely be considered 50 years. The question whether our products will live this long makes sense then but most likely lead-acid batteries will be around for a long time to come. The biggest manufacturer of forklift trucks in Europe does not foresee any alternative for at least 10 years.

## **Conclusion**

Exide opportunity is an almost "ideal" opportunity from a business perspective. The NPV is very high. Implementation would only happen after contract from Exide. Final decision expected for October-November 2007, new line installation first half of 2009.

Internal cash-flow would be insufficient to support this project.

## Growth at Amer-Sil

### Part 3 : Separators in Asia

### Analysis and comments

As you know we have an ongoing project to put a cutting machine in China, at our partner Plastam (cf. e-mail in February). The main reason is to ensure quicker responsiveness for Chinese customers. Quick delivery is often a more critical parameter than price. Our customers participate in big tenders and once they win the order, they need to produce the fit-to-size batteries "yesterday".

As an example, nearly all our shipments to Haze are via airfreight ! In order to better satisfy Haze and reach other customers, we will do the cutting to size locally, for certain separators. This would require to have a semi-finished inventory in rolls in China, with quite a few part numbers.

Local cutting in Asia would improve our efficiency in Amer-Sil as a labor intensive step disappears (control and packing).

However, other improved iterations are possible. In particular most separators for Asia are corrugated. All corrugated separators are made from sheets with the same thickness. As a consequence, it is much more elegant to ship only a few types of separators to China and corrugate locally. This is much more cost effective but brings up some strategic considerations. In particular, we need to have a key local person to monitor quality and manage corrugation process technically. There is also a question about equipment ownership.

This leads very quickly to the question whether it doesn't make sense to create Amer-Sil China. This would answer the above questions. This year, our sales with China will surpass 2M€ (\$ 2,5 Million). With Hoppecke expanding, we expect to surpass 3M€ next year with growth likely to accelerate. Essentially we are paying Plastam's complete structure (estimated 100k€ per year today, and growing).

### Conclusion

It makes strategic sense to set up an operation in China. Our current sales in China have reached good size and continue to grow quickly. This approach would settle many outstanding questions on quality control, allow us to optimise logistics and maximize sales&profit and manage equipment ownership (see also part4).

Cost would likely be limited to an estimated 300k€ (internal funding). I can expand more on different options after the conference in China during my visit in Westerly on 13 September.



Growth at Amer-Sil  
Part 4 : Non-woven gauntlets  
Analysis and comments

**Gauntlet growth**

At the end of June we have produced 53,1M lmt. This is much higher than ever before (compare June 2006 : 43,8M lmt). However more free capacity is currently available. Several project are running to fill this capacity. Our capacity between sewing and forming operations is more or less balanced.

In summary, we expect to fill up this capacity in the near to mid-term future, and then some. Several opportunities exist to grow our market share significantly.

Hoppecke

First opportunity is Hoppecke. Today Hoppecke uses woven gauntlets exclusively, about 50M lmt per year. We do not supply Hoppecke at the moment. However, we are working with them to get 100% of their gauntlet business. Our chances are good as we are probably the only company able to convert them into non-woven gauntlets (which should give them a significant cost reduction as well as product advantages). Anyway, with the start-up of their plant in China and their running at 100% of capacity, this opportunity is coming around very slowly. The main blockage is the production director who doesn't want to change anything with fully occupied lines.

Hoppecke's owner is pro non-woven and has asked his team to identify any roadblocks and present a plan for introduction. At the same time, a final test in China was positive and we expect to start supplying Hoppecke China with non-woven gauntlets in the coming months.

We should also be able to get the remainder of their woven business (4M lmt ; see part 4).

Enersys

Our standing with Enersys has greatly improved since we have helped them with during the separator emergencies last year. In addition, they start to recognize that we are currently technical and commercial leader for gauntlets. In the beginning of this year, we have won the supply of their new business in Bulgaria. At the moment it is still very small but is scheduled to increase to 10M lmt in 2008 and 20M lmt in 2009. They intend to transfer their stationary and submarine production lines there in 2008.

In October, we will present a new multi-year proposal to increase our market share from 30 to 50% by focusing on specific products where we can offer a tangible advantage. This will represent a volume increase of roughly 25M lmt.

Exide

Their sole supplier is Avoca ; with the latest management change the old support for Avoca seems to be gone (retirement of Mr. Mark Stevenson who currently is a consultant and ... representative of Avoca). Exide Europe is currently preparing an RFP in order to split supply. We should have a good chance to become 2<sup>nd</sup> supplier. However, this will require investment in new sewing machine.

### Asia

In addition, there is a strategic need to put some forming equipment in Asia. Contrary to separators, with gauntlets you ship a lot of air as dense packing is impossible. Several western battery manufacturers have set up production facilities in China very recently (Hoppecke, Enersys, FAAM, ...); therefore local forming and cutting make sense.

They are taking their designs and with them need for non-woven gauntlets. With rapidly increasing volumes, it is strategically important to cut and form locally and lock up this market. This is also important to block local manufacturers to migrate from woven to non-woven quickly.

The Indian market – with existing volume – is opening up as well. In order to support expansion plans, the biggest Indian manufacturer – Exide India (no link with "Exide" !) – has requested us to put a forming machine in their plant. We would get access to their existing volume of traction batteries.

There is a fairly substantial gauntlet market in India today, all made with local woven gauntlets. A cooperation with Exide India would surely accelerate the transfer from local woven to high-quality non-woven gauntlets. In order to minimize risk and investment we would take an old, proven machine from Tergar with low capacity. If the project runs well we would replace by additional or bigger machine.

These expansions require several incremental

In general, we believe that the market in China and India will focus on tubular batteries. Given the applications, non-woven gauntlets are best-suited. Even better, best adapted are tubular gel batteries.

### Financial analysis

Cost of this line4 installation is estimated at 7000k€. There are 3 sections :

Building modifications (can be minimized or avoided) : 1000k€

Equipment to reduce emissions (we are looking to reduce) : xxx

New line4 : **5000k€**

We would try to get subsidies; no subsidies considered for the time being.

NPV with extra sales is **xxx**

NPV is highly positive for the most-likely scenario, even when considering a time-frame of 10 years. For reference, lines 1 and 2 have been installed in the 70s, line 3 in 1991. Their useful life can safely be considered 50 years. The question whether our products will live this long makes sense then but likely lead-acid batteries will be around for a long time to come. The biggest manufacturer of forklift trucks in Europe does not foresee any alternative for at least 10 years.

### Conclusion

It is important to have local forming & cutting operations in Asia. There is a clear opportunity in China to lock up the nascent market : Hoppecke China, Enersys, FAAM, local Chinese customers, ... . In India we have a cooperation proposal from

Exide India. These are all existing volumes which we currently do not have. Putting simple equipment locally would lock up these markets and set us up to capture the growth. In order to do this quickly, we would put one existing machine from Tergar in China and another one in India. In order to support our growth in Tergar, we need to develop a simple . If one or the other project does not work out, we have sufficient growth at Tergar, at Amersil or in Asia to use the capacity. Hence the risk is very low. If growth plans pan out as expected, more equipment transfer will be necessary later.

Growth at Amer-Sil  
Part 5 : Woven gauntlets (and Tergar)  
Analysis and comments

Situation at Tergar was and still is somewhat similar to Amer-Sil. The structure is too heavy relative to sales albeit for different reasons. Historically, Tergar was run in 1 shift. We have increased this gradually to 2 shifts with new customers (since March). The last few months our monthly volume has been nearly 50% higher than historically.

However it is not possible to run 3 shifts even though we could easily sell such volume, for two reasons. On the one hand, we are in a residential area and neighbours complain regularly for noise and odors. Even though we are within legal limits, running at night would exacerbate the problem. On the other hand, we struggle to find more workers.

In addition, we had/have heavy load of charges for the limited sales volume : Termar support, consulting fees Gianni, 3 indirect for 6-8 direct people, ... . We are making continued progress here and will continue to do so.

Developmental steps at Tergar :

Optimize layout and make Tergar more presentable - Done  
Enlarge product portfolio to include special types (new tools) - Done  
Accounting is not done anymore by Termar (Done in June)  
Centralize all ordering in Amer-Sil  
Consulting (finished in  
Move to new site to increase volume – 3 shifts  
Transfer HD volume to MF volume  
Release new type of MF fabric  
Optimize footprint – form non-woven in Italy for certain customers  
Find different sources for supply : yarn and impregnation  
Replace Giovanni and Renato (will retire in 1 respectively 3 years)

Midac

Today we have smaller portion of 4M lmt. However, they brought on-line a new machine; volume should be ours. In 2008, expected 6M lmt or more.

Hoppecke

Potential of additional 4M lmt. We have made competitive offer. Only one step away from final validation.

Energys

Potential of additional 12M lmt. Part of their woven business will be . We have made competitive offer.

Exide

We are trying to leverage separator business and get validated for OpZv application. Volume of 15M lmt at attractive prices.

South-America

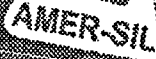
Growth at Amer-Sil  
Part 6 : Summary  
Analysis and comments

Many steps are small incremental steps which we can fund internally. They are the logical

NPV analysis for compex2  
NPV analysis for line 4  
Investment detail for line 4

If the Commission intends to disclose any of the following information in a final decision, please contact:

Michael Connolly, Esq.  
Hinckley, Allen & Snyder LLP  
28 State Street  
Boston, MA 02109-1775  
Phone: 617 345-9000  
Fax: 617 345-9020



AMER-SIL

# Amer-Sil S.A. 5-Year strategy plan

March 1st, 2008

A. Barber  
D. Barlow  
G. Bauwe  
B. Leach  
P. Moore

RX1614

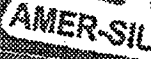


## Meeting purpose

1. Give historic, strategic and market background
2. Explain short-term growth opportunities
  - Is it worth it – NPV ?
  - Does it make sense – strategy ?
  - Are they realistic ? 'Too good to be true' ?
3. Show interconnectedness of opportunities
  - Can/should we do it all ?
4. ~~Obtain approval for strategic growth plan & funding~~
  - ~~Cash support (for Exide combination) – tax impact~~

5 Year Growth strategy : presentation



The logo for AMER-SIL, featuring a stylized triangle with a smaller triangle inside, and the text "AMER-SIL" below it.

## Meeting purpose : background

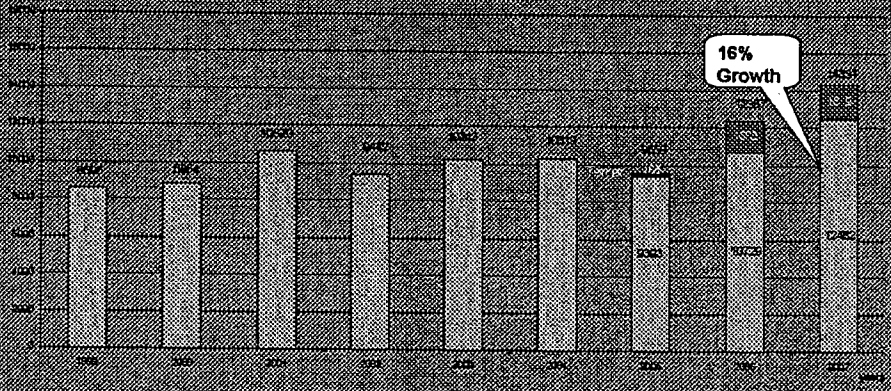
1. ~~Amer-Sil = untapped goldmine, crazy possibilities~~
2. Environment is changing fast
  - Asia
  - "Our situation = customers, competition (cf. budget)"
3. Opportunities are not new : worked on them a while
4. Presentation does not include value of known improvements (costs), nor new breakthroughs
  - We have a whole bunch of them
  - Focuses on world outside US cf. \$

5 Year Growth strategy : presentation



### Sales by year

Revised

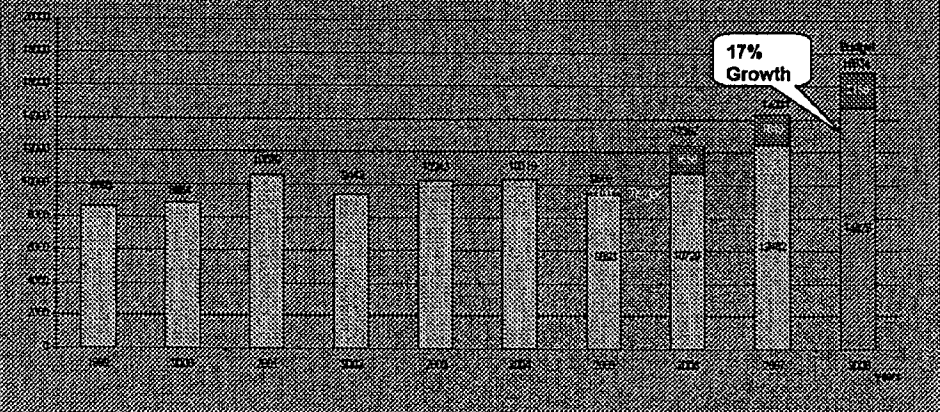


2008 Operating Meeting : Financials



Revised

### Sales by year



2008 Operating Meeting: Financials

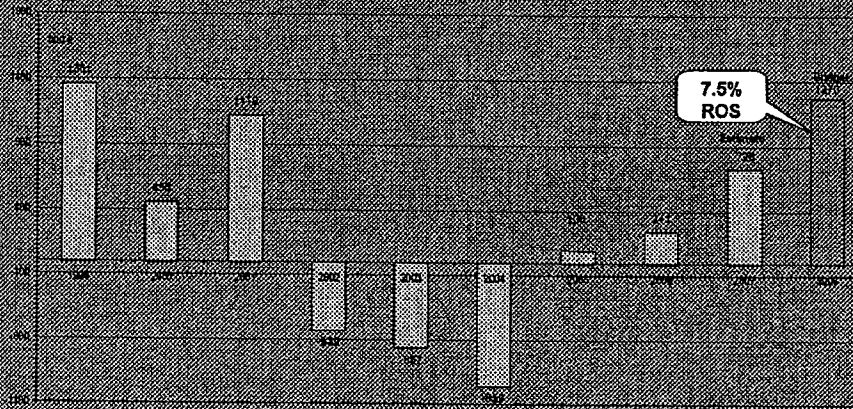


ROS

Revised

### Profit by year

Tergar included for 2006 and 2007



2008 Operating Meeting : Financials



## Market = Industrial batteries

Not SLI (automotive, bicycles, ...)

### Applications :

- Traction : forklifts, golf carts, sweepers
- Stationary : UPS, solar/renewable energy, telecom

### Product types :

- Flat plates (US) vs. *Tubular plate* (EU and rest)
- AGM vs. Flooded vs. gel
- US & European markets roughly equal in size but Asia fast growth

5 Year Growth strategy : presentation



## Market = Industrial batteries

### Applications:

- Traction : PE separators, PE/Rubber, PVC, Sintered PVC / Non-woven
- Stationary & gel : Phenolic (Darak), PVC, Rubber / Woven

### Product types:

- Leaf separators vs. Sleeved separators

5 Year Growth strategy : presentation



## Long-term strategy : what

### 1. World-wide leader in gauntlets

- Growth market
- Excellent position

### 2. World-wide leader in separators for gel batteries

- Strong growth market

### 3. Diversification

In numbers : 40M\$ sales and 10% profit (2010) (2008 : 26M\$ & 7.5%)

Present strategy got us there and beyond (>60M\$, >>10% profit by 2012)

5 Year Growth strategy : presentation



## Long-term strategy : how

1. Translate leadership position (cost, quality, technical, ...) into market share

- Operational excellence
- Technical innovation
- Move swiftly – speed of execution

2. Leverage both product lines

3. Provide solutions to business problems

4. Long-term relationships with customers and partners

5. Strengthen team and systems

6. Focus on high-growth areas (Asia, South America)

5 Year Growth strategy : presentation





## Competition : separators

### Big multinationals:

- Daramic (PE, Phenolic)
  - ✓ Darak : 3M m2
- Amerace (PE/Rubber, Rubber)
- Entek (quit industrial)
- ~~Clear PE separators (mainly Asian)~~
- Amer-Sil : 1.5M m2 stationary & 1.5M m2 traction : 3M m2 in total
  - ✓ Too small today to be real player except small niches

5 Year Growth strategy : presentation



## Competition : gauntlets

### Small family-owned companies, consolidating (2007, in M int):

■ Mecendor NW+W – succession?	220	
■ Ayeca NW (sewn)	150	
■ Amer-Sil NW+W (2005 : 80, 2006 : 105)	130	(175)
■ Wtarplast NW+W	45	
■ India W (3 known suppliers) but 11	40	
■ Texindus South-America W – succession?	10	
■ China W (2 known suppliers) but 11	20	
■ Korea W (2 known suppliers)	20	
■ Japan W (watch out for NSC)	80	

5 Year Growth strategy : presentation



## Competition : gauntlets

### Small family-owned companies, consolidating (in M. lmt):

■ Mecandor NW+W		220
1. Enersys NW+W	130 (60%)	
2. Hoppecke W	25 (10%)	
■ Ayaco NW (sewn)		150
1. Exide NW	150 (95%+)	
■ Amer-Sil NW+W		130
1. Enersys NW	45 (35%)	
■ Wiorplast NW+W		40
1. Hoppecke W	25 (60%+)	

5 Year Growth strategy : presentation



## Market : Customers

### 1. Strongly concentrated

- Exide and Enersys cover 70% of market in Europe (& world for gauntlets)
- Hoppecke distant third with 10%

### 2. Supply base often mono-supply

- Exide with Daranic and Avoca
- Enersys with Amerace and Mecondor (2007)
- Amer-Sil has relatively strong position with small players and world-wide

### 3. Important changes happening in supply base

5 Year Growth strategy : presentation



## Customer1 - Exide (1/2)

### 1. Most important customer industrial batteries

- Gauffels 150M NW, 25M W and ~~150M NW~~
- Absolute leader in gel batteries (Sonnenschein)
- Technically oriented : cost important cf. situation
- Were chapter 11 due to automotive part but doing better

### 2. Supply base nearly mono-supply

- Daramic contract stops 1 January 2010 (10 year contract)
- Strong wish of Exide to break up separator mono-supply
- Avoca monopoly opening up due to management change

5 Year Growth strategy : presentation



## Opportunity 1 - Exide Separators

### 1. Unique and fantastic opportunity - one-off

- Amer-Sil holds the trump card as only alternative to Danal
- Absolute leader in gel batteries (Sonnenschein) - high margin
- Technical leader - cooperation - Gelsil, technical lead vs. sleeve
- Separator capacity expansion is unavoidable (cf. China)
- long-term agreement possible

### 2. Entry on gauntlets

- Avoca monopoly opening up due to management change
- With strong separator position we can clean up gauntlets (Avoca)
- Important to check Avoca cl. in our backyard in Asia

5 Year Growth strategy - presentation



## Opportunity 1 - Exide

- 1. Volume of 3-3M m2 of annual sales of +8ME
  - 1000 separators @ 3M m2 at 1.05€/m2
  - 5000 separators @ 2.6M m2 at 2.67€/m2
- 2. Investment of 1ME or +10ME in new separator production line
  - Starting April 2009
  - Finished Q4 2009, SOP Q1 2010
  - Need Fulflex building (and manage our part ourselves)
- 3. Very positive NPV - +8 5ME (10 years) or +15ME (20 years)
  - High margin and plenty improvement opportunities (e.g. back web)

5 Year Growth strategy : presentation



## Customer 2 - Enersys

### 1. Most important customer gauntlets

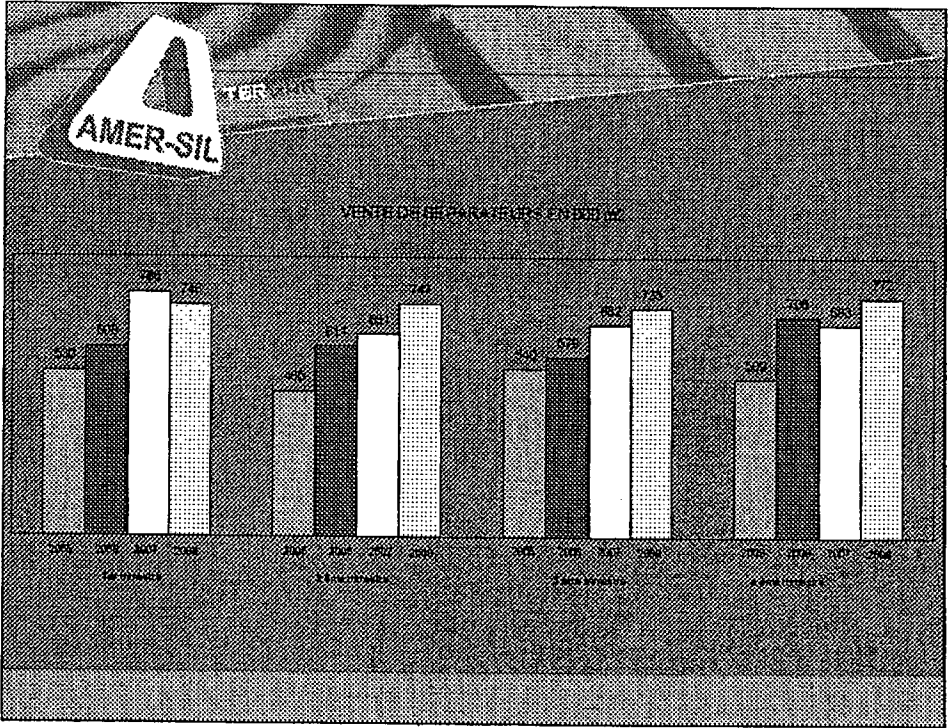
- Gauntlets 150M NW, 10M W and 50M separators
- Purchasing oriented, works via acquisitions

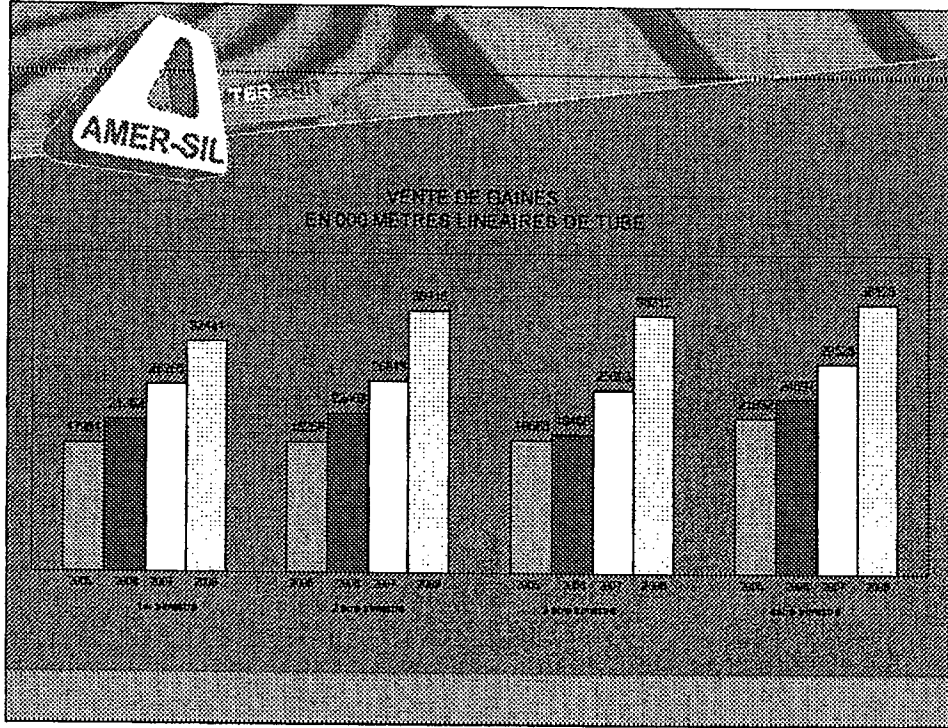
### 2. Supply base nearly mono-supply

- Recognize since 2006 our gauntlet leadership and help on separators
- Key for growth is Amer-Sil China - can leverage in Europe
- Gained 25M int gauntlets in Poland in 2008 (forming 5)
- Potential 2009 is +50M int (China, Poland, France)
- Enersys indicated willingness to sign a contract for China

5 Year Growth strategy : presentation









## Customer3 : Hoppecke

### 1. Most important customer for separators: family-owned

- Gauntlets 57M W and 1.2 m2 separators
- Technically oriented, excellent reputation
- Strong expansion in China – pet peeve of owner

### 2. Supply base dual supply Mecondor/Worplast

- Problems with Mecondor ?
- Would like to have forming machine for flexibility & Amer-Sil China

### 3. Amer-Sil is only company to offer such scenario

- Idea : Try somehow to get all volume (impact on Worplast)

5 Year Growth strategy : presentation



## Opportunity 2 : Gauntlets

### 1. Hoppecke forming@ (35M Inv):

- Investment of 240k€
- NPV of +664k€
- Annual sales of +1.4M€ (margin >20% full cost)
- Meeting beginning April (following proposal)

### 2. Exide sewing@ (35M Inv):

- Investment of 100k€
- NPV of +400k€
- Annual sales of +1.2M€ (margin 20% full cost)
- Waiting feedback and 'contract' cleanup - March April

5 Year Growth strategy : presentation



## Opportunity2 : Gauntlets

1. Relatively small investments
2. Relatively little work
3. Important leverage possible via China
4. More opportunities behind first steps
5. = Musts (but cash stress due to working capital)

5 Year Growth strategy : presentation



## Opportunity 3 : Amer-Sil China

### *Create more profitable growth and risk management*

- Protect and grow Haze business (N°1 customer China) -- Is tripling output
- Protect position vs. Darak - BB New
- Capture complete gauntlet market China cf. first to market
- Other opportunities (glassmat cost, ...)

### 1. Gauntlets Hoppecke & Enersys

Investment in forming & sewing (140k€ at first) : +1.1M€ in sales

### 2. Separator growth

Investment in forming & sewing (140k€ at first)

### 3. NPV : +1.5M€ (10 years)

Additional investment 200k€ in plant + fixed costs 200k€

5 Year Growth strategy : presentation



## Opportunity3 : Amer-Sil China

### *Strategy adjustment : Privilege gauntlets first*

- Capture extra sales quickly
- Easier to do -- validates new technology
- Capture complete gauntlet market China of first to market

### *Need to jump now (2008)*

- Human resources : at Amer-Sil and Platform (immediacy prevails)
- Customer opportunities & relations
- In 2008, Exits
- Critical to be first and leverage agreements

5 Year Growth strategy : presentation



## Growth - concrete opportunities

### 1. Concrete expansion - new line for Exide

- Sales of +8M€/year - Investment of 7M€
- NPV : +6.5M€

### 2. Gantlet expansion : forming 6, sewing 8

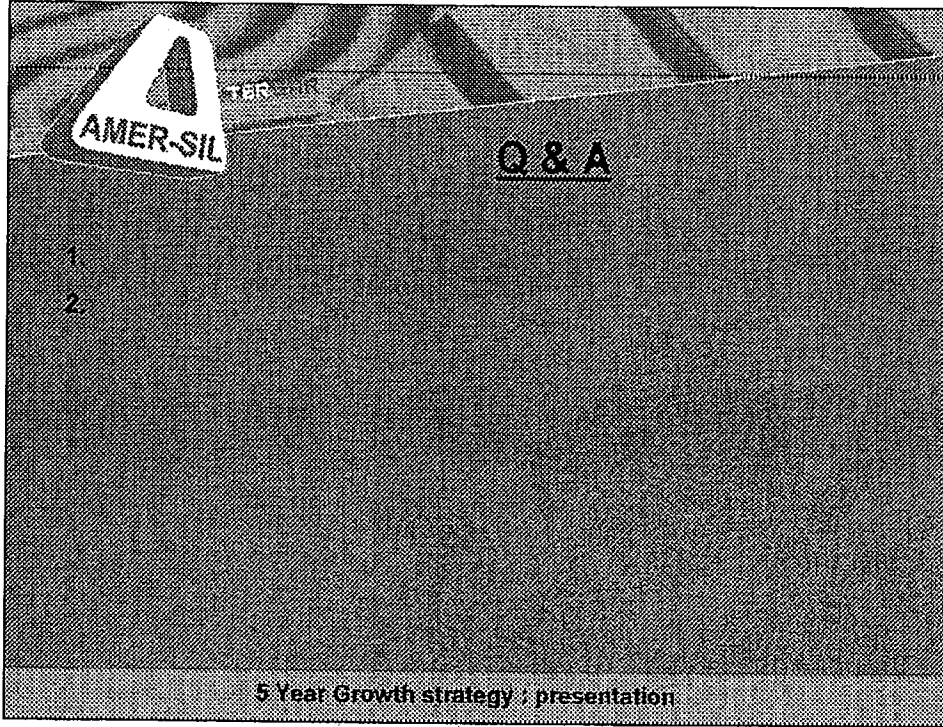
- Sales of +2.8M€/year - Investment of 0.4M€
- NPV : +1.1M€

### 3. Start of China : plant forming 7

- Sales of [+4M€/year] - Investment of 3M€
- NPV : +1.5M€

5 Year Growth strategy - presentation





If the Commission intends to disclose any of the following information in a final decision, please contact:

Michael Connolly, Esq.  
Hinckley, Allen & Snyder LLP  
28 State Street  
Boston, MA 02109-1775  
Phone: 617 345-9000  
Fax: 617 345-9020

---

**From:** Dauwe Guy  
**Sent:** Monday, March 31, 2008 1:29 PM  
**To:** 'larry.axt@enersys.com'  
**Subject:** RE: Enersys USA: Feedback regarding Amer-Sil separator

Dear Larry,

Following our conversation a few months ago, we try to pay great attention to our communication. In particular, on key subjects, any information is first addressed to you. As you can see below that was also the case for the separator information below. Unfortunately I now discovered we have two e-mail addresses for you in our system and therefore the message didn't arrive properly. My sincere apologies. Please be assured that we will keep improving until we surpass your expectations.

Your remark is well-noted, I will put Larry Burkert on copy of all separator or gauntlet issues, meetings or prices.

My apologies again, with my best regards,  
Guy

Guy Dauwe  
Managing Director Amer-Sil S.A.  
[amer-sil@amer-sil.com](mailto:amer-sil@amer-sil.com)  
Tel.: +352 30 92 82 1  
Fax: +352 30 83 75  
[www.amer-sil.com](http://www.amer-sil.com)

-----Message d'origine-----

**De :** Dauwe Guy  
**Envoyé :** lundi 17 mars 2008 18:42  
**À :** 'axtl@enersysinc.com'  
**Objet :** Separator considerations for motive market

Dear Larry,

Following our conversation concerning the latest Daramic move towards battery world domination, here are some facts for your consideration.

We believe Amer-Sil is well-placed to fill some of the void. For starters we know the industrial battery world very well and we have some very knowledgeable and respected people in our organisation. As you know, we are the only producer of two active battery components : separators and gauntlets. In addition, as we are focused only on the industrial side, our knowledge base is much deeper and our solutions very focused.

**In the motive market**, we are the exclusive supplier for the 3<sup>rd</sup> biggest industrial battery producer in Europe, who has a reputation for very robust and solid batteries. In addition, even though they have an 'exclusive' supply agreement, we currently supply your biggest competitor in the motive market in Europe. In preparation of the end of their current supply agreement, we are already validated for use in all their traction/motive applications. Importantly, we are currently validated for use in Enersys Poland and Enersys Germany. **I think this clearly shows that Amer-Sil separators are a valid and approved alternative for motive applications. More information is available.**

Given the \$/€ exchange rate, we currently do not supply the motive market in the USA. However, it is important to underline that the use of our motive separator leads to higher capacity. This advantage can be turned into lower lead consumption for the same performance. With today's lead prices this should be an important consideration. **In Asia**, we are the number 1 separator supplier for reserve power and gel applications. In general, we have a very strong position with small and medium-sized battery manufacturers.

RX1618

**Volume-wise**, our current free capacity is limited due to our growth. It is only 300-500k m2 per year (or roughly 20% of your needs in Europe).

However, we have already worked a lot on the possibility to expand our capacity significantly. Specifically, we would be able to add another 3-4 million m2. In order to do this we need roughly 18 months time and make capacity investments. Added capacity of 1-2 million m2 can be realized quicker, within 12 months.

Our motive separator today is not the same it was 5 years ago. Specifically, we have fixed (valid) past concerns and developed a much improved separator over the last few years.

With our separator, black scum issues do not exist. As mentioned above, electrical resistance is very low. And many more improvements are being worked on, for motive and reserve power applications.

If you have questions or would like more information, please do not hesitate to let us know.

With my best regards,  
Guy

Guy Dauwe  
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If the Commission intends to disclose any of the following information in a final decision, please contact:

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Fax: 617 345-9020

## Amer-Sil growth plan Non-organic growth opportunities

To : Peter Moore, Bob Leach  
CC : Dana Barlow  
From : Guy Dauwe  
Date : 2 July 2008

This report covers two out-of-the-ordinary growth opportunities for Amer-Sil :

1. Bernard Dumas
2. JV with Enersys for production of PE separators in the US

I will briefly describe both opportunities and next steps. I'd **welcome your opinion**. In any case, I will keep you in the loop on the actions. I am **pursuing cautiously with both opportunities. Prior to any binding steps** (which are uncertain at this point), **an in-depth discussion with you would be held**.

### 1. Bernard Dumas

I was called by a finance group mandated to sell Bernard Dumas. Dumas is part of the Arjo Wiggins Group ([www.arjowiggins.com](http://www.arjowiggins.com)), active in the paper industry. As they are hit by increasing energy costs – papermills being very energy hungry – they are restructuring. There has also been a change in top management recently.

Dumas is a producer of AGM separators and filters, and is in size comparable to Amer-Sil. In the past, Amer-Sil has twice tried to acquire Dumas. At the time, Amer-Sil was active in AGM production as well.

**To the extent that they are active in the same markets as Amer-Sil, we are very interested in learning more about Dumas. Therefore, I propose to participate in the process. The first step is non-binding anyway.**

Please find attached the information package they have sent. It is subject to stringent confidentiality rules (which I have signed). Most likely, nobody at Dumas is aware of this potential sale.

The process is a two-step process : non-binding offer and a binding offer for selected parties. Due date for the first step is end of July ( I have asked an extension). We can make a pro-forma offer.

For the in-depth analysis of this opportunity, I have enlisted our local expert, Gerard Chaix. I have sent a list with additional questions.

In general, we are very familiar with products and markets of Dumas. We share many customers, who buy Amer-Sil or Dumas separators depending on the battery type. The strategic reasons to be active in AGM separators hold true for Amer-Sil, even if we had to quit the AGM market. In this case, Dumas is a running and profitable factory with an established team.

RX1620

On a theoretical, the risks are : volume reduction, price erosion, raw material cost increases, required investments. The opportunities are : penetration into car market (AGM likely to replace traditional batteries in high-end due to emergence of start-stop engines in the next few years) and especially in hybrid electrical vehicles (cf. ALABC test results) as well as synergies with Amer-Sil.

Main competitors are H&V, US-based and NSG, Japan. In addition, there are several Chinese companies active, with AGM batteries for electrical bikes. Overall, Dumas is probably the technical leader. Given our diversification opportunities, their contacts into the filtration market would be interesting.

### **Enersys JV for PE separators**

In March 2008, Daramic acquired Microporous products ("Amerace"). In different words, the number 1 separator producer acquires number 2. This caused quite a shock in the lead-acid battery world.

For all purposes I am considering here the separator market outside AGM separators (see above); their main product is PE separators. Both companies are immediate competitors to Amer-Sil.

This consolidation leaves very little choice for customers. In the US, the combined market share is virtually 100%. Enersys, the number 1 player in the industrial battery market, has had major problems with Daramic recently and has signed a long-term agreement with Amerace. Other battery manufacturers are looking for Daramic alternatives as well.

Given the new development, Enersys' strategy is not valid anymore. As they cannot imagine being dependent on Daramic, they have approached Amer-Sil to see if we are interested in a JV to produce PE separators. They propose a JV to avoid having the same scenario happen again. Besides Amer-Sil, they have also approached Entek (PE separators for automotive applications only) and an Asian producer.

Setting up a new manufacturing site costs roughly 10-15M\$ for two lines with capacity of 8M m2 (total costs). For one line, cost may be around 10M\$ (building and production lines). Typical price per m2 is just below 2\$. Enersys requires several million of m2. Enersys said they have the technical contacts to set up the site.

**As a first step, Enersys proposed a confidentiality agreement which I have signed. Main purpose is to find out what Enersys exactly wants and keep an open high-level dialogue with one of our key customers.**

If you have any questions or comments, please let me know.

With my best regards,  
Guy

If the Commission intends to disclose any of the following information in a final decision, please contact:

Michael Connolly, Esq.  
Hinckley, Allen & Snyder LLP  
28 State Street  
Boston, MA 02109-1775  
Phone: 617 345-9000  
Fax: 617 345-9020



Dauwe Guy

---

De: Burkert, Larry [Larry.Burkert@enersys.com]  
Envoyé: jeudi 14 août 2008 20:46  
À: Dauwe Guy  
Objet: RE: Price proposal for woven gauntlets for US and meeting proposal-sp

Guy,

Attached are our North American PE requirements. I will have Europe and Asia in early September. Based on our calculations, 2 lines would be required. One in Europe and one in the U.S. would be preferred but is not necessary. It would make more sense to develop the line for Europe first due to your location and relationships with our engineers and plant personnel.

Regards,

LarryB

This email message and any attachments transmitted with it may contain confidential information and are intended only for the individual(s) to whom the message is addressed. If you have received this email message in error, please notify the sender by reply email and delete it from your system; you should not distribute or copy this email message or its contents. Any views or opinions presented in this email message are solely those of the author and do not necessarily represent those of EnerSys or its affiliates ("EnerSys"). No employee or agent is authorized to conclude any binding agreement on behalf of EnerSys with another party by email. EnerSys accepts no liability for the content of this email, or for the consequences of any actions taken on the basis of the information provided, unless that information is subsequently confirmed by EnerSys in a signed writing. The recipient should check this email and any attachments for the presence of any virus. EnerSys accepts no liability for any damage caused by any virus transmitted by this email message or any attachments.

EnerSys 2366 Bernville Road, Reading, PA 19605 [www.enersys.com](http://www.enersys.com)

RX1621

28/08/2008

AM 0069915

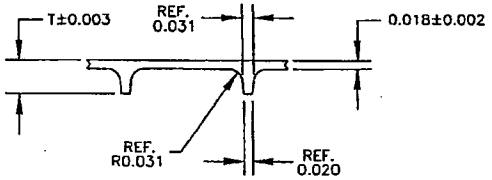
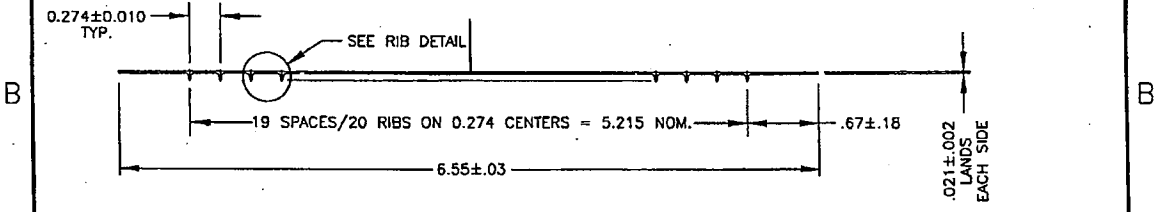
P/N	Quantity	Unit of Measure
202402	6 162 450	feet
202403	5 793 500	feet
811670	5 176 700	feet
811720	11 132 880	feet
818150	637 200	feet
818151	7 000	feet
818152	213 675	feet
612210	647 280	pieces
612212	677 813	pieces
613110	62 700	pieces
613115	126 000	pieces
SV070	622 375	feet
SV100	7 205 925	feet
SV110W	31 500	feet
SV125	413 250	feet

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202402/5

REV	ZONE	AUTH.	DATE	DESCRIPTION	BY	CHKD	APPD
A	ALL	402816	11/18/02	NEW ISSUE	GJ	CB	GJ
B	ALL	403168	2/26/03	WIDTH WAS 6.64	GJ	CWA	GWA
C	B2	403373	4/15/03	WIDTH 6.55 WAS 6.50 (LAND CHGD TO SUIT)	GJ	CFB	GJ



CAT. NO.	T
202402	.090
202403	.110
202404	(FUTURE)
202405	(FUTURE)

**RIB DETAIL**  
SCALE: 4X

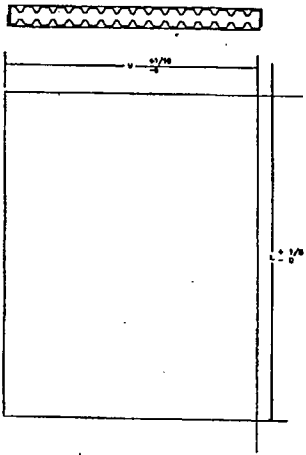
TITLE: SEPARATOR SLEEVE STOCK, FLAT PLATES, DARAMIC			
CUSTOMER/MATERIAL:		ENGINEERING DEPARTMENT READING, PA. 19605	
MICROPOROUS POLYETHYLENE PER P--004, SEC. 06.		AUTH. 402816	REF. N/A
REFER TO SLEEVE DWG. FOR CUTTING LENGTHS AFTER ASSEMBLY.		BY GJ	DATE 11/18/02
SCALE: FULL		ISSUE DATE 11/18/02	1 OF 1
S/M N/A		CODE N/A	ISSUE DATE 11/18/02
SIZE A		DRAWING NUMBER 202402/5	
		REV. C	

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TYPE	SUB/DWG #	SY 70 PART NO.	SY 90 PART NO.	SY 110 PART NO.	SY 100 PART NO.	SY 115 PART NO.	SY 120 PART NO.	SY 125 PART NO.	SY 140 PART NO.	EXT. LENGTH L	ROLLING RATE W
35F	305B42P16	SV070035	SV090035	N/A	N/A	N/A	N/A	N/A	N/A	9.88	6.12
55F	305B42P09	SV070055	SV090055	SV110055	SV100055	SV115055	SV120055	SV125055	N/A	13.12	6.12
60F	305B42P01	SV070060	SV090060	SV110060	SV100060	SV115060	N/A	SV125060	N/A	12.75	6.12
75F	305B42P02	SV070075	SV090075	SV110075	SV100075	SV115075	SV120075	SV125075	SV140075	17.25	6.12
85F	305B42P03	SV070085	SV090085	SV110085	SV100085	SV115085	SV120085	SV125085	N/A	17.50	6.12
100F	305B42P10	SV070100	SV090100	SV110100	SV100100	SV115100	N/A	SV125100	N/A	19.88	6.12
110F	305B42P04	SV070110	SV090110	SV110110	SV100110	SV115110	SV120110	SV125110	N/A	23.75	6.12
125F	305B42P05	SV070125	SV090125	SV110125	SV100125	SV115125	SV120125	SV125125	N/A	25.50	6.12
166F	305B42P17	N/A	SV090155	SV110170	SV100170	SV115170	N/A	SV125170	N/A	23.75	8.50
170F	305B42P17	N/A	SV090170	SV110170	SV100170	SV115170	N/A	SV125170	N/A	23.75	8.50
L	305B42P06	SV070060	SV090060	SV110060	SV100060	SV115060	N/A	SV125060	N/A	12.75	6.12
E	305B42P07	SV070085	SV090085	SV110085	SV100085	SV115085	SV120085	SV125085	N/A	17.50	6.12
X	305B42P08	SV070125	SV090125	SV110125	SV100125	SV115125	SV120125	SV125125	N/A	25.50	6.12
C	305B42P11	SV070100	SV090100	SV110100	SV100100	SV115100	N/A	SV125100	N/A	19.88	6.12



GENERAL DATA		(INCHES)	
MATERIAL	INDUSTRIAL TYPE	MICROPOROUS POLYETHYLENE	
OVERALL THICKNESS CAPABILITY		.070, .090, .100, .110, .115, .120, .125, .140 ± 0.005	
BACKWEB THICKNESS CAPABILITY		0.070 = 0.020 ± 0.005	
HEIGHT (LENGTH) CAPABILITY		0.090, 0.100, 0.110, 0.115, 0.120, 0.125, 0.140 = 0.020 ± 0.005	
WIDTH CAPABILITY		ROLL FORM	
EDGE BORDER WIDTH		8.50 ± 0.080 (155F & 170F), 6.50 ± 0.060 (ALL OTHERS)	
EDGE BORDER WIDTH TO REMAIN CONSISTENT THROUGHOUT ROLL		0.715 ± 0.188	
FOR REFERENCE ONLY			
NUMBER OF RIBS/SPACING		20 RIBS AT @ 0.274	
RIB WIDTH TOP/BOTTOM		(.024/.034) TO (.026/.037)	
COLOR		DARK GREY	

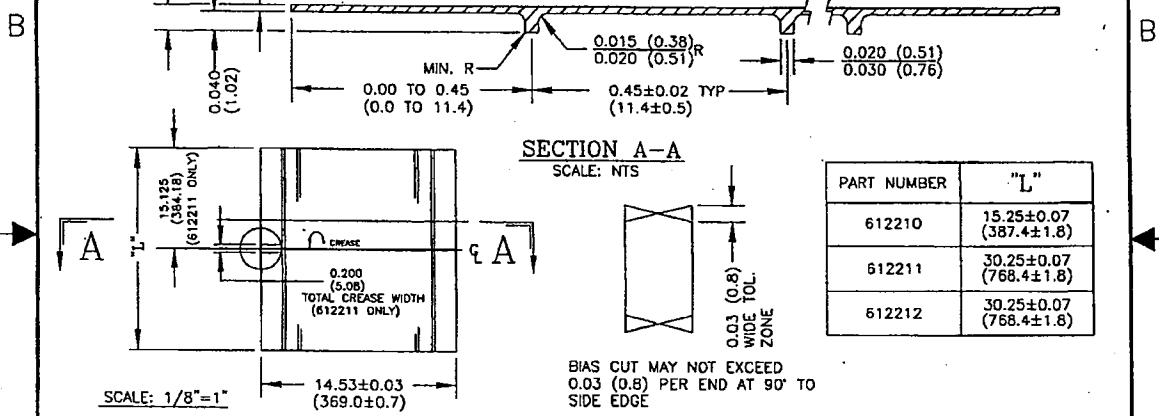
DWG. REV. NO.	TITLE:	DFTM:	APPD. BY:	REC. BY:	DWG. NO.
<ul style="list-style-type: none"> <li>1- CHANGED TO RIBS TO RIBS WITH MAJOR DIMENSIONS 7/23/91 SH.</li> <li>2- CHANGED TO RIBS TO RIBS WITH MAJOR DIMENSIONS 7/23/91 SH.</li> <li>3- CHANGED TO RIBS TO RIBS WITH MAJOR DIMENSIONS 7/23/91 SH.</li> <li>4- CHANGED TO RIBS TO RIBS WITH MAJOR DIMENSIONS 7/23/91 SH.</li> <li>5- CHANGED TO RIBS TO RIBS WITH MAJOR DIMENSIONS 7/23/91 SH.</li> <li>6- CHANGED TO RIBS TO RIBS WITH MAJOR DIMENSIONS 7/23/91 SH.</li> <li>7- CHANGED TO RIBS TO RIBS WITH MAJOR DIMENSIONS 7/23/91 SH.</li> <li>8- CHANGED TO RIBS TO RIBS WITH MAJOR DIMENSIONS 7/23/91 SH.</li> <li>9- CHANGED TO RIBS TO RIBS WITH MAJOR DIMENSIONS 7/23/91 SH.</li> <li>10- CHANGED TO RIBS TO RIBS WITH MAJOR DIMENSIONS 7/23/91 SH.</li> <li>11- CHANGED TO RIBS TO RIBS WITH MAJOR DIMENSIONS 7/23/91 SH.</li> <li>12- CHANGED TO RIBS TO RIBS WITH MAJOR DIMENSIONS 7/23/91 SH.</li> <li>13- CHANGED TO RIBS TO RIBS WITH MAJOR DIMENSIONS 7/23/91 SH.</li> <li>14- CHANGED TO RIBS TO RIBS WITH MAJOR 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AM 0069918

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1 612210/12

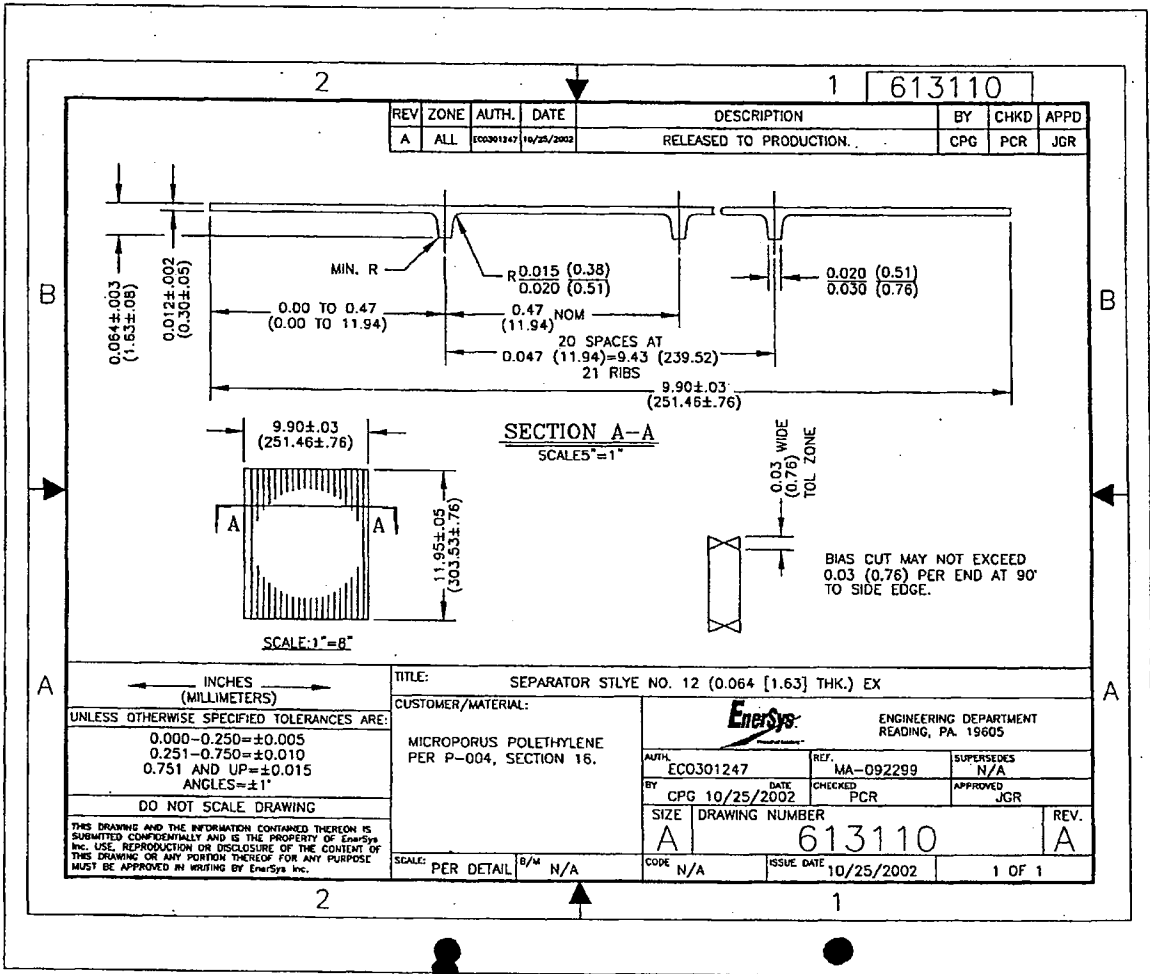
REV	ZONE	AUTH.	DATE	DESCRIPTION	BY	CHKD	APPD
A	ALL	ECO301194	08/27/2002	RELEASED TO PRODUCTION.	CPG	PCR	JRR
B	B2	ECO301204	08/09/2002	CORRECT DIM., 15.125 WAS 15.00.	CPG	PCR	JRR
C	A1	301478	01/16/94	ADDED P/N 612212	RDA	JRR	JRR



INCHES (MILLIMETERS)	<b>TITLE: SEPARATOR STYLE #24 (0.052 THICK)</b>	
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE: 0.000-0.250=±0.005 0.251-0.750=±0.010 0.751 AND UP=±0.015 ANGLES=±1°	<b>CUSTOMER/MATERIAL:</b> MICROPOROUS POLYETHYLENE PER P-004, SECTION 16.	ENGINEERING DEPARTMENT READING, PA. 19605
<b>DO NOT SCALE DRAWING</b>  <small>THIS DRAWING AND THE INFORMATION CONTAINED THEREON IS SUBMITTED CONFIDENTIALLY AND IS THE PROPERTY OF EnerSys Inc. USE, REPRODUCTION OR DISCLOSURE OF THE CONTENT OF THIS DRAWING OR ANY PORTION THEREOF FOR ANY PURPOSE MUST BE APPROVED IN WRITING BY EnerSys Inc.</small>	AUTH: ECO301194 BY: CPG DATE: 08/27/2002 SIZE: A	REF: 606180/1 CHECKED: PCR DRAWING NUMBER: 612210/12 SUPERSEDES: N/A APPROVED: JRR REV: C
SCALE: NONE	B/M: N/A	CODE: N/A ISSUE DATE: 08/27/2002 1 OF 1

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REV	ZONE	AUTH.	DATE	DESCRIPTION	BY	CHKD	APPD
A	ALL	ECO301247	10/25/2002	RELEASED TO PRODUCTION.	CPG	PCR	JGR

INCHES  
(MILLIMETERS)

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:

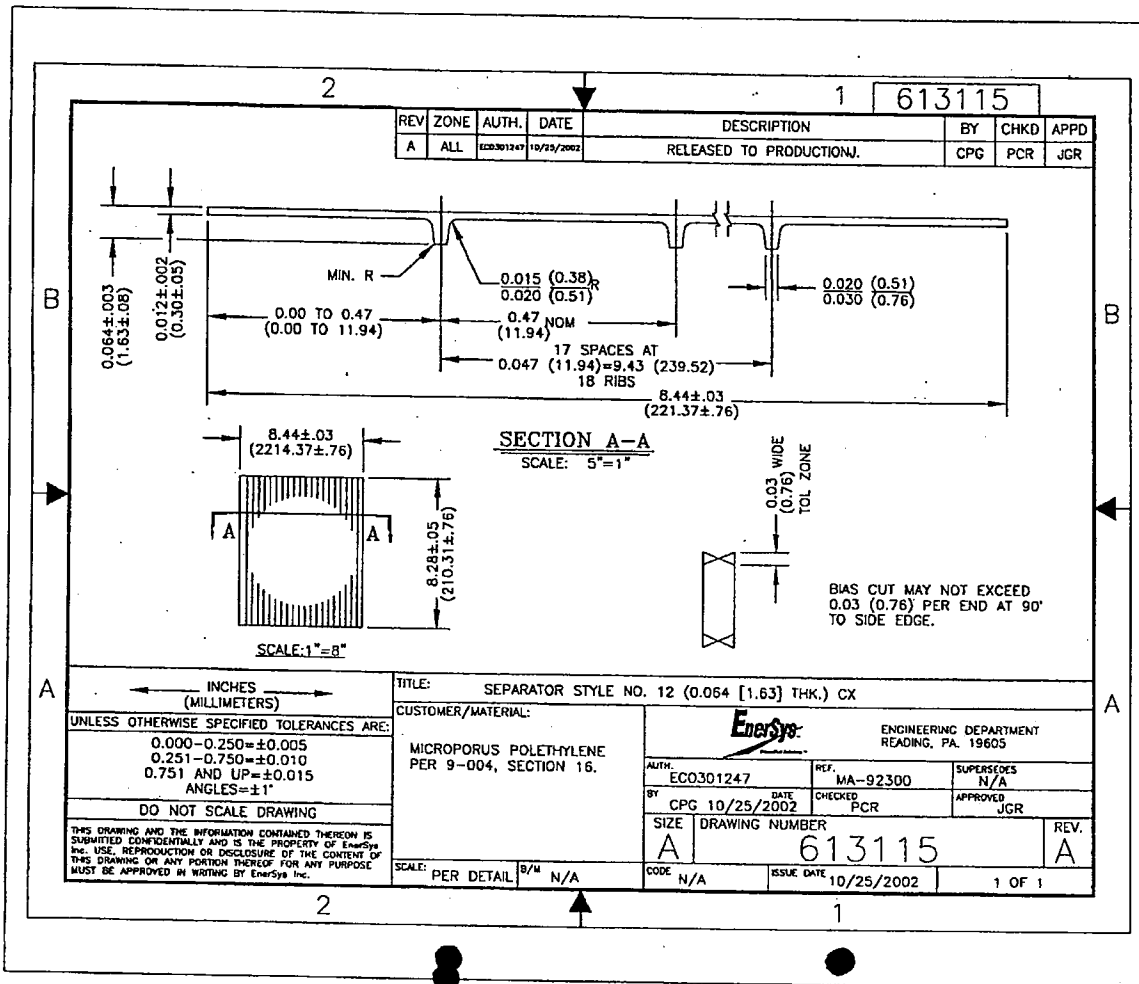
0.000-0.250 = ±0.005  
 0.251-0.750 = ±0.010  
 0.751 AND UP = ±0.015  
 ANGLES = ±1°

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TITLE: SEPARATOR STLYE NO. 12 (0.064 [1.63] THK.) EX		ENGINEERING DEPARTMENT READING, PA. 19605	
CUSTOMER/MATERIAL: MICROPOROUS POLETHYLENE PER P-004, SECTION 16.		EnerSys	
AUTH: ECO301247	REF: MA-092299	SUPERSEDES N/A	
BY: CPG	DATE: 10/25/2002	CHECKED: PCR	APPROVED: JGR
SIZE: A	DRAWING NUMBER: 613110		REV: A
SCALE: PER DETAIL	S/M: N/A	CODE: N/A	ISSUE DATE: 10/25/2002
		1 OF 1	

AM 0069920



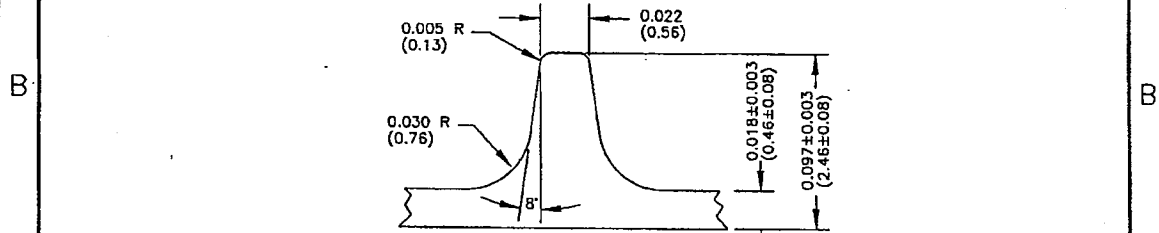
AM 0069921

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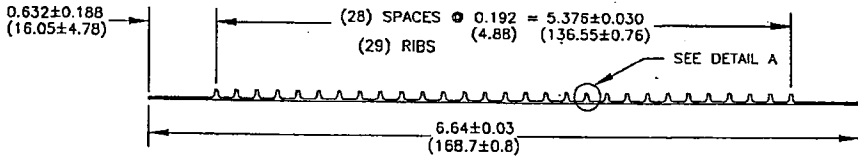
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811670

REV	ZONE	AUTH.	DATE	DESCRIPTION	BY	CHKD	APPD
A	ALL	734-95	2/9/96	RELEASE FOR PRODUCTION	KRH	GJ	GJ
B	ALL	401044	7/31/01	REVISED FOR COST REDUCTION, .018 WAS .020	LAM	GJ	GJ



**DETAIL A**  
SCALE: 20:1



TITLE: SEPARATOR SLEEVE STOCK (0.097). DARAMIC			
CUSTOMER/MATERIAL:		ENGINEERING DEPARTMENT READING, PA. 19605	
MICROPOROUS POLYETHYLENE PER P-004, SECTION 06 REFER TO SEPARATOR SLEEVE ASSY DWG FOR CUTTING LENGTH		AUTH. ECR 734-95	REF. N/A
		BY KRH 2/8/96	DATE 2/8/96
		CHECKED GJ	SUPersedes N/A
		APPROVED GJ	
SCALE: FULL	B/M N/A	SIZE A	REV. B
		CODE N/A	DRAWING NUMBER 811670
		ISSUE DATE 2/8/96	1 OF 1

INCHES  
(MILLIMETERS)

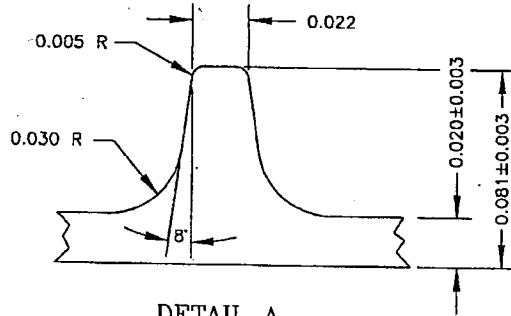
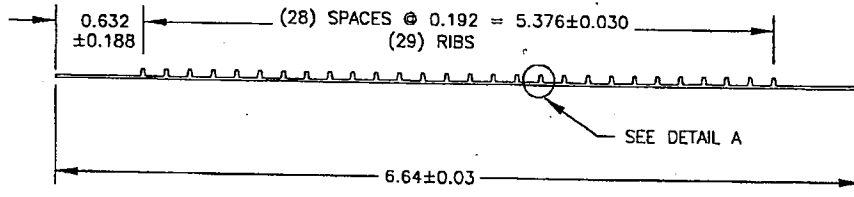
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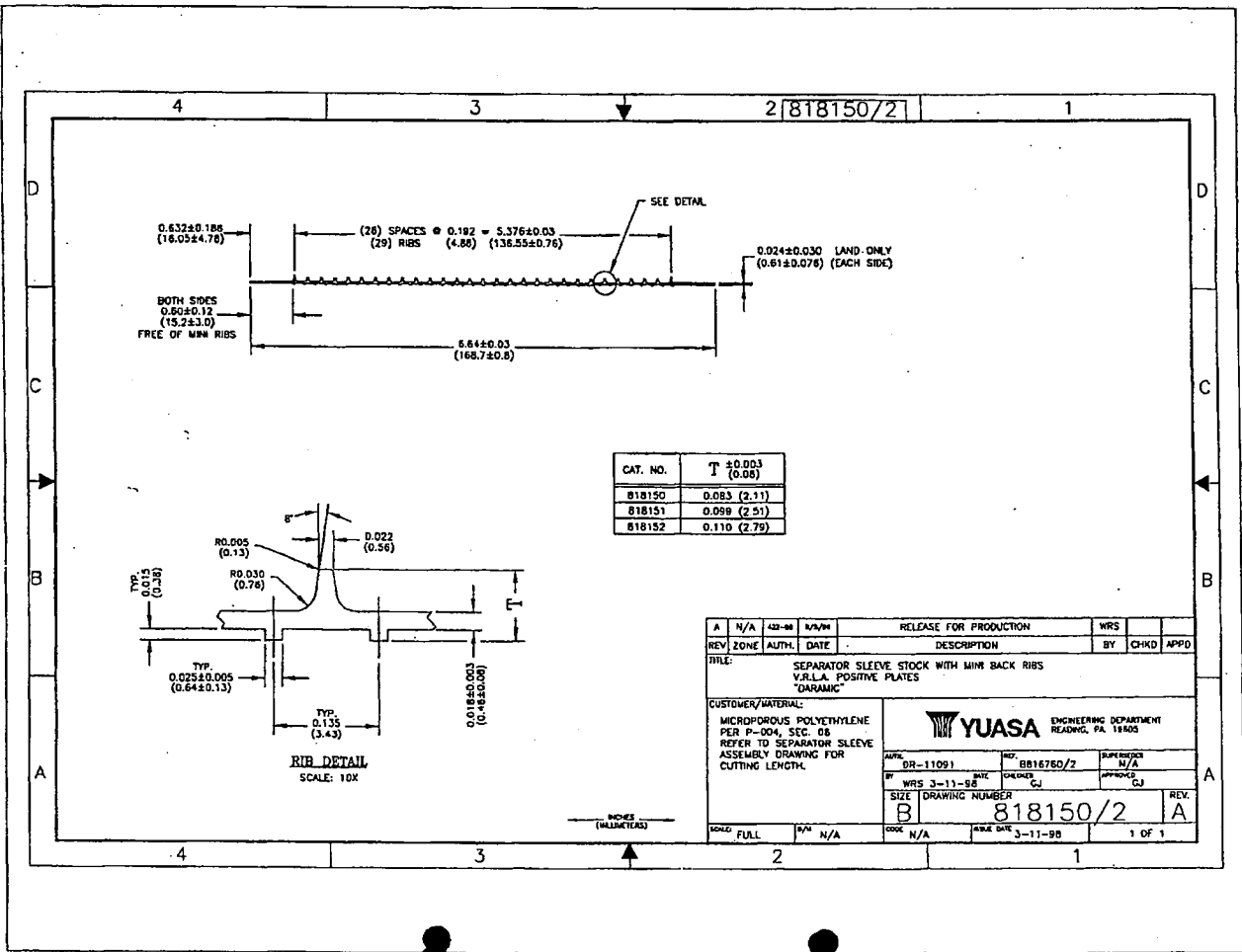
811720



**DETAIL A**  
SCALE: 20"=1"

				TITLE: SEPARATOR SLEEVE STOCK (0.081), DARAMIC			
				MATERIAL: MICROPOROUS POLYETHYLENE PER P-004, SECT 06 REFER TO SEPARATOR SLEEVE ASSY. DWG. FOR CUTTING LENGTH			
						ENGINEERING DEPARTMENT READING, PA. 19601	
A	2/8/96	ECR734-95	RELEASE FOR PRODUCTION	KRH	GJ	ECR734-95	N/A
REV.	DATE	AUTH.	DESCRIPTION	BY	APPR.	CHECKED	APPROVED
						GJ	
						SCALE: FULL	B/W: N/A
				SIZE: A		DRAWING NO. 811720	
				CODE: N/A		ISSUE DATE: 2/8/96	
						REV. A	

AM 0069923



AM 0069924

If the Commission intends to disclose any of the following information in a final decision, please contact:

Michael Connolly, Esq.  
Hinckley, Allen & Snyder LLP  
28 State Street  
Boston, MA 02109-1775  
Phone: 617 345-9000  
Fax: 617 345-9020

---

**From:** Dauwe Guy  
**Sent:** Wednesday, November 26, 2008 11:37 AM  
**To:** Lambert Urbain; Bayard Aurélie  
**Cc:** Lembree Valérie  
**Subject:** TR: My phone message - Product presentation

De : Michael Fraley [mailto:MFraley@crownbattery.com] Envoyé : mercredi 26 novembre 2008 15:47 À : Dauwe Guy Cc : Al O'Neal; Aaron Smith Objet : RE: My phone message - Product presentation

No problem on 12/8/08.

We will review the confidentiality agreement before then.

Al O'Neal is our IND Superintendant in charge of motive power production Aaron Smith is our Manufacturing Engineer who works very closely with me

Thanks

Mike

-----Original Message-----

From: Dauwe Guy [mailto:Guy.Dauwe@amer-sil.com]  
Sent: Wednesday, November 26, 2008 8:37 AM  
To: Michael Fraley  
Cc: Al O'Neal; Aaron Smith  
Subject: RE: My phone message - Product presentation

Dear Mike,

I propose to meet on Monday 8 December at 9h00 or 9h30 in Fremont. Can you confirm this is OK? The main purpose of our visit would be to present our new product for US motive power (flat plate), from a technical and commercial perspective. In addition we would like to see your manufacturing operation (to understand better and propose the right solution). Finally, we'll give a brief overview of Amer-Sil.

For our new product, we require that we sign a confidentiality agreement (attached); you can change the name for Crown Battery.

We'll be three : Urbain Lambert (director of technology), Aurelie Bayard (sales manager) and myself. For my understanding, what are Al O'Neal and Aaron Smith's roles within Crown?

With my best regards,

Guy

Guy Dauwe

Managing Director Amer-Sil S.A.

RX1623

Tel.: +352 30 92 82 41 (direct)

Fax: +352 30 83 75

guy.dauwe@amer-sil.com

amer-sil@amer-sil.com

Website : www.amer-sil.com

De : Hal Hawk [mailto:HHawk@crownbattery.com] Envoyé : lundi 24 novembre 2008 19:25 À :  
Dauwe Guy Cc : Michael Fraley; Al O'Neal; Aaron Smith Objet : RE: My phone message

I would start with Mike, Hal

From: Dauwe Guy [mailto:Guy.Dauwe@amer-sil.com]  
Sent: Monday, November 24, 2008 1:05 PM  
To: Hal Hawk  
Subject: My phone message

Dear Hal,

We have developed a completely new product for flooded motive batteries that should be of interest to Crown (i.e. performance increase & cost reduction). Who should I contact at Crown Battery, on purchasing and technical side to discuss this? I will be in the US in two weeks and could visit on 8 or 9 December. We also produce battery separators.

With my best regards,

Guy Dauwe

Guy Dauwe

Managing Director Amer-Sil S.A.

Tel.: +352 30 92 82 41 (direct)

Mobile : +352 621 21 30 51

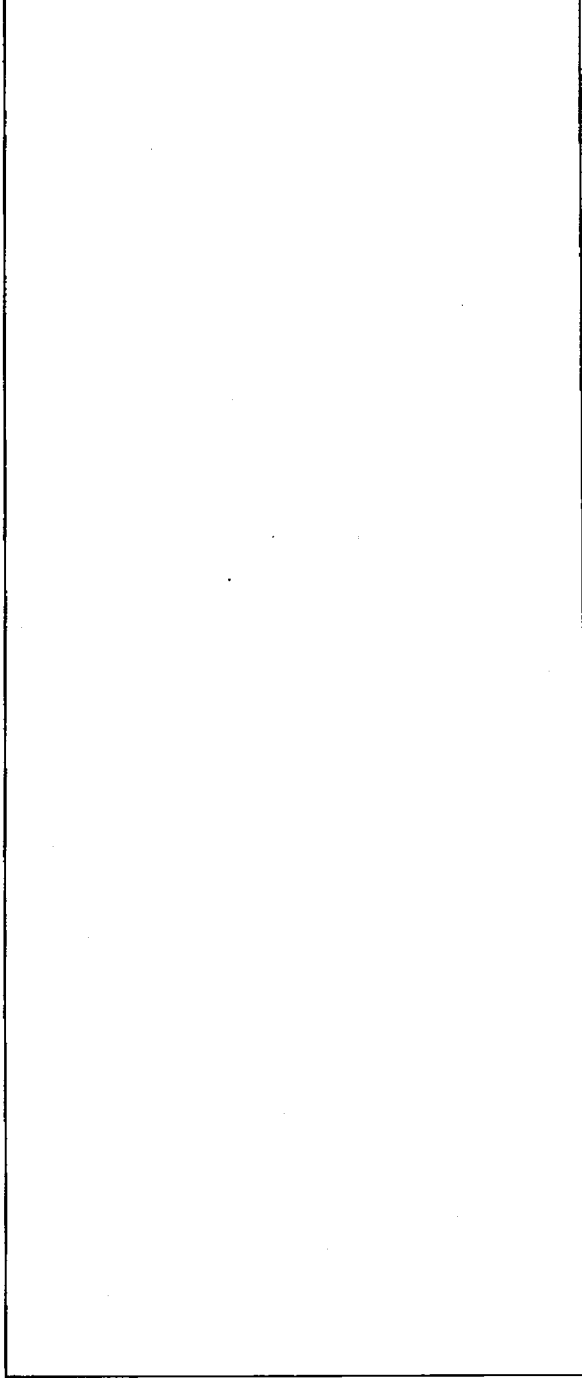
Fax: +352 30 83 75

guy.dauwe@amer-sil.com


Website : www.amer-sil.com

If the Commission intends to disclose any of the following information in a final decision, please contact:

Michael Connolly, Esq.  
Hinckley, Allen & Snyder LLP  
28 State Street  
Boston, MA 02109-1775  
Phone: 617 345-9000  
Fax: 617 345-9020



RX 1628



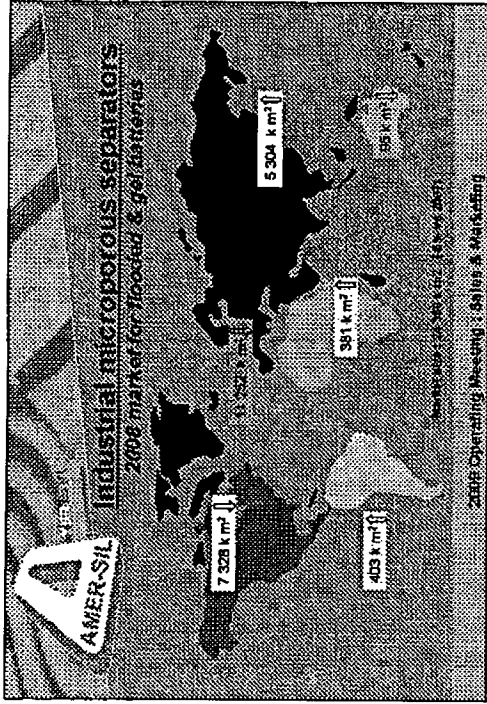
## The Battery Market


- Different Characteristics & Usability
  - Emergency Lighting (E-1000)
  - Standby Power (E-1000)
  - Power Source (E-1000)
  - Standby Power (E-1000)
- The Standby Power (E-1000)
  - Standby Power (E-1000)
  - Standby Power (E-1000)
  - Standby Power (E-1000)
- Standby Power (E-1000)
  - Standby Power (E-1000)
  - Standby Power (E-1000)
  - Standby Power (E-1000)

2000-2001 Operating Manual - Sales & Marketing





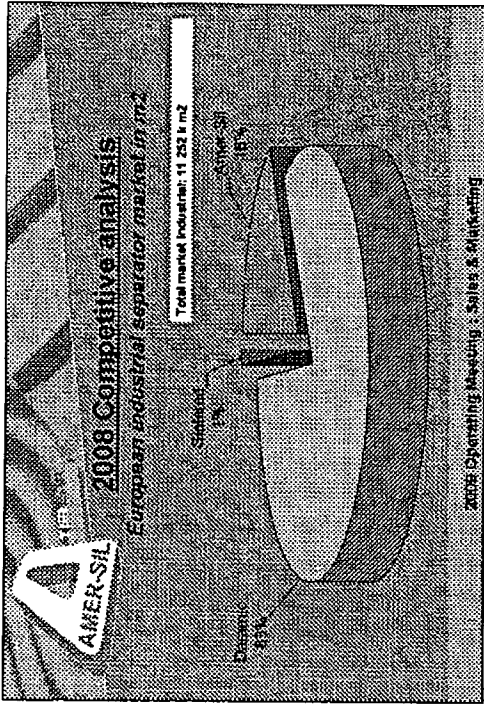


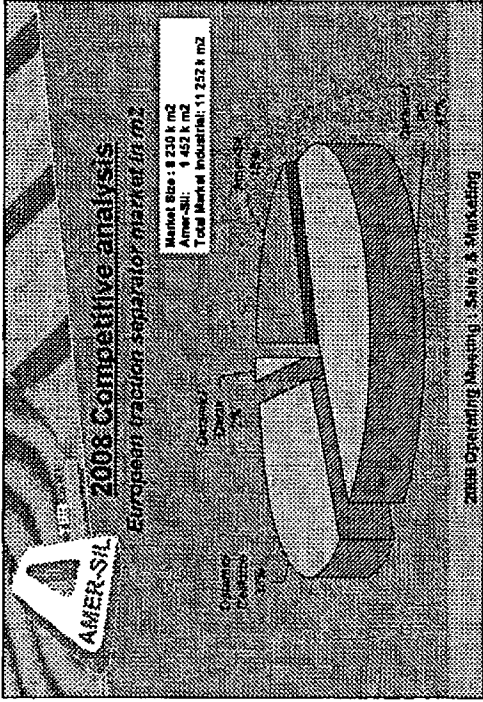


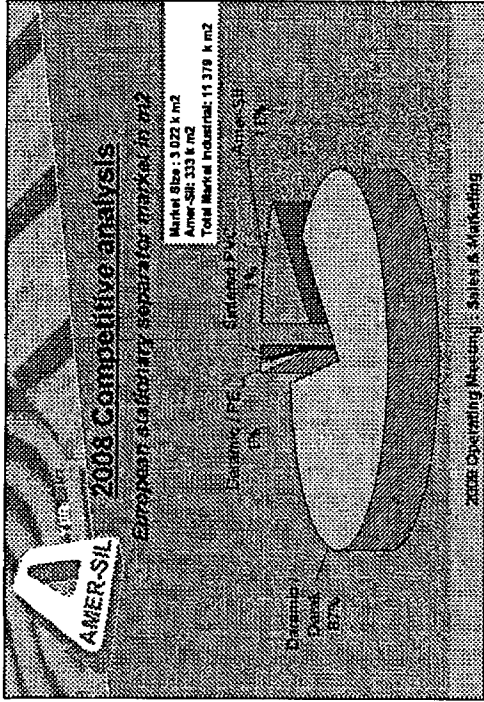
**Industrial microporous separators**  
2008 market for flooded & galvanized

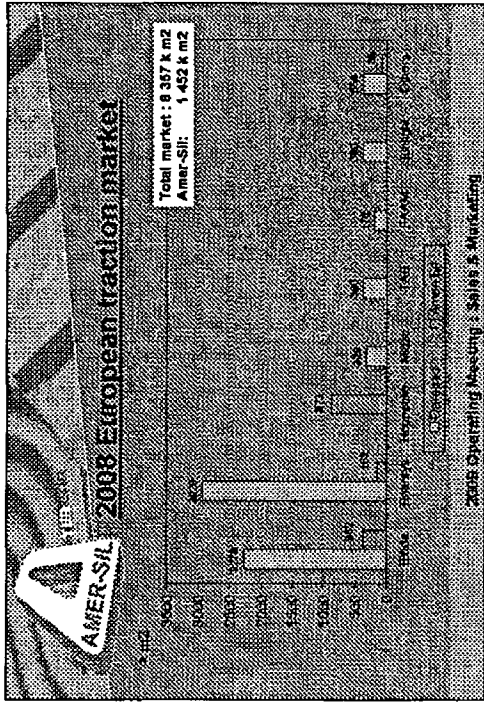
European Market Incl. Russia	Market Size 25,273,457	AMER-SIL 1,400,000	5.5%
Overseas Market Excl. Europe	Market Size 27,400,000	AMER-SIL 1,200,000	4.4%
<b>Total</b>	<b>52,673,457</b>	<b>2,600,000</b>	<b>4.9%</b>

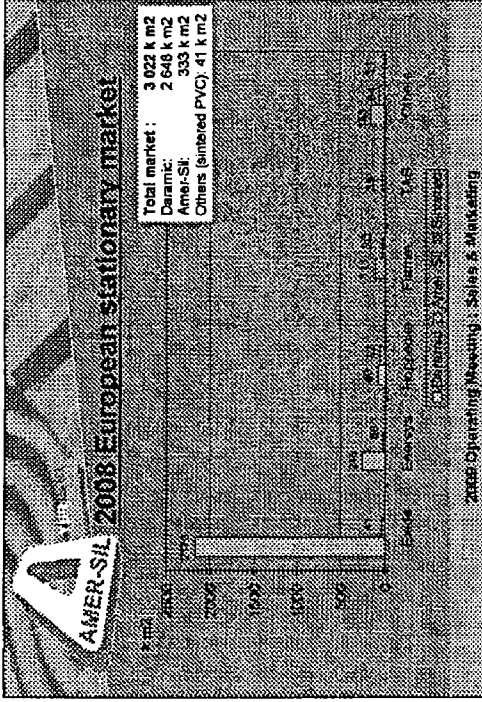
2008 Operating Monthly - Sales & Marketing



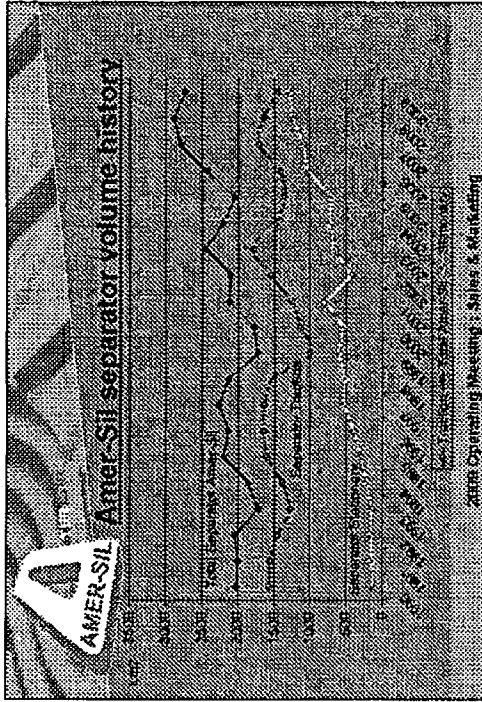


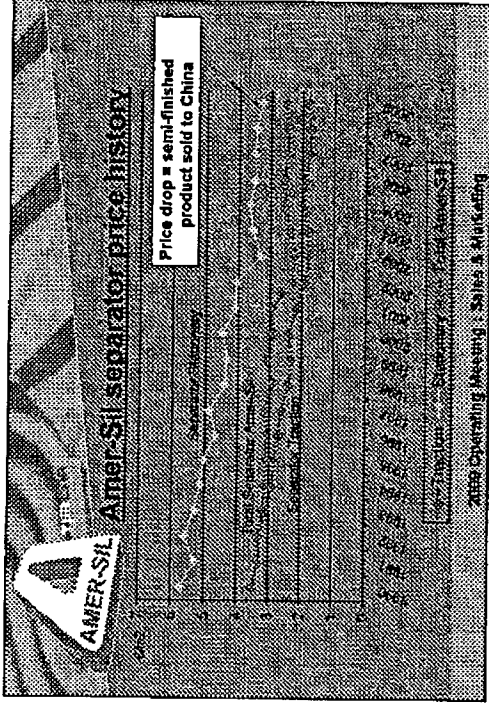
















**2008 Chinese market**

- 1) Chinese customers were a major focus of Amer-Sil's marketing efforts last year. However, for the previous 10 years, Amer-Sil has been a major supplier to the Chinese market. This year's focus is on providing the necessary technical support for Amer-Sil's customers.
- 2) The industry is facing a significant challenge. Amer-Sil's supply is expected to be significantly reduced in 2008.
- 3) Many companies are looking for a way to reduce their costs. Amer-Sil's products are a key component of many of these companies' products.
- 4) The increasing growth of the Chinese market is a major challenge for Amer-Sil's customers.


AMER-Sil Marketing - Sales & Marketing



### 2008 Chinese market

	2007	2008	2009
Market Revenue	25,000,000	34,000,000	40,000,000
AMER-SIL	250,000,000	275,000,000	300,000,000
Market Profit	100,000,000	105,000,000	110,000,000
AMER-SIL	100,000,000	105,000,000	110,000,000
Market Growth	20%	25%	30%
AMER-SIL	20%	25%	30%
Market Share	10%	12%	15%
AMER-SIL	10%	12%	15%
Market Size	100,000,000	120,000,000	150,000,000
AMER-SIL	100,000,000	120,000,000	150,000,000
Market Potential	100,000,000	120,000,000	150,000,000
AMER-SIL	100,000,000	120,000,000	150,000,000

2008 Operating Meeting - Sales & Marketing

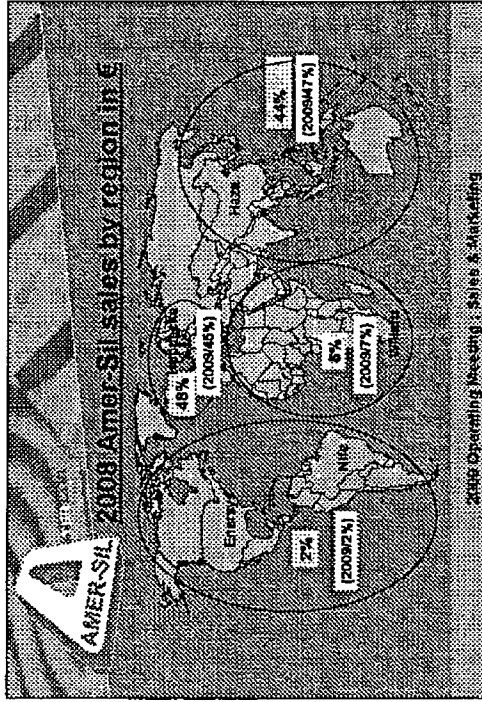



**2006 Chinese market**  
 Amer-Sil China: Configuration & placement - adding locally  
 Administrators: 100% ownership change from Bayer which has 50%  
 interest in the  
 system already in the  
 Chinese market - investment  
 power probably good

**Expected Results:** An increase of 10% in sales  
 in 2006 for the Chinese market

**Sales 2005:** 100,000,000 RMB

**2006 Operating Meeting: Sales & Marketing**





**Amer-Sil separators - budget 2009**

Budget 2009 - 2009 - Budget 2008 - 27.2% +1.0%

1.3% VOLUME DECREASE

**Product:** Amer-Sil separators

Shipments in Europe (2008 - 2009) and primarily in Asia (China) - 21%

Volume increase in China to 2009 budget 2009 - 5.0%

SHIP US TO AMERSIL CHINA BY AIR (2009)

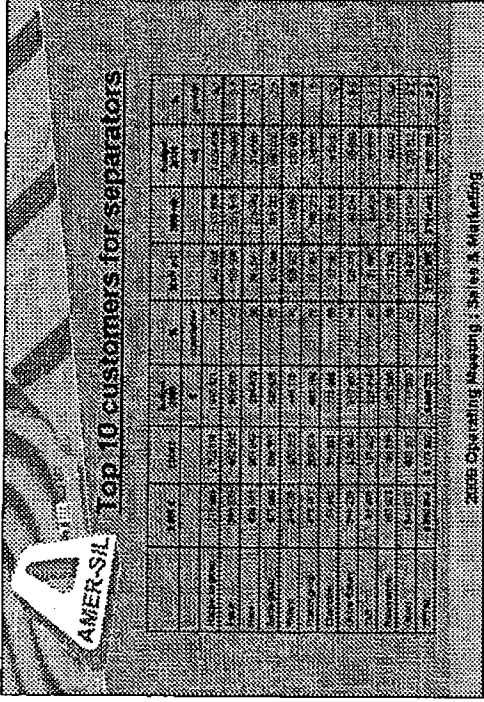
Introduction of new separator technologies is expected - China (2009 - 2009)

**Product:** The Amer-Sil separators of Amer-Sil Group (US) products are to be replaced by the 2009 - 2009

These products have a higher price than the other products in the market

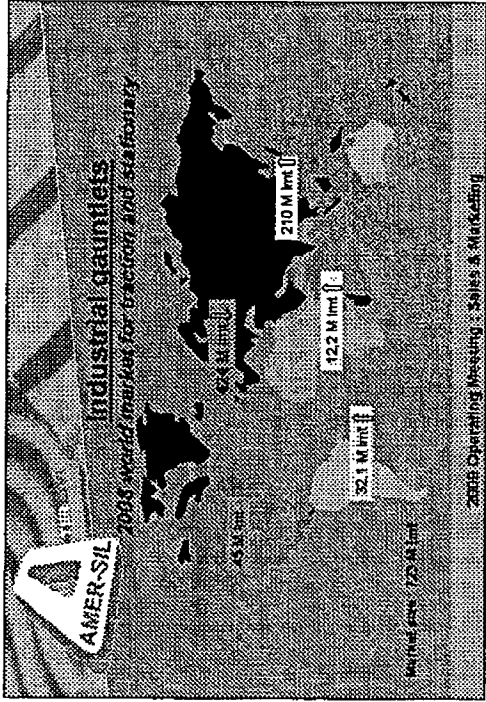
Global market share increase of 1.3% in 2009 - 2009

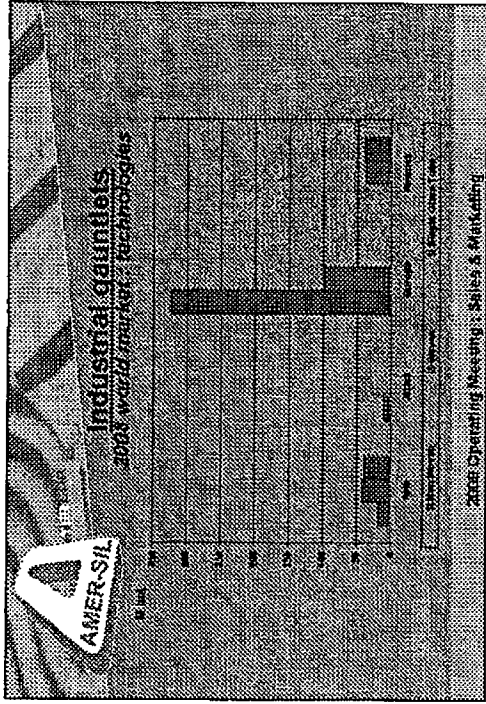
**Other Operating Expenses:** Sales & Marketing

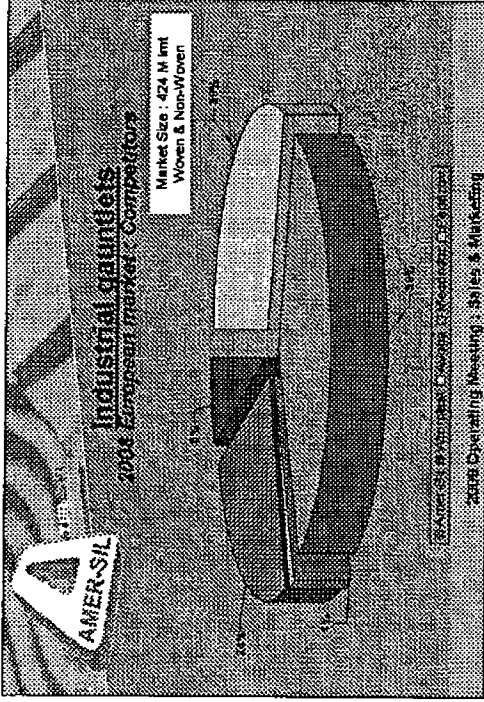


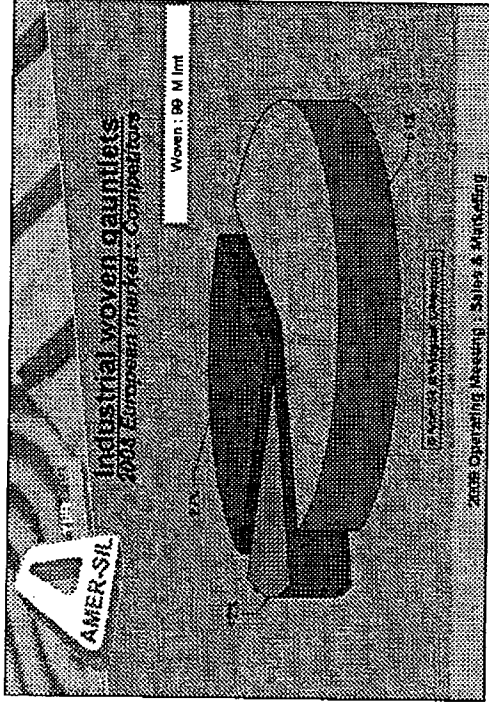


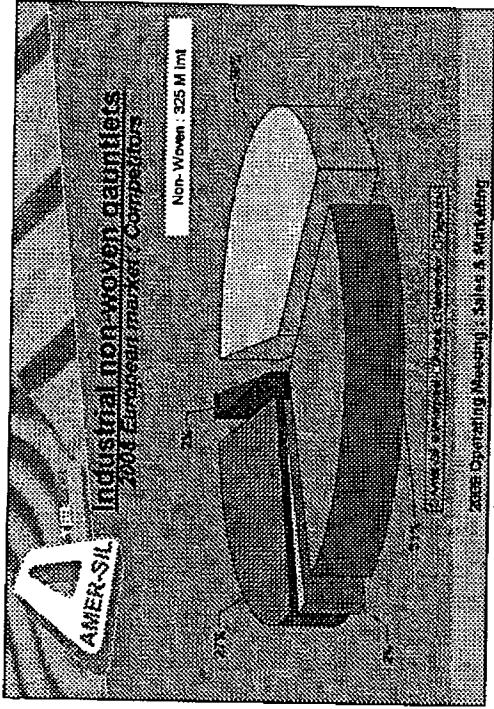


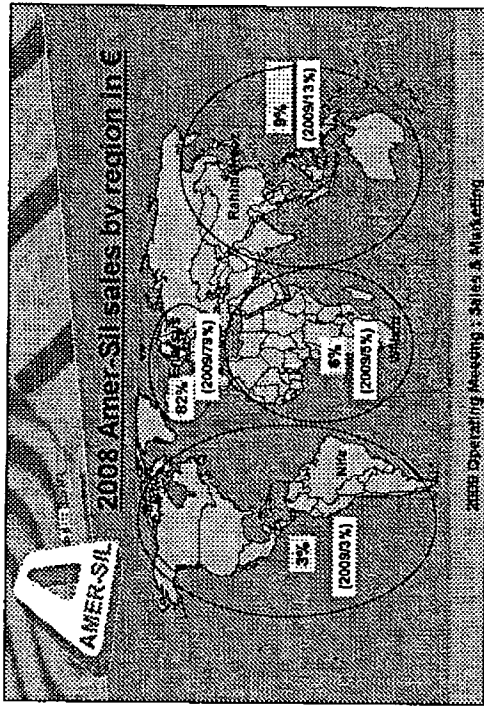


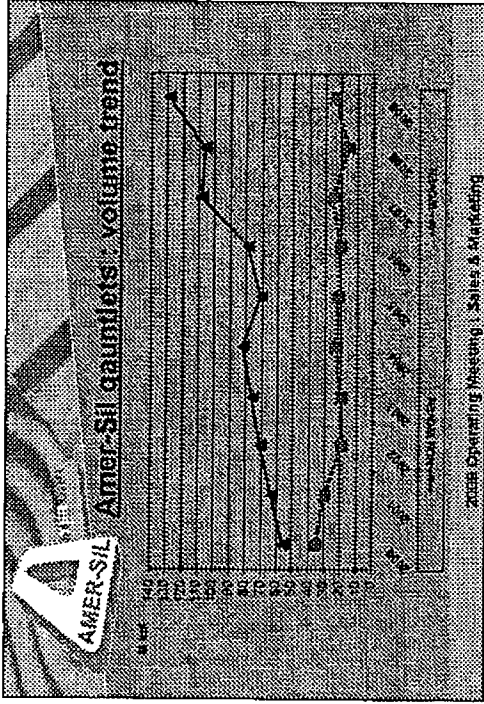




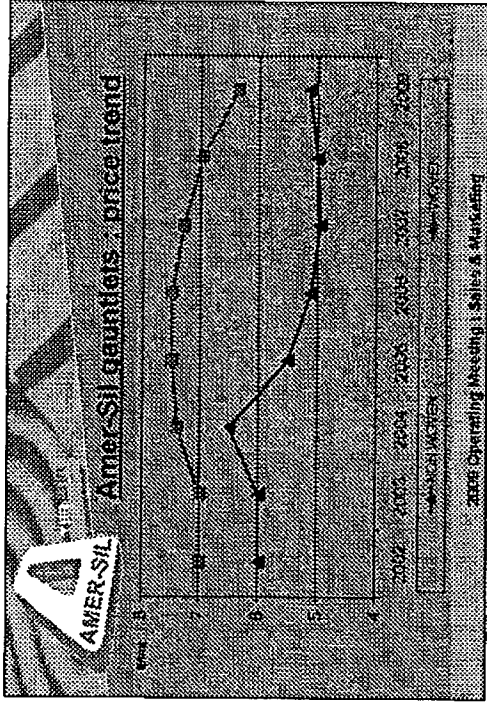


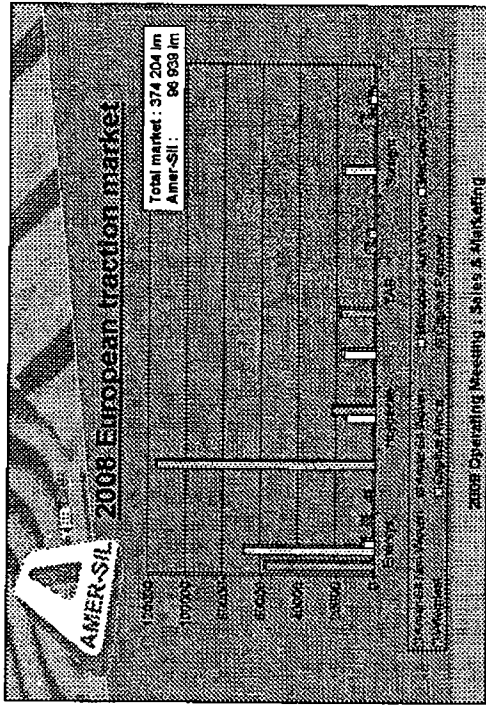


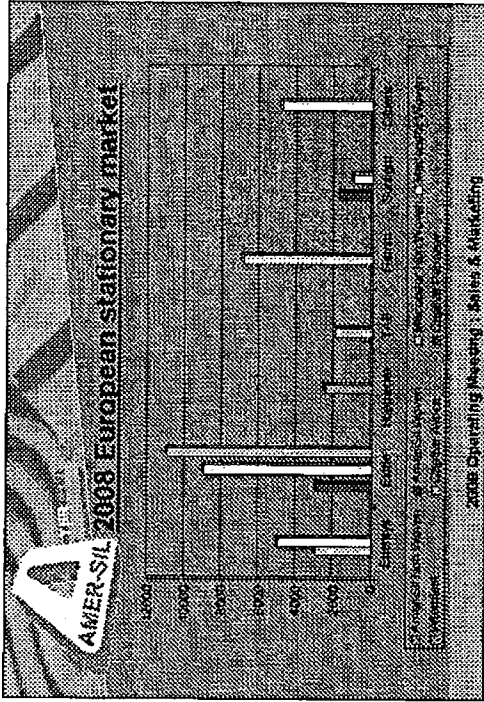


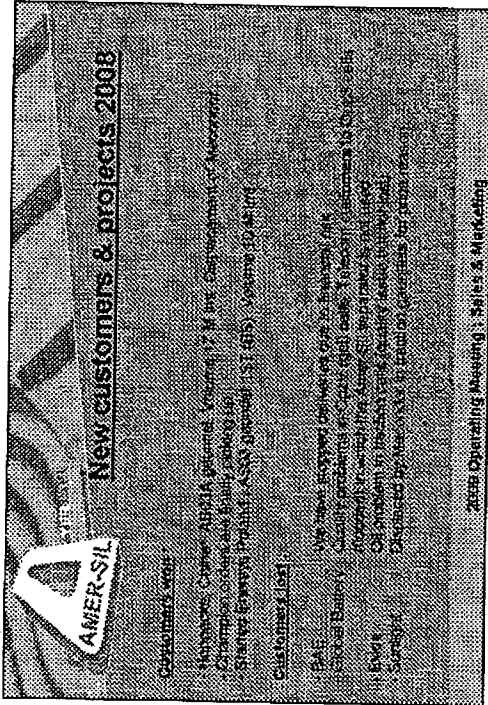















**Amer-Sil gauntlets - Budget 2009**

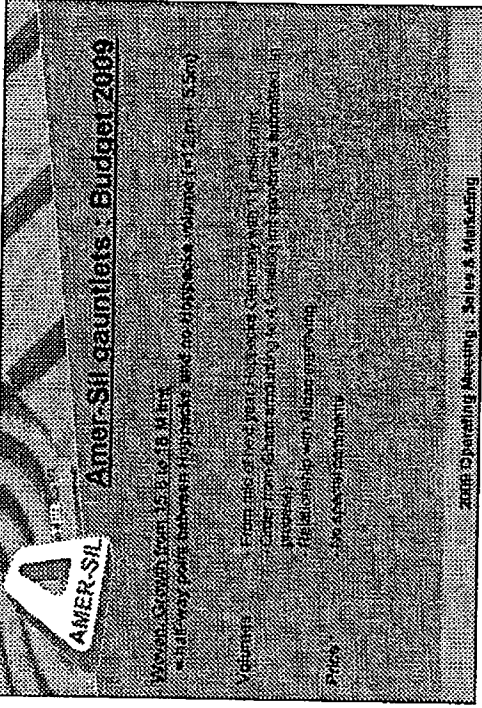
1001 American Research Blvd, Dept 1102, North Branch, MN 55056  
Tel: 651.261.0272


**Materials**  
The Amer-Sil gauntlet is made of 100% synthetic material.  
The gauntlet is made of 100% synthetic material. It is made of  
Synthetic material and is made of 100% synthetic material.  
The Amer-Sil gauntlet is made of 100% synthetic material.  
The Amer-Sil gauntlet is made of 100% synthetic material.  
The Amer-Sil gauntlet is made of 100% synthetic material.

**Price**  
The Amer-Sil gauntlet is made of 100% synthetic material.  
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**Ordering**  
Amer-Sil gauntlets are made of 100% synthetic material.

**Ordering**  
Amer-Sil gauntlets are made of 100% synthetic material.






**New customers & projects 2009**  
*Existing Applications*

AMERSIL offers a range of solutions

- Wilson Railway will provide a new high speed filling machine
- Fuchs a second high speed machine and a precision production line for gel capsules. They are in the capacity
- H&P's machine will produce 7.5 capacity. Using 10 capacity in cycles with AMERSIL guarantees fast operation

2009 Operating Messing, Sales & Marketing



## New customers & projects 2009

New acquisitions 2009: AMI

Year	Project Name	Value (€)	Project Type	Project Status	Project Location
2009	Project A	1000000	Construction	Completed	Spain
2009	Project B	2000000	Construction	In Progress	Spain
2009	Project C	1500000	Construction	Completed	Spain
2009	Project D	800000	Construction	Completed	Spain
2009	Project E	1200000	Construction	Completed	Spain
2009	Project F	900000	Construction	Completed	Spain
2009	Project G	1100000	Construction	Completed	Spain
2009	Project H	1300000	Construction	Completed	Spain
2009	Project I	1400000	Construction	Completed	Spain
2009	Project J	1600000	Construction	Completed	Spain
2009	Project K	1700000	Construction	Completed	Spain
2009	Project L	1800000	Construction	Completed	Spain
2009	Project M	1900000	Construction	Completed	Spain
2009	Project N	2000000	Construction	Completed	Spain
2009	Project O	2100000	Construction	Completed	Spain
2009	Project P	2200000	Construction	Completed	Spain
2009	Project Q	2300000	Construction	Completed	Spain
2009	Project R	2400000	Construction	Completed	Spain
2009	Project S	2500000	Construction	Completed	Spain
2009	Project T	2600000	Construction	Completed	Spain
2009	Project U	2700000	Construction	Completed	Spain
2009	Project V	2800000	Construction	Completed	Spain
2009	Project W	2900000	Construction	Completed	Spain
2009	Project X	3000000	Construction	Completed	Spain
2009	Project Y	3100000	Construction	Completed	Spain
2009	Project Z	3200000	Construction	Completed	Spain
2009	Project AA	3300000	Construction	Completed	Spain
2009	Project AB	3400000	Construction	Completed	Spain
2009	Project AC	3500000	Construction	Completed	Spain
2009	Project AD	3600000	Construction	Completed	Spain
2009	Project AE	3700000	Construction	Completed	Spain
2009	Project AF	3800000	Construction	Completed	Spain
2009	Project AG	3900000	Construction	Completed	Spain
2009	Project AH	4000000	Construction	Completed	Spain
2009	Project AI	4100000	Construction	Completed	Spain
2009	Project AJ	4200000	Construction	Completed	Spain
2009	Project AK	4300000	Construction	Completed	Spain
2009	Project AL	4400000	Construction	Completed	Spain
2009	Project AM	4500000	Construction	Completed	Spain
2009	Project AN	4600000	Construction	Completed	Spain
2009	Project AO	4700000	Construction	Completed	Spain
2009	Project AP	4800000	Construction	Completed	Spain
2009	Project AQ	4900000	Construction	Completed	Spain
2009	Project AR	5000000	Construction	Completed	Spain

AMERSIL - Operating Business - Sales & Marketing



**AMER-SIL** **Top 10 customers for gauntlets**  
(Average of prior periods)

Customer Name	GAUNTLET SALES	% OF TOTAL	GAUNTLET SALES	% OF TOTAL
1. [Customer Name]	1,234,567	12.3%	1,234,567	12.3%
2. [Customer Name]	987,654	9.9%	987,654	9.9%
3. [Customer Name]	876,543	8.8%	876,543	8.8%
4. [Customer Name]	765,432	7.7%	765,432	7.7%
5. [Customer Name]	654,321	6.6%	654,321	6.6%
6. [Customer Name]	543,210	5.5%	543,210	5.5%
7. [Customer Name]	432,109	4.4%	432,109	4.4%
8. [Customer Name]	321,098	3.3%	321,098	3.3%
9. [Customer Name]	210,987	2.2%	210,987	2.2%
10. [Customer Name]	109,876	1.1%	109,876	1.1%
<b>TOTAL</b>	<b>10,000,000</b>	<b>100%</b>	<b>10,000,000</b>	<b>100%</b>

2018 Operating Meeting - Sales & Marketing

**AMER-SIL**  
 QUALITY  
**Top 10 customers total sales**

Customer Name	Year	2007	2008	2009	%
Customer 1	2007	1,234,567	1,123,456	1,012,345	15.2%
Customer 2	2007	987,654	876,543	765,432	11.1%
Customer 3	2007	765,432	654,321	543,210	7.8%
Customer 4	2007	654,321	543,210	432,109	6.2%
Customer 5	2007	543,210	432,109	321,098	4.6%
Customer 6	2007	432,109	321,098	210,987	3.0%
Customer 7	2007	321,098	210,987	109,876	1.6%
Customer 8	2007	210,987	109,876	98,765	1.4%
Customer 9	2007	109,876	98,765	87,654	1.2%
Customer 10	2007	98,765	87,654	76,543	1.1%
<b>Total</b>					<b>80.0%</b>

2008 Operating Marketing - Sales & Marketing

If the Commission intends to disclose any of the following information in a final decision, please contact:

Michael Connolly, Esq.  
Hinckley, Allen & Snyder LLP  
28 State Street  
Boston, MA 02109-1775  
Phone: 617 345-9000  
Fax: 617 345-9020

Sales Report by country and customer (EUR)

From: 01/01/05 to : 31/12/05

Country	Customer	Customer name	Gross Sales	Net Sales
Spain	C000058	TUDOR SPAIN	40 501,44	40 501,44
Suisse	C000040	LECLANCHE	9 603,52	9 132,52
Taiwan	C000165	CSB BATTERY	0,00	0,00
	C000098	EU-POR	0,00	0,00
	C000084	KUNG LONG	132 025,72	131 080,86
	C000162	YUASA TAIWAN	0,00	0,00
<b>Subtotal</b>			<b>132 025,72</b>	<b>131 080,86</b>
Thailand	C000181	THAI BELLCO	0,00	0,00
	C000097	THAI STORAGE	104 704,09	96 516,64
	C000057	TPEC	20 564,83	20 906,40
<b>Subtotal</b>			<b>125 268,92</b>	<b>117 423,04</b>
Ukraine	C000164	VLADAR	156,62	336,62
United Kingdom	C000082	EXIDE UK	0,00	0,00
	C000027	FMP U.K.	87 182,68	79 113,16
<b>Subtotal</b>			<b>87 182,68</b>	<b>79 113,16</b>
<b>USA</b>	C000005	BSG	495,68	836,91
	C000017	EAST PENN	0,00	0,00
	C000096	ENERSYS	0,00	0,00
	C000156	ENERSYS USA	26 280,72	26 468,27
	C000129	TROJAN	36 498,32	29 500,75
<b>Subtotal</b>			<b>63 274,72</b>	<b>56 805,93</b>

no battery  
 pauntlet  
 55969,02  
 x 1,245 avg \$/E  
 69681.

AM 0026113

RX 1606

**Sales Report by customer and item (EUR)**

Actual Year From: 01/01/05 to : 31/12/05  
 Previous Year From: 30/07/07 to : 26/08/07

<u>Battery separators</u>		Actual Year						Previous Year					
C000156	ENERSYS USA	Pieces	M2	Gross Sales	Net Sales	G.Sales/M2	N.Sales/M2	Pieces	M2	Gross Sales	Net Sales	G.Sales/M2	N.Sales/M2
	Item Name												
	Provision	0,0	0,0	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00
	SEC000317 TGK172-127,5-117,5	250,0	250,0	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00
	Total TGK172-EREL-045	250,0	250,0	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00
	SEC000223 TGK172-116,8-120,2	48.346,0	678,7	1.899,70	1.913,26	2,80	2,82	0,0	0,0	0,00	0,00	0,00	0,00
	SEC000393 TGK172-158,7-155,7	500,0	12,4	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00
	Total TGK172-REL-045	48848,0	691,1	1899,70	1913,26	2,75	2,77	0,0	0,0	0,00	0,00	0,00	0,00
	SEC000221 TGK185-165,1-155,7	60.639,0	1.558,8	4.349,27	4.380,31	2,79	2,81	0,0	0,0	0,00	0,00	0,00	0,00
	Total TGK185-REL-045	60639,0	1558,8	4349,27	4380,31	2,79	2,81	0,0	0,0	0,00	0,00	0,00	0,00
	SEC000220 TGK191-165,1-155,7	280.476,0	7.209,9	20.031,75	20.174,70	2,78	2,80	55.809,0	1.434,6	3.581,02	3.451,02	2,50	2,41
	Total TGK191-REL-045	280476,0	7209,9	20031,75	20174,70	2,78	2,80	55809,0	1434,6	3581,02	3451,02	2,50	2,41
	Total C000156	390211,0	9709,8	26280,72	26468,27	2,71	2,73	55809,0	1434,6	3581,02	3451,02	2,50	2,41
	<u>Grand Total</u>			<u>26280,72</u>	<u>26468,27</u>					<u>3581,02</u>	<u>3451,02</u>		

AM 0026114

**Sales Report by customer and item (EUR)**

Actual Year From: 01/01/05 to : 31/12/05  
Previous Year From: 30/07/07 to : 26/08/07

<u>Battery separators</u>		<u>Actual Year</u>						<u>Previous Year</u>					
<u>C000017</u>	<u>EAST PENN</u>	<u>Pieces</u>	<u>M2</u>	<u>Gross Sales</u>	<u>Net Sales</u>	<u>G.Sales/M2</u>	<u>N.Sales/M2</u>	<u>Pieces</u>	<u>M2</u>	<u>Gross Sales</u>	<u>Net Sales</u>	<u>G.Sales/M2</u>	<u>N.Sales/M2</u>
	<u>Item Name</u>												
SEC000373	TL230-620,7-149,2	340,0	31.5	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00
	Total TL230-RES	340,0	31.5	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00
	Total C000017	340,0	31.5	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00
	<u>Grand Total</u>			<u>0,00</u>	<u>0,00</u>					<u>0,00</u>	<u>0,00</u>		

217

AM 0026115

Sales Report by customer and item (EUR)

Actual Year From: 01/01/05 to : 31/12/05  
Previous Year From: 30/07/07 to : 26/08/07

**Battery separators**

C000129 TROJAN

Item Name	Actual Year						Previous Year					
	Pieces	M2	Gross Sales	Net Sales	G.Sales/M2	N.Sales/M2	Pieces	M2	Gross Sales	Net Sales	G.Sales/M2	N.Sales/M2
Provision	0,0	0,0	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00
SEC000221 TGK185-165,1-155,7	207.060,0	5,322,7	14.543,55	11.755,22	2,73	2,21	0,0	0,0	0,00	0,00	0,00	0,00
SEC000222 TGK185-165,1-127,4	171.564,0	3,608,6	9.809,29	7.928,62	2,72	2,20	0,0	0,0	0,00	0,00	0,00	0,00
<b>Total TGK185-REL-045</b>	<b>378624,0</b>	<b>8931,3</b>	<b>24352,84</b>	<b>19683,84</b>	<b>2,73</b>	<b>2,20</b>	<b>0,0</b>	<b>0,0</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>
SEC000220 TGK191-165,1-155,7	171.720,0	4,414,2	12.145,48	9.816,91	2,75	2,22	0,0	0,0	0,00	0,00	0,00	0,00
<b>Total TGK191-REL-045</b>	<b>171720,0</b>	<b>4414,2</b>	<b>12145,48</b>	<b>9816,91</b>	<b>2,75</b>	<b>2,22</b>	<b>0,0</b>	<b>0,0</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>
SEC000316 TGL244-196,8-168,3	2.244,0	74,3	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00
<b>Total TGL244-EREL-045</b>	<b>2244,0</b>	<b>74,3</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>	<b>0,0</b>	<b>0,0</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>
<b>Total C000129</b>	<b>552588,0</b>	<b>13419,8</b>	<b>35498,32</b>	<b>29500,75</b>	<b>2,72</b>	<b>2,20</b>	<b>0,0</b>	<b>0,0</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>
<b>Grand Total</b>			<b>36498,32</b>	<b>29500,75</b>					<b>0,00</b>	<b>0,00</b>		

3/7

AM 0026116

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**Sales Report by country and customer (EUR)**

From: 01/01/06 to : 31/12/06

Country	Customer	Customer name	Gross Sales	Net Sales
Spain	C000058	TUDOR SPAIN	76 169,76	75 971,21
Suisse	C000040	LECLANCHE	1 638,64	1 638,64
Taiwan	C000098	EU-POR	0,00	0,00
Thailand	C000097	THAI STORAGE	137 808,20	125 978,03
	C000057	TPEC	33 980,17	34 081,22
<b>Subtotal</b>			<b>171 588,37</b>	<b>160 059,25</b>
USA	C000098	ENERSYS	0,00	0,00
	C000156	ENERSYS USA	35 988,04	32 023,54
<b>Subtotal</b>			<b>35 988,04</b>	<b>32 023,54</b>
Venezuela	C000015	DUNCAN	0,00	-1 197,79
	C000147	TITAN	21 858,02	20 674,89
<b>Subtotal</b>			<b>21 858,02</b>	<b>19 477,10</b>
Zimbabwe	C000011	CHLORIDE ZIMBABWE	7 941,54	8 279,07
<b>Subtotal</b>			<b>7 941,54</b>	<b>8 279,07</b>
<b>Grand Total</b>			<b>11 217 591,42</b>	<b>10 888 789,05</b>

$32\ 023,54 \times 1,257 = 40\ 235$

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AM 0026117

RX 1607

Sales Report by customer and item (EUR)

Actual Year From: 01/01/06 to : 31/12/06  
Previous Year From: 30/07/07 to : 26/08/07

Battery separators		Actual Year						Previous Year					
C000156	ENERSYS USA	Pieces	M2	Gross Sales	Net Sales	G.Sales/M2	N.Sales/M2	Pieces	M2	Gross Sales	Net Sales	G.Sales/M2	N.Sales/M2
Provision		0,0	0,0	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00
SEC000221	TGK185-165,1-155,7	152.337,0	3.916,0	10.764,99	9.579,63	2,75	2,45	0,0	0,0	0,00	0,00	0,00	0,00
<b>Total</b>	<b>TGK185-REL-045</b>	<b>152337,0</b>	<b>3916,0</b>	<b>10764,99</b>	<b>9579,63</b>	<b>2,75</b>	<b>2,45</b>	<b>0,0</b>	<b>0,0</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>
SEC000220	TGK191-165,1-155,7	363.474,0	9.343,5	25.221,05	22.443,91	2,70	2,40	55.809,0	1.434,6	3.581,02	3.451,02	2,50	2,41
<b>Total</b>	<b>TGK191-REL-045</b>	<b>363474,0</b>	<b>9343,5</b>	<b>25221,05</b>	<b>22443,91</b>	<b>2,70</b>	<b>2,40</b>	<b>55809,0</b>	<b>1434,6</b>	<b>3581,02</b>	<b>3451,02</b>	<b>2,50</b>	<b>2,41</b>
<b>Total</b>	<b>C000156</b>	<b>515811,0</b>	<b>13259,5</b>	<b>35986,04</b>	<b>32023,54</b>	<b>2,71</b>	<b>2,42</b>	<b>55809,0</b>	<b>1434,6</b>	<b>3581,02</b>	<b>3451,02</b>	<b>2,50</b>	<b>2,41</b>
<b>Grand Total</b>				<b>35986,04</b>	<b>32023,54</b>					<b>3581,02</b>	<b>3451,02</b>		

S/F

AM 0026118

**Sales Report by customer and item (EUR)**

Actual Year From: 01/01/08 to : 31/12/08  
Previous Year From: 30/07/07 to : 26/08/07

<b>Battery separators</b>		Actual Year						Previous Year					
C000096 ENERSYS													
Item Name	Pieces	M2	Gross Sales	Net Sales	G.Sales/M2	N.Sales/M2	Pieces	M2	Gross Sales	Net Sales	G.Sales/M2	N.Sales/M2	
SEP000893 AC132-387.4-369.0	130,0	18.6	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00	0,00
Total AC132-RES	130,0	18.6	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00	0,00
SEP000894 AGC132-387.4-369.0	130,0	18.6	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00	0,00
Total AGC132-RES-045	130,0	18.6	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00	0,00
Total C000096	260,0	37.2	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00	0,00
Grand Total			0,00	0,00					0,00	0,00			

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AM 0026119

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## Sales Report by country and customer (EUR)

From: 01/01/07 to : 31/12/07

Country	Customer	Customer name	Gross Sales	Net Sales
Serbia	C000151	SOMBOR	130 154,26	121 076,79
Slovenia	C000054	TAB	1 161 140,98	1 028 877,75
South Africa	C000063	WILLARD BATTERIES	455 864,20	431 365,35
Spain	C000058	TUDOR SPAIN	45 911,38	45 911,38
Thailand	C000097	THAI STORAGE	68 188,47	60 762,16
	C000057	TPEC	65 867,00	66 148,08
Subtotal			132 055,47	126 911,24
Turkey	C000199	OZ ARI AKU	3 339,04	3 789,04
United Kingdom	C000082	EXIDE UK	0,00	0,00
USA	C000005	BSG	293,83	-310,17
	C000156	ENERSYS USA	31 113,72	30 954,46
	C000185	FIAMM USA	0,00	0,00
	C000198	PREMIUM POWER	0,00	0,00
Subtotal			31 407,55	30 644,29
Venezuela	C000015	DUNCAN	0,00	1 498,87
	C000147	TITAN	17 041,98	11 122,85
Subtotal			17 041,98	12 621,72
Zimbabwe	C000011	CHLORIDE ZIMBABWE	8 688,68	8 572,14
Subtotal			8 688,68	8 572,14
Grand Total			12 830 883,51	12 384 974,09

*- other market**- other market*

AM 0026120

*RX 16 08*

**Sales Report by customer and item (EUR)**

Actual Year From: 01/01/07 to : 31/12/07  
Previous Year From: 30/07/07 to : 26/08/07

**Battery separators**

		Actual Year						Previous Year					
C000185	FIAMM USA	Pieces	M2	Gross Sales	Net Sales	G.Sales/M2	N.Sales/M2	Pieces	M2	Gross Sales	Net Sales	G.Sales/M2	N.Sales/M2
SEC000423	SGK230-468.0-188.0	543,0	47.8	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00
SEC000558	SGK230-230.0-188.0	594,0	25.7	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00
Total SGK230-REL-045		1137,0	73.5	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00
Total C000185		1137,0	73.5	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00
<b>Grand Total</b>				<b>0,00</b>	<b>0,00</b>					<b>0,00</b>	<b>0,00</b>		

AM 0026121

AM0026122

Sales Report by customer and item (EUR)

Actual Year From: 01/01/07 to : 31/12/07  
Previous Year From: 30/07/07 to : 26/08/07

Battery separators

C000156 ENERSYS USA		Actual Year						Previous Year					
Item Name	Pieces	M2	Gross Sales	Net Sales	G.Sales/M2	N.Sales/M2	Pieces	M2	Gross Sales	Net Sales	G.Sales/M2	N.Sales/M2	
Provision	0,0	0,0	0,00	0,00	0,00	0,00	0,0	0,0	0,00	0,00	0,00	0,00	
SEC000221 TGK185-165,1-155,7	156.774,0	4.030,0	10.536,75	10.482,82	2,61	2,60	0,0	0,0	0,00	0,00	0,00	0,00	
Total TGK185-REL-045	156774,0	4030,0	10536,75	10482,82	2,61	2,60	0,0	0,0	0,00	0,00	0,00	0,00	
SEC000220 TGK191-165,1-155,7	317.682,0	8.166,4	20.576,97	20.471,64	2,52	2,51	55.809,0	1.434,6	3.581,02	3.451,02	2,50	2,41	
Total TGK191-REL-045	317682,0	8166,4	20576,97	20471,64	2,52	2,51	55809,0	1434,6	3581,02	3451,02	2,50	2,41	
Total C000156	474456,0	12196,4	31113,72	30954,46	2,55	2,54	55809,0	1434,6	3581,02	3451,02	2,50	2,41	
Grand Total			31113,72	30954,46					3581,02	3451,02			

x1,371  
= 42439

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AM 0026123



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## Sales Report by country and customer (EUR)

From: 01/01/08 to : 31/12/08

Country	Customer	Customer name	Gross Sales	Net Sales
Russian	C000120	NOVGOROD BATTERY	33 959,32	33 913,00
	C000072	SSK	3 578,74	3 648,74
Subtotal			37 538,06	37 561,74
Serbia	C000151	SOMBOR	159 044,73	158 860,04
Slovenia	C000054	TAB	1 032 951,38	906 651,14
South Africa	C000063	WILLARD BATTERIES	725 003,88	691 797,54
Spain	C000058	EXIDE SPAIN	262 134,82	261 059,82
Thailand	C000097	THAI STORAGE	73 104,53	67 357,64
	C000057	TPEC	9 952,94	10 100,27
Subtotal			83 057,47	77 457,91
United Kingdom	C000081	CHLORIDE T&T	2 970,00	2 970,00
	C000082	EXIDE UK	0,00	0,00
Subtotal			2 970,00	2 970,00
USA	C000005	BSG	260,17	459,28
	C000198	PREMIUM POWER	0,00	0,00
Subtotal			260,17	459,28
Venezuela	C000015	DUNCAN	0,00	-1 045,37
	C000147	TITAN	21 052,83	21 699,45
Subtotal			21 052,83	20 654,08
Zimbabwe	C000011	CHLORIDE ZIMBABWE	5 875,62	5 872,52
Subtotal			5 875,62	5 872,52

) other markets

AM 0026124

R21609

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Global Leader  
in Stored Electrical Energy

# Exide Global separator RFP : Amer-Sil proposal

Kehlen, Luxembourg  
June 16th, 2007



AM 0003789

RX1615

## **Amer-Sil separators**

### **Pricing**

- All prices are DDU for Europe
- Prices given are with consignment
- Please see attached file: Amer-Sil pricing (2)



AM 0003790

Country	Plant Location	Exide Part Number	AMER SIL pattern	Estimated Annual Volume 1,000 Sq Meter	USD/000 pc	Euro/000 pc	Length - IN	Width - IN	Overall THK - IN	Exposed THK - IN	Exide Part No.	Plant Area (1,000 Sq Ft)	Length - IN	Width - IN	Overall THK - IN
Germany	BAD LAUT	72502015	DVN 190	50	135,32	101,75	12,91	7,40	0,07	0,020	18539	328,0	188,0	1,900	
Germany	BAD LAUT	72505011	DVN 190	35	158,43	119,12	15,12	7,40	0,07	0,020	18539	384,0	188,0	1,900	
Germany	BAD LAUT	72505012	DVN 190	2	158,43	119,12	15,12	7,40	0,07	0,020	18539	384,0	188,0	1,900	
Germany	BAD LAUT	72509022	DVN 190	1	239,29	179,92	22,88	7,40	0,07	0,020	18539	590,0	188,0	1,900	
Germany	BAD LAUT	72513201	DVN 190	120	189,37	142,38	18,07	7,40	0,07	0,020	18539	459,0	188,0	1,900	
Germany	BAD LAUT	72513202	DVN 190	5	189,37	142,38	18,07	7,40	0,07	0,020	18539	459,0	188,0	1,900	
Germany	BAD LAUT	72513301	DVN 190	285	252,08	189,53	24,08	7,40	0,07	0,020	18539	611,0	188,0	1,900	
Germany	BAD LAUT	72513302	DVN 190	15	252,08	189,53	24,08	7,40	0,07	0,020	18539	611,0	188,0	1,900	
Germany	BAD LAUT	72513401	DVN 190	15	176,58	132,77	16,66	7,40	0,07	0,020	18539	428,0	188,0	1,900	
Germany	BAD LAUT	72518503	DVN 190	115	111,39	83,75	10,88	7,40	0,07	0,020	18539	270,0	188,0	1,900	
Germany	BAD LAUT	72519904	DVN 190	80	241,35	181,47	23,08	7,40	0,07	0,020	18539	585,0	188,0	1,900	
Germany	BAD LAUT	72519905	DVN 190	50	241,35	181,47	23,08	7,40	0,07	0,020	18539	585,0	188,0	1,900	
United Kingdom	OVER HILL	MLJ1336R	DVN 190	460	TDB	TDB	12,8	0,051	0,016	0,020	490	148,0	320,0	1,130	
United Kingdom	OVER HILL	MLJ1488	DVN 190	745	TDB	TDB	16,6	0,075	0,020	0,016	500	188,0	395,0	1,190	
United Kingdom	OVER HILL	MLJ2032R	DVN 190	15	TDB	TDB	12,8	0,051	0,020	0,020	54	148,0	320,0	1,130	
Spain	LA CARTU	16142357	DVN 190	57	103,31	77,68	6,10	0,051	0,020	0,020	54	195,0	155,0	1,300	
Spain	LA CARTU	16143597	DVN 190	15	173,65	130,49	6,85	9,29	0,020	0,020	161	236,0	180,0	1,800	
Spain	LA CARTU	16143598	DVN 280	10	186,68	140,35	7,24	9,29	0,020	0,110	168	236,0	180,0	2,800	



## **Amer-Sil separators**

### **General comments concerning Amer-Sil**

- Amersil separators can be used in motive, standby applications (both flooded and gel)
- Separator thickness can range from 1mm to 5mm
- Only leaf form (cut pieces) available currently
- Only for industrial batteries (no SLI)
- Different Exide specs are written around automotive PE separator application; not fully applicable - to be discussed
- This proposal should be looked at together with the upcoming RFP for standby separators (Büdingen and Bad Lauterberg), and not as a lone-standing proposal; can be better explained during face-to-face presentation



## Amer-Sil separators

### Technical requirements (1/2)

- Major components : PVC, silica, carbon black and stabilizer
  - See attached file: Major Components (3)
- Drawings : Identical apart from dimensions and thickness
  - 673k m2 DWN190 for Bad Lauterberg, Germany - different sizes
  - 5k m2 DWN130 for La Cartuja, Spain - PN16142157 (flood. monobloc)
  - 15k m2 DWN180 for La Cartuja, Spain - PN16143597 (gel monobloc)
  - 10k m2 DWN280 for La Cartuja, Spain - PN16143598 (gel monobloc)
  - See attached file: drawings DWN130 (4), DWN180 (5), DWN190 (6), DWN280 (7)
- Material intent datasheet : See attached file MIDS (8),(9),(10),(11)
- Packaging details
  - Returnable packaging for Germany (Boxerpac) - see attachement packaging boxerpac (14)
  - Cardboard packaging for Spain - see attachement packaging boxes (15)





## Amer-Sil separators

### Technical requirements (2/2)

- Proposed material has superior electrical characteristics which can lead to higher capacity and lower Pb consumption
- Item 4 : Test methods - We respect BCI test methods indicated where applicable
- Item 6 : Not applicable for this RFP1
- Item 9
  - Amer-Sil is ISO9001-2000 certified, re-certification was passed in May 2007
  - Exide specification M500 : In industrial batteries, section 4 on PPAR e.g not applied
  - Certifications part K and L OK



## **Amer-Sil separators**

### **Development plan and timeline : infrastructure**

- Investment in new production line required
- Very similar line to existing lines
- Infrastructure development requires several steps :
  - Authorisations : 9 months
  - Construction : 12 months
  - Start-up and equipment validation : 3 months
  - **Total time required : estimated 24 months**



## Amer-Sil separators

### Development plan : testing and qualification

- Amer-Sil has supplied separators to Exide in the past:
  - Deta / Bad Lauterberg from 1976 to contract with Daramic (100% of traction cells requirements)
  - Sonnenschein from 1974 to contract with Daramic (100% of 2V gel cells requirements = OpzV)
  - Tudor / La Cartuja from 1996 to contract with Daramic (100% of 2V gel cells requirements = OpzV)
- In addition, Amersil and Exide Europe have started a broad separator validation program 2 years ago
- As a consequence, Amer-Sil separators are largely validated for use in traction and standby in Europe
- More validation is currently ongoing for specific applications
- For other validations, samples can be provided quickly



## Amer-Sil separators

### Commercial requirements

- Mostly OK but with following considerations
- 2. Contract terms : Difficult to justify investment with 3 year contract
- 3. Payment terms : 60-75 days after consumption with consignment
- 4. Delivery : OK, we accept consignment
- 5. Pricing : DDU
  - Exchange rate used is 1\$ = 0,75 Euro (15 June 07)
  - Payment in Euro
- 6. Total capacity available for quote : roughly 2 million m2
  - 700 000 m2 for motive (this RFP1)
  - 1 300 000 m2 for standby flooded and gel (RFP2)



## Amer-Sil separators

### Terms and conditions

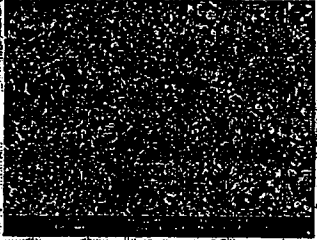
- Terms and conditions to be discussed in more detail before acceptance :
- 1. Items 2 and 9 : not applicable cf. supply within Europe, European laws applicable
- 2. Item 14 : to be checked if acceptable
- 3. Item 17 : no liability accepted
- 4. Item 18 : not well understood : not acceptable
- 5. Item 19 : not applicable
- 6. Items 21, 22 and 30 : not acceptable as is cf. without some contract term investment not meaningful
- 7. Items 26 and 28 : to be discussed or not applicable
- 8. Item 32 : not applicable as is
- 9. Item 33 : not acceptable unless common agreement



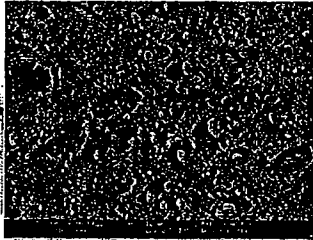
# Amer-Sil separators

## Structure specificity vs. other types

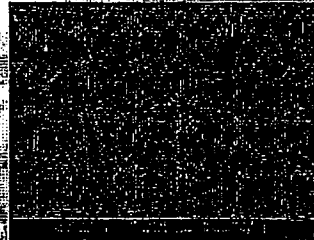
**Amersil Ribbed**



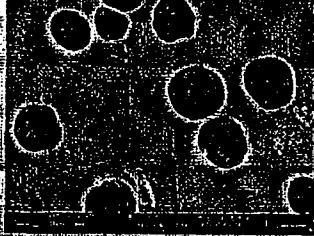
**Amersil Corrugated**



**Polyethylene**



**PET mat / Phenolic resin**



**Polyethylene / Rubber**



# Amer-Sil separators

## Physical properties vs. PE separators

Typical values	Amer-Sil Standard	PE
Thickness (in mm)	2.0	2.0
Backweb (in mm)	0.50	0.50
Total porosity (in cm <sup>3</sup> /g)	1.20	0.90
Pore volume (in %)	68	55
Pore size (in μm)		
Min.	0.05	0.10
Mean		
Max		
Elec. Resistance (in mΩ·cm <sup>2</sup> )	110	200
Displacement of acid (in ml/m <sup>2</sup> )	230	300
Oxidative weight loss (in %)	3	5-20
Wetability (in s)	2	5000





## **Amer-Sil separators**

### **Why choose Amer-Sil (1/2)?**

- Risk management : Amer-Sil is only company (besides Daramic) able to offer **full range of industrial separators**
- Separators are **qualified for use** (test program started in Europe two years ago)
  - Exceptions exist but then qualification mostly ongoing
- Electrical characteristics better : 70-75% porosity vs. 55% for PE → Use of Amersil separators can lead to higher capacity, with opportunity for Pb consumption reduction
- Competitive prices
- Quality - No black scum issues, no oil needed for oxydation resistance





## Amer-Sil separators

### Why choose Amer-Sil (2/2)?

- Many VAVE improvement ideas : great value, examples to be presented
- Technical and R&D cooperation possible : examples to be presented + recent patents
- Risk management : Exide knows Amer-Sil very well, with many good existing contacts
- Supplier of other key 'active' component : gauntlets
- Proximity to key Exide plants : max 300 miles to CEAC Lille, Deta Bad Lauterberg and Sonnenschein Büdingen
- Excellent customer service

