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Executive Committee of
the Multilateral Fund for the
Implementation of the Montreal Protocol

Thirteenth Meeting
Montreal, 25-27 July 1994

COUNTRY PROGRAMME: SLOVENIA

This document consists of:

- Comments and recommendations of the Fund Secretariat
- Country Programme Evaluation Sheet (prepared by the Fund Secretariat)
- Transmittal Letter from the Government of Slovenia
- Country Programme Executive Summary

COMMENTS AND RECOMMENDATIONS OF THE FUND SECRETARIAT

COMMENTS

1. The country programme did not have a cover sheet.
2. On the basis of the consumption data provided in the Country Programme, Slovenia's calculated consumption of Annex A controlled substances in 1992 was 1117 tonnes ODP, while its calculated consumption of Annex B controlled substances in the same year was 88.9 tonnes ODP. Based on the population data for 1992 which was reported by the Secretariat of the Montreal Protocol (Ozone Secretariat) as 1,931,000 and the Protocol's definition of consumption of controlled substances, the calculated per capita consumption of Slovenia in 1992 was determined to be 0.57 Kg. per capita for Annex A controlled substances and 0.04 Kg. per capita for Annex B controlled substances.
3. Consumption as defined in Article 1, paragraph 6 of the Protocol is "production plus imports minus exports of controlled substances". The Government of Slovenia, however, defined consumption as "import of ODS minus export of ODS in products and appliances manufactured in the country" reportedly, according to an aide-memoire of a World Bank Mission on May 31-June 1, 1993. Thus in calculating per capita consumption 53 per cent of the Annex A controlled substances which is used in ODS-containing products which are exported, was taken out of the country's consumption leaving 47 per cent equivalent to 516 tonnes ODP. Hence, it is the per capita calculated consumption based on the 516 tonnes ODP which is less than 0.3 Kg/capita, i.e. 0.27 Kg/capita (as reported on page (i) of the Executive Summary and page 1 of the Country Programme) and not the country's consumption as defined by the Protocol.

RECOMMENDATION

The Fund Secretariat recommends as follows:

4. On the basis of the consumption data reported in the country programme, the country programme is not eligible for consideration by the Executive Committee.

SLOVENIA COUNTRY PROGRAMME EVALUATION SHEET

National Implementing Agency: Project Implementation Unit, Ministry of the Environment and Physical Planning

Status of ratification of the Vienna Convention and the Montreal Protocol

	Signature	Ratification	Entry Force
Vienna Convention (1985)		06/Jul/92	06/Jul/92
Montreal Protocol (1987)		06/Jul/92	06/Jul/92
London Amendment (1990)		08/Dec/93	08/Mar/93
Copenhagen Amendment (1992)			

Production of controlled substances: 0 metric tonnes (mt)

Consumption of controlled substances (1992): 2,001.0 metric tonnes
(excluding methyl bromide) 1,205.9 weighted tonnes (ODP)

Substance (ton)	CFC						Halon			Solvents			M-Br
	11	12	113	114	115	Total	1211	1301	Total	CTC	MCF	Total	
ODS	572.0	426.0	44.0	63.0	3.0	1,108.0	3.0	1.0	4.0		889.0	889.0	
ODP	572.0	426.0	35.2	63.0	1.8	1,098.0	9.0	10.0	19.0		88.9	88.9	

Source: Country Programme (1994)

Distribution of ODP by substance:

CFC: 91.1% Halon: 1.6% CTC, MCF: 7.4%

Distribution of ODP by sector:

Sector:	Aerosol	Foam	Halon	Refrig.	Solvent
Consumption (tonnes):	436.0	432.0	19.0	197.2	124.0
Percent of total:	36.2%	35.8%	1.6%	16.4%	7.4%

Country Programme

Duration of country programme: 1994-2002

ODS phase-out target:

98% reduction in ODS consumption by 1998. Complete phase-out by 2002

Phase-out priority area:

Refrigeration sector

Cost of activities in country programme: \$23,476,131

Strategy:

Early phase-out, particularly in areas of manufacturing of ODS-containing products where export is significant. However for refrigeration servicing ODS use will be extended. The use of regulations to ban production, import, marketing and use of ODS and products containing ODS and incentives to encourage substitution, recycling and use of closed systems would facilitate the early phase-out.



Number:

Date: Ljubljana, June 6, 1994

Slovenia

Mr. G.M. Bankobeza
Programme Officer/Lawyer
Ozone Secretariat
United Nations Environment Programme
Nairobi, Kenya

Dear Mr. Bankobeza,

Thank you for your fax of May 18, 1994 concerning the Article V Status of Slovenia under the Montreal Protocol. We apologize for not responding more quickly, but we wanted to be sure to finalize our Country Program for the Phaseout of ODS, and our calculations of ODS consumption in Slovenia. A World Bank mission is in Slovenia to pre-appraise the ODS Phaseout Project this week, and the Country Program and calculations of ODS consumption have been discussed with them.

Attached for your review are the following items, which we feel provide an adequate basis for classifying Slovenia as an Article V country under the Montreal Protocol:

- A. Article 3 of the Montreal Protocol which Explains the Methodology for Calculating ODS Consumption as it Pertains to Article V Status
- B. Relevant Portions of the Slovenia Country Program for ODS Phaseout
- C. A Letter to the Montreal Protocol Executive Committee

We believe that the calculations provided in your fax of May 18 did not take into account the ozone-depleting potential (ODP) of Annex B substances. Your calculations for Annex B substances are based on total ODS consumption, and this explains your result that consumption of Annex B substances was approximately 0.4 kg/capita. From Table 2.1 of the Country Program for ODS Phaseout, ODS consumption per capita and ODP consumption per capita in 1992 are calculated as follows (assuming a population of 1,994,084 persons, and that exports of Annex A substances are 582 tons):



**Consumption of ODSs in Slovenia in 1992
Broken Down by Substances (Tonnes)**

Substance	Total Use (Tonnes)	Domestic Use ODS (Tonnes)	Domestic Use per capita (ODS kg/capita)	Total Use (ODP tonnes)	Domestic Use (ODP tonnes)	Domestic Use per capita (ODP kg/capita)
Annex A, Group I	1108	526	0.264	1098.0	516	0.259
Annex A, Group II	4	4	0.002	19.0	19.0	0.009
Annex B, Group III 1,1,1-TRI	889	889	0.446	88.9	88.9	0.045

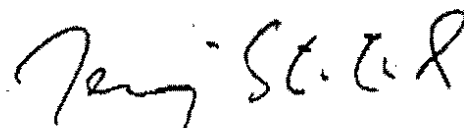
Definitions: Domestic use refers to the quantity of ODS embodied in final products which are consumed in Slovenia. That is, Total Use - Exports = Domestic Use

As you can see from these calculations, Slovenia falls under the 0.3 kg/capita threshold for Annex A substances and the 0.2 kg/capita threshold for Annex B substances. We don't think there is any question that Slovenia should be classified as an Article V country and qualify for Montreal Protocol Funding, based on the guidelines set forth under the London Amendments to the Montreal Protocol. Article 3 clearly states that the methodology for determining Article V Status should be based on ODP and not ODS consumption.

If you have any questions on the above, let me know. However, we would appreciate a reply later this week since the World Bank team and its consultants will be leaving Slovenia on Friday. In addition, we would like to clarify this matter as soon as possible so that the Executive Committee of the Montreal Protocol will be in a position to approve Slovenia's Country Program when it meets in July.

Thank you again for your attention to these matters, we look forward to hearing from you later this week.

Yours sincerely,



**Jernej Stritih,
State Secretary for the Environment**

cc: Kenneth Newcombe, Division Chief,
The World Bank
Global Environment Facility
Montreal Protocol Operations Division

Bernard Montfort, Division Chief,
The World Bank
Energy and Environment Operations
Division for Central and Eastern Europe

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125

3

b

Secrecy Agreement

between

Bayer AG

D-5090 Leverkusen, Bayerwerk

Federal Republic of Germany

- in the following referred to as BAYER -

and

Plama, N.Sol.O

YU-66244 Podgrad, Slowenien

- in the following referred to as PLAMA -.

Whereas, BAYER has developed special know-how for the production of polyurethane foams with reduced bulk density without using chlorofluorocarbons as blowing agent - in the following referred to as KNOW-HOW -;

Whereas, PLAMA as a producer of polyurethane foams is interested in adapting parts of its own production to the above mentioned process and therefore wants to test the above mentioned process, thereby using starting and raw materials from BAYER;

Whereas, BAYER has for this purpose already submitted to PLAMA parts of its KNOW-HOW and will, as far as necessary submit further parts of its KNOW-HOW and samples of starting material and finished product - in the following referred to as SAMPLES - to PLAMA;

BAYER and PLAMA agree to the following:

Kp/Scho

1. PLAMA will inform BAYER of the results of the testing within the term of this Agreement.
2. PLAMA undertakes, not to use KNOW-HOW and SAMPLES received from BAYER for any other purpose than for the testing of the adaption of parts of its production according to this Agreement, not to make KNOW-HOW and SAMPLES received from BAYER available to a third party and to make KNOW-HOW and SAMPLES received from BAYER available only to those of its personnel, who are involved in the above mentioned adaption.
3. The obligation to confidentiality shall terminate 5 (five) years after this Agreement becomes effective.
4. The foregoing secrecy obligation shall not apply to KNOW-HOW and SAMPLES or parts thereof, which
 - at the time of disclosure are available to the general public,
 - after the disclosure becomes available to the general public through no fault of PLAMA, or
 - PLAMA can reasonably establish was in its possession at the time of disclosure hereunder to it, or
 - PLAMA can reasonably establish were obtained from a third party, who did not owe any obligations of confidentiality to BAYER with regard to such KNOW-HOW and SAMPLES.

The above exclusion shall not apply to a combination of items which individually may qualify for exclusion from

PLAMA's obligations of secrecy, unless the combination itself qualifies for such exclusion.

5. BAYER intends to file patent applications for the KNOW-HOW and SAMPLES. Therefore the submission to PLAMA shall not establish a publication within the meaning of the patent law. Furthermore, PLAMA will not assert prior use from working with the KNOW-HOW and the SAMPLES.
6. No license or other rights, expressed or implied, are granted by BAYER to PLAMA.
7. This Agreement shall become effective on the date of signature of the last signing party and shall notwithstanding the 5 years secrecy period remain in force for a period of 1 (one) year from the effective date, unless it is extended for 1 (one) year in mutual consent or replaced by a subsequent agreement of the parties hereto.

D-5090 Leverkusen,

Date: 27.03.1992

Bayer AG *Wp*

Dr. Seyfried

Dr. Seyfried

Dr. Kleimann

Dr. Kleimann

YU-66244 Podgrad,

Date:

Plama, N.Sol.O

Dr. J. J. J. J.

Anex:

The above mentioned KNOW-HOW PLAMA may use in own production.

Dr. J. J. J. J.

Dr. J. J. J. J.

Kp/Scho

C

TO: Mr. Bert Veenendaal
FROM: A. Gabella
Subject: Slovenia's "Plama" Report.
Date: February 25, 1994

Company Profile

PLAMA was founded in 1955 in the former country of Yugoslavia. In 1955 Plama's activity was related to Polyvinyl Chloride. In 1959 Plama moved its operations into a military warehouse and began polyurethane foam operations on a "homemade" foaming unit. Plama continues to operate at this location today, but the "homemade" foaming unit was replaced with a Hennecke machine in 1970. In 1973 Plama began their extruded polyethylene operations at the same location. Since Plama's move in 1959, their operation's size has increased 20 times their size.

This company is divided into four divisions. Two divisions are involved with the Montreal Protocol: POLIURETANI Plama and IZOTERM Plama, while the mechanical operation and the polyethylene sheeting operation remain totally independent.

Ownership

This company is presently owned by the government. However by the end of 1994, 60% of the company will be owned by its employees with the remaining 40% owned by the government. Therefore this company is totally owned by people of Slovenia.

Employment

The Poliuretani Division employs 240 people and the Izoterm Division employs 98 people.

Overview of Manufacturing Program

Poliuretani's two main operations are the manufacture of polyurethane foam, both ester and ether, and the fabrication of specialty sponges known as VILEDAs. Izoterm's main operations consist of extruded polyethylene sheets and tubes, and the production of rigid ether polyurethane foam.

Description of Current Equipment and Intended Modifications to Achieve a CFC-Free System

A. Poliuretani

1. Polyurethane Ester and Ether Foams. The Hennecke machine currently in use is in fairly good condition. Plama plans on replacing Freon 11 with an additive manufactured by Bayer which would require changes made to the present machine. The cost of these necessary equipment changes, done by Hennecke, is 349.500.00 DM.
2. VILED A Sponges. The adhesive used to join the handle of the sponge (made of Ester PU foam) to an abrasive material was made using Freon 11 as a solvent. It was replaced last year by Methyl Chloroform (1,1,1 Trichloroethylene). However, the employees are very strongly objecting this change due to health matters, which is forcing the company to change operations to using MDI instead of TDI. The cost of this change will be approximately 200.000 USD because a machine will be needed. The optimal solution will be to use an elastomeric layer of polyurethane material: the cost of this change would be approximately 250.000 USD, due to a new machine that it will have a capacity double that of the previous one.

B. Izoterm

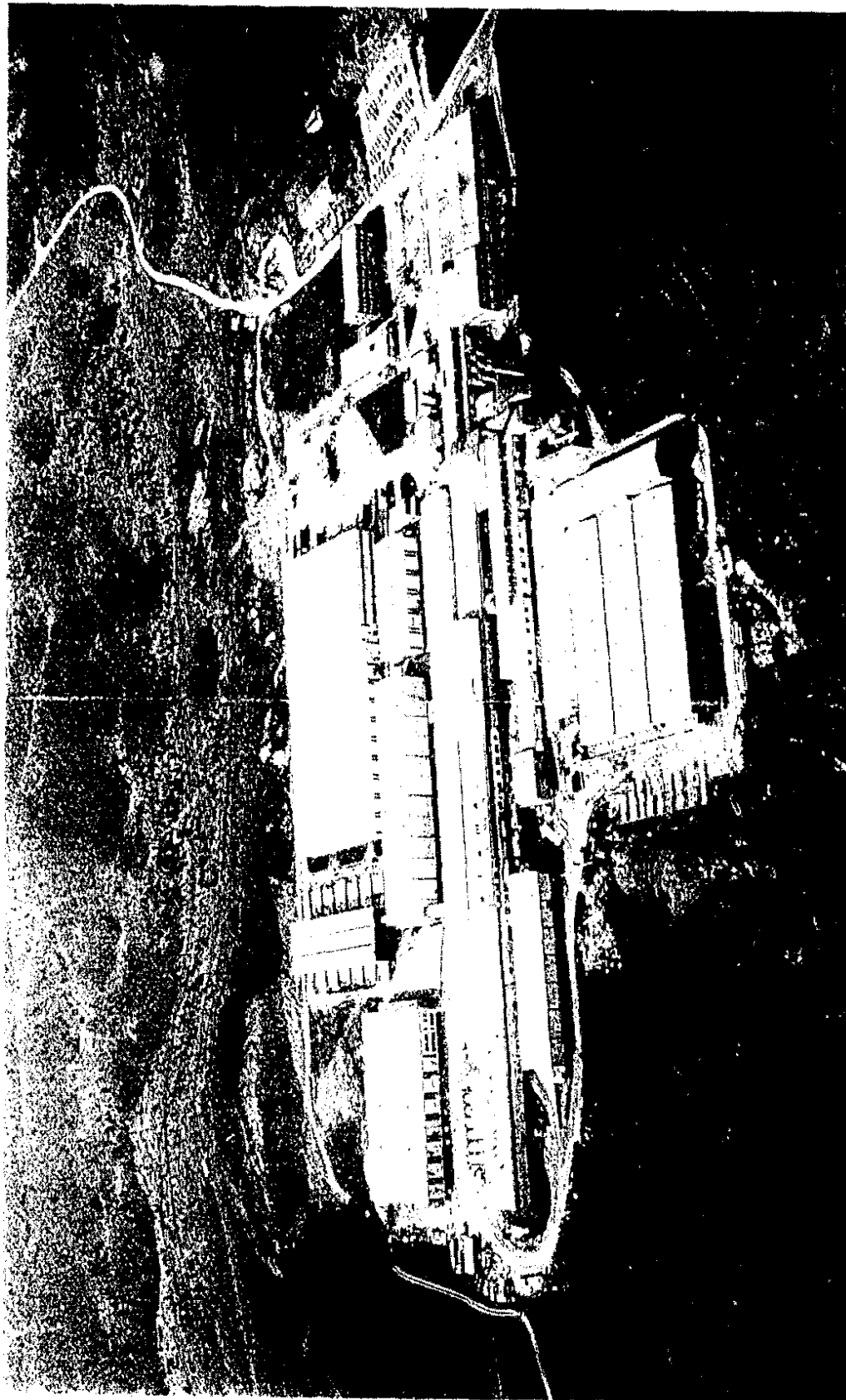
1. Extruded Polyethylene Foam. Plama is presently using a Berstoff extruder. They are using a blend of 90% Freon 114 and 10% of Freon 12 as blowing agents. Plama has been in contact with Thermaflex (Holland) to replace these CFC'S per Isobutane. The cost of this replacement is not yet available. However, it was mentioned that Mr. Veenendaal was discussing this replacement with a company in another country in order to obtain competitive costing.
2. Rigid Ether Polyurethane Foam. Plama is presently using a dispensing machine from Cannon (Italy). This operation is done by filling a mold, therefore it is not a continuous operation. Freon 11 is also the blowing agent used in this operation. There has been discussions with Cannon regarding a new machine with the ability to process Cyclopentane instead of Freon 11. In order to accomplish this, the low pressure machine currently in use would have to be replaced with a high pressure machine. Once Plama has received the cost from Cannon for this equipment, they will forward to us.

At this time, and before I give the data of prices and consumptions of the raw materials, I feel I should report to you my findings about the people involved in this company in Slovenia. It is my feeling that we can give the best piece of machinery to a group of people together with the best chemicals, but nothing will be achieved if they do not have the motivation and desire to create something. This is not the case with Plama. On the contrary, it is

a group of highly motivated people, extraordinarily optimistic of the future, not only of their company but also of their country and working very hard. I am aware of the fact that this appraisal has nothing to do with the approval for the Multilateral Fund of the Montreal Protocol, but I feel impelled to mention it.

Prices of raw materials are in DM/Kg. and the 1993 consumption is is given in tons.

<u>Material</u>	<u>Price</u>	<u>1993 Consumption</u>
Polyethylene Resin	.96	221.0
Ether Polyol Flexible	2.02	2000.0
Ether Polyol Rigid	2.50	30.0
Ester Resin	2.48	600.0
TDI 80/20	3.70	
TDI 65/35	3.84	1400.0
MDI (for Rigid Foam)	3.60	30.0
Freon 11	1.98	100.0
Freon 114 (90 %)	4.26	68.9
Freon 12		
1,1,1 Trichloroethane	2.75	50.0
Isobutane (3.0 pts. replace 1.0 F11)	1.50	
Cyclopentane	Unknown at this time	



Город Сибирь, с подворьями,
1. 1. 1905

2. 1994

Hennecke

Polyurethan-Anlagentechnik

Ein Bayer  UnternehmenTELEFAXTELEFAXTELEFAXTELEFAX

Maschinenfabrik Hennecke GmbH

Birlinghovener Straße 30
D-53754 Sankt Augustin-BirlinghovenTelefon: Sankt Augustin 022 41/339-0
Telex: 889 410 mahe d
Telefax: 022 41/33 92 04Bahnstation:
Fracht: 53721 Siegburg
Express: 53721 Siegburg (bahnlagernd)AN/TO : Poliuretani-Plama
Podgrad

Z.H./ATTN. : Dr. Kastelic

CC :

FAX NO. : 0038-6682-815, 940

REF.No. : 2328 / 7164u hh

GESAMT SEITEN/TOTAL PAGES: 4

Ihre Zeichen

Ihre Nachricht vom

Unsere Zeichen

Telefon-Durchwahl
02241/339-

Sankt Augustin

VC/Kh-hh

212

22.02.94

BETR./RE: metering and mixer equipment
quotation no. 940198

Dear Dr. Kastelic,

we refer to the discussions with you and offer without obligation for the
production of CFC-free block foams:**1.0 1 metering unit for PU 3302**designed for a viscosity of about 750 mPa.s,
output of 1,0 - 5,0 l/min continuously variable.

working pressure: max. 150 bar

metering pump set consisting of:

- 1 series piston pump, type 6 ZWM 120 K.
The metering output of 1,0 - 5,0 l/min is continuously manually
adjustable via control rod with a constant speed of 970 rpm.
- 1 coupling with protection, for the connection of the metering pump
with the drive unit
- 1 drive motor with coupling
- 1 basic frame with leakage liquid basin,
for the common assembly of the metering pump and the drive unit on
the pump table unit

Maschinenfabrik Hennecke GmbH

The following parts are installed into the suction line connector of the metering pump set:

- 1 pipe line piece, rustfree design for the connection of the edge filter with the metering pump
- 1 edge filter, edge width 0,2 mm, in pressure-proof design with dirt outlet valve
- 1 shutoff valve (without electric locking unit)
- 1 contact pressure gauge, range of measurement 0 - 10 bar, with min. contact and liquid damping

The following parts of the delivery line of the metering pump set are installed:

- 1 safety valve opening pressure 150 bar
with overflow line leading back into the suction line connector of the metering pump
- 1 contact pressure gauge with min.-max. contacts
range of measurement 0 - 400 bar, with liquid damping
- 1 elektro-pneumatic recirculation and production device for switching the flow as follows:

recirculation: tank-pump-tank
production: tank-pump-mixer

consisting of:

- 2 ball valves which correspond with each other.
The switching operation of the 2 ball valves is effected via pneumtically operated double piston part-turn actuator.

The ball valves are electrically locked via limit switch and guarantee the right valve position.

In case of a faulty switching an optical and acoustic signal is released. Moreover, the plant cannot be started.

For the setting of the recirculation pressure equal to the working pressure:

- 1 injection block, rust-proof design with angular injector holder, injector and high-pressure hose line as well as leakage liquid line into the recirculation line connector.
- 1 test station with 2 manually adjustable shutoff valves (without electr. locking), incorporated into the recirculation line connector

Maschinenfabrik Hennecke GmbH

- 1 line going from the metering pump into the recirculation device and and work tank out of special steel
- 1 line out of special steel, from the recirculation device to the mixer with intercalated hose lines

2.0 1 metering unit for ammonium carbonate + water

designed for a viscosity of about 25 mPa.s at 25° C,
metering output of 1,0 - 5,0 l/min continuously adjustable

working pressure: max. 150 bar

metering pump set consisting of:

- 1 series piston pump, type 6 ZWM 120 K,
The metering output of 1,0 - 5,0 l/min. is continuously variable
via control rod with a constant speed of 970 rpm.

Further technical details as described under item 1.0, metering unit
for PU 3302.

3.0 1 conversion kit

for the modification of the mixer unit for the metering lines
specified under items 1 and 2.

4.0 1 conversion kit

for the integration of the new metering lines into the computer and
control cabinet,

5.0 2 storage tanks PU 3302 and ammonium carbonate + water

each consisting of:

one single-walled tank out of special steel, which is provided with 3
feet. Useful capacity 500 l, working pressure 4 bar.

On the tank there is a slewable DN 200 lid which is with fast-acting
closure.

1 pipe line out of special steel for the connection of the tank with
the metering unit.

Page 4 of fax to Poliuretani-Plama dated 22.2.1994

Maschinenfabrik Hennecke GmbH

price free factory (Poliuretani Plama) incl.
assembly and commissioning:

DM 349.500,00.

Delivery time: about 6 weeks

Payment: 100 % against irrevocable and confirmed letter of credit, opened
through Deutsche Bank AG, Bonn, payable as follows:
30 % downpayment with the order
70 % against presentation of the shipping documents

We hope that our quotation is of interest to you and await your further news
with interest.

Yours faithfully,

Maschinenfabrik Hennecke GmbH

C. Oelmann i. A. W. S.

Telefax transmission

date: 8th April, 1994

to: Rappa Inc.

attn: Mr. Bert Veenendaal

fax no.: 00-12193266047

from: L. Baars

number of pages: 1 (this page included)

RECEIVED



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P.O. Box 531
5140 AM Waalwijk NL
Tel +31 (0)4160 - 3 79 85
Fax +31 (0)4160 - 3 14 05

Commercial Register
Waalwijk Hr 16061

Message

Dear Mr. Veenendaal,

Additionally to the info regarding Izoterm Plama, we have got the missing part Rigid Polyurethane foam and the degassing building for the polyethylene foam.

- A. The local quotation for the degassing building of 800 m² building, contractor name Trimo

USD 140.000,=

- B. The change of CFC to pentane in Rigid Polyurethane foam will cost according to the Cannon quotation:

1 pc. Cannon high pressure machine "A-system 100" suitable for pentane

USD 127.200,=

1 pc. Cannon high pressure machine "A-system 200" suitable for pentane

USD 164.400,=

Additional equipment:

- rotating room (2x3.800,=)	USD 7.600,=
- agitator (2x1.720,=)	USD 3.440,=
- filling pump (2x1.020,=)	USD 2.040,=
- programming consolle (2x1.730,=)	USD 3.460,=
- IRD mini, monotoring output (2x6.815,=)	USD 13.630,=
- chiller (2x8.821,=)	USD 17.642,=
- packing & installation costs	USD 3.970,=
- multi easy froth	USD 56.990,=

Subtotal for B USD 400.372,=

Costs and profit Thermafex 3% USD 12.011,=

Total for B USD 412.383,=

Grand Total for A + B USD 552.383,=

With best regards,

THERMAFLEX ISOLATIE B.V.