file: Krummrich

FEB 4 - 1987

Monsanto

LAW DEPARTMENT

Monsanto Company
800 N. Lindbergh Boulevard
St. Louis, Missouri 63167
Phone: (314) 694-1000

February 3, 1987

Mr. William D. Ingersoll
Staff Attorney
Enforcement Programs
Illinois Environmental Protection
Agency
2200 Churchill Road
Springfield, IL 62706

Dear Mr. Ingersoll:

In your October 27, 1986 letter to me, you suggested several engineering controls, along with payment of a civil penalty and entry of a consent decree in connection with the incident which occurred at Monsanto's Krummrich Plant on March 3, 1986. My November 19, 1986 letter to you on this matter stated we would require additional time to better understand and study the U.S. EPA proposal regarding modification of the existing chlorosulfonic acid cooler system to operate without expansion joints. After giving full consideration to this matter, and discussing with other personnel the actions which have been taken by the Krummrich Plant subsequent to March 3, 1986, below is our response. I have set forth first the Agency's suggested action and then followed with Monsanto's response.

Action 1. Installation of a catch basin to hold the materials in case of emergency.

Response. Monsanto has completed its evaluation of the appropriateness of a catch tank system to allow emptying of the reaction system in emergency situations pursuant to recommendation number 4 of Monsanto's Incident Investigation dated March 4, 1986. The attached Monsanto preliminary project scope report dated January 27, 1987 (Attachment A) sets forth a proposed automated drain system to address emergency situations. As noted in the report, the proposed system does not require the installation of a separate catch tank. The plant is submitting the proposed automated drain system to upper management for approval and, upon receipt of such approval, will proceed with installation. Please note that the document referenced and marked as Attachment A hereto is marked and claimed as trade secret property of Monsanto Company.

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Monsanto hereby incorporates by reference the trade secret justification previously submitted to the Agency for the chlorosulfonic acid process on March 21, 1986.

Action 2. Monsanto should perform an in-depth engineering study to prepare for and enable Monsanto to replace the existing cooling system with one that does not utilize expansion joints.

Response. Monsanto has completed its evaluation of alternative cooling systems for the chlorosulfonic acid reactor cooler, and the findings are summarized in a Monsanto report dated July 29, 1986, which was transmitted to the Agency on July 30, 1986. The report concluded that a trombone cooler (cascade system) is the best available means to cool the chlorosulfonic acid. U.S. EPA, in its September 11, 1986 letter to the Agency, agrees that trombone (cascade) type coolers are acceptable in this application.

The U.S. EPA letter goes on to state that U.S. EPA considers the presence of "expansion joints [as] a permanent source of possible incidents" and that U.S. EPA "strongly recommend[s] that efforts to be made to try to eliminate the use of expansion joints." Monsanto disagrees with both statements. Plant personnel are not aware of any expansion joint failures prior to March 3, 1986 of the type which occurred on that date, and the chlorosulfonic acid unit has been in operation for approximately forty years. Monsanto has subsequently consulted with Pfaudler Company, an experienced manufacturer of glass-lined equipment and piping. Pfaudler installed the existing chlorosulfonic acid reactor cooler at the Krummrich Plant, and has consulted with Monsanto numerous times since then. Pfaudler has reviewed the existing cooler and the March 3, 1986 incident, and specifically recommends use of expansion joints in its December 5, 1986 letter to Monsanto (Attachment B). Monsanto concurs with this recommendation and believes that removal of the cooler expansion joints will increase the likelihood of acid releases. Replacement of the existing cascade cooler system with one not utilizing expansion joints is unsupported and inappropriate.

Action 3. During the interim time before the system is replaced, Monsanto should make monthly reports to the Agency providing the expansion joint replacement information including the exact reason for replacement (rather than a catch-all code number).

Response. Monthly reports are not appropriate or needed in this instance. Monsanto explained in its meeting with Agency personnel on July 17, 1986 that immediately after March 3, 1986 it had begun keeping a written log of specific repairs to the coolers, and had provided a copy to the Agency by letter dated July 30, 1986. Monsanto advised the Agency at the meeting that it was planning to develop a preventative maintenance program for the cooler. This program is now in place and is summarized in Attachment C. The Plant plans to make this system a continuing

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part of the cooler system operation. Accordingly, Monsanto does not believe that monthly expansion joint replacement reports to the Agency are necessary or appropriate.

Actions 4 and 5. Payment of a monetary civil penalty. The above commitments [action items 1-4] should be contained in an enforceable decree.

Response. It is Monsanto's view that such legal actions are inappropriate. There are several factors on which this conclusion is based. First, and perhaps most important, is the positive program which has been initiated by Monsanto to reduce the likelihood of future emissions. This is a broad program and covers the entire Krummrich Plant. Since 1980, some fifty process improvements to reduce emission potential have been installed at a cost of $9,000,000. Other projects to reduce emissions through engineering controls are continuing.

Second, at considerable cost in terms of both employee time and money, the Krummrich Plant has assisted State and local organizations in dealing with, and preparing for, emergency type situations. Among the examples of this type effort are: providing the industrial leadership in 1984 for installation of a community alarm system (for $65,000); visiting over twenty industries, municipalities and transportation agencies in 1986 to help improve and integrate local emergency response planning; conducting ten seminars in 1986 on handling chemical transportation emergencies for carriers and local fire departments; inviting local agencies, community leaders and others to visit the Krummrich Plant to view and discuss Plant products, operations, and emergency response capabilities. In addition, upon formation of the Illinois Governor's Chemical Safety Task Group, the Krummrich Plant requested to be included as one of the inspection sites. It was and the Plant received a perfect 4.0 rating.

Third, we feel it is significant that the emissions which occurred on March 3, 1986 resulted from causes which were beyond Monsanto's reasonable control. It seems inappropriate to penalize any party for events which the party intended to prevent and which resulted from causes beyond the reasonable control of the party.

It would appear to be in the best interests of the State of Illinois that all citizens--corporate and individual--work together in an effort to improve the well-being of all. We feel that Monsanto's actions, particularly over the last two years, reflect well on its posture as a good corporate citizen. Any action at this time to penalize Monsanto for events which were unintended would seem to be contrary to the best interests of the State as a whole.

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If after reviewing this letter there is still some feeling within the Agency that an action of some sort should be taken in connection with the March 3, 1986 incident, I would like to have a prior meeting with you to review the matters discussed above in greater detail.

Very truly yours,

PHS

Peter H. Smith
Environmental Attorney

PHS:chPHSch16

Enc.

bcc: T. M. Bistline
M. F. Foresman
W. L. Smull

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TRADE SECRETS

PRELIMINARY PROJECT SCOPE

CHLOROSULFONIC ACID DRAINAGE SYSTEM

DEPARTMENT 217

MONSANTO CHEMICAL COMPANY

TECHNICAL SERVICE DEPARTMENT

W. G. KRUMMRICH PLANT

SAUGET, ILLINOIS

PREPARED BY: C. McGEE

DATE: JANUARY 27, 1987

DSW 136468

ATTACHMENT A

STLCOPCB4036430

TRADE SECRETS

DEPARTMENT 217

CHLOROSULFONIC ACID DRAINAGE SYSTEM PRELIMINARY SCOPE

PURPOSE

The project will purchase and install the equipment necessary to provide an automated drain system for the Chlorosulfonic Acid Finisher, Reactor and Reactor Coolers. The system will be initiated from the Provox console so that the conditions in the immediate area will not affect the draining operation.

BACKGROUND AND NEED

On March 3, 1986, the Chlorosulfonic Acid unit experienced a release of an acid mist fog resulting from a leaking expansion joint on the Chlorosulfonic Acid Reactor Coolers. Plant emergency response personnel responded to the scene and immediately began applying a water fog to the acid fog leaving the area per emergency response procedures for Chlorosulfonic Acid. Upon determining that water had not entered the process and created a rupture, the acid was pumped to product storage stopping the leak. The investigation which resulted from the incident recommended an evaluation of a catch tank system to allow emptying of the reactor system in emergency situations.

PROJECT SCOPE

The proposed automated drain system will allow the Finisher, Reactor and Reactor Coolers to be drained in an emergency situation with minimum personnel exposure to the drain system area. The pump and the valves can be activated with a few key strokes on the Provox console. The system will be set up so that either G-6 or G-7 can be used as the drain tank. Once the emergency drain system is activated:

- the Reactor and Finisher pumps will shut off,
- automatic block valves on the Finisher, Reactor and Reactor Cooler drain lines will open,
- the automatic block valves on the appropriate storage header lines will open or close and,
- the drain pump will transfer the material to the tank.

Manual valves will be placed on the air lines to the automatic block valves. This will allow manual operation of the automatic valves if necessary. The automatic valves will "fail last position" in the event that instrument air pressure is lost.

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ATTACHMENT A

STLCOPCB4036431

TRADE SECRETS

OTHER ALTERNATIVES

DO NOTHING:

This alternative is not recommended. It does not eliminate the need for an emergency drain system in the case of a leak.

INCLUDE AN IN-LINE SPARE PUMP IN ADDITION TO THE PROPOSED PROJECT:

This alternative is not recommended. The department is currently operating on a five day per week schedule. Every week the unit will be shut down and drained using the proposed system. This will permit testing/monitoring of the drain system on the average once per week. The existing pump has been demonstrated to be very reliable. Given the frequent usage and historical mechanical reliability of the system, installation of a second pump is not necessary.

INCLUDE AN ALTERNATE POWER SUPPLY (IN THE DEPARTMENT) TO RUN ONLY THE DRAIN PUMP IN ADDITION TO THE PROPOSED PROJECT:

This alternative is not recommended. A power failure will not itself create a situation where the Chlorosulfonic Acid Finisher, Reactor and Reactor Coolers would need to be drained. The only circumstances where an alternate power supply would be a factor is if an unrelated power failure should occur concurrent with the specific time an emergency pump out were necessary. This is an extremely unlikely situation and consequently an alternate power supply is not necessary.

PROVIDE A TANK WHICH WILL ALLOW THE MATERIAL TO BE GRAVITY DRAINED IN ADDITION TO THE PROPOSED PROJECT:

This alternative is not recommended. This addition to the proposed project would only be necessary in the event that the pump failed or power were lost from the substation coincidentally with an unrelated emergency which created a need to drain the equipment. This is an extremely unlikely situation and consequently an additional tank is not necessary. Draining the systems via gravity would normally be a more time consuming operation than pumping it empty.

PROVIDE A NEW TANK DESIGNED TO HANDLE A WEAK ACID OR WATER LAYER:

This alternative is not recommended. A change in the startup and shutdown procedure has significantly reduced the possibility of water entering the system to such an extent that the additional tank and equipment is not necessary.

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TRADE SECRETS

OTHER ALTERNATIVES (cont'd)

PROVIDE COMPRESSED AIR SUPPLY TO "BLOW" THE EQUIPMENT EMPTY IN ADDITION TO THE PROPOSED PROJECT:

This alternative is not recommended. This process normally operates at or near atmospheric pressure. Under the unlikely circumstances when an emergency drain would be required, the introduction of positive air pressure on the leaking system would further contribute to the losses and would likely worsen the situation. For this reason, this alternative is not recommended.

CAPACITY

The project will not affect the capacity.

LOCATION OF FACILITIES

All additions will occur within the battery limits of the Acid Division.

EXPECTED COST RANGE

The capital cost of this project is expected to be $95k.

EXPECTED TIMING

Project completion is expected 9 months after A.R. approval.

ENVIRONMENTAL

The project will decrease the duration of any acid mist/fog releases resulting from a leak in the Finisher, Reactor or Reactor Coolers. It will not prevent or reduce the instantaneous magnitude of a release.

EMPLOYEE EXPOSURE TO HAZARDOUS MATERIALS

This project will decrease the duration of major leaks and releases resulting in reduced exposure to Chlorosulfonic Acid and its fumes. The emergency drain system can be activated from the Provox console, keeping personnel out of the immediate release/leak area.

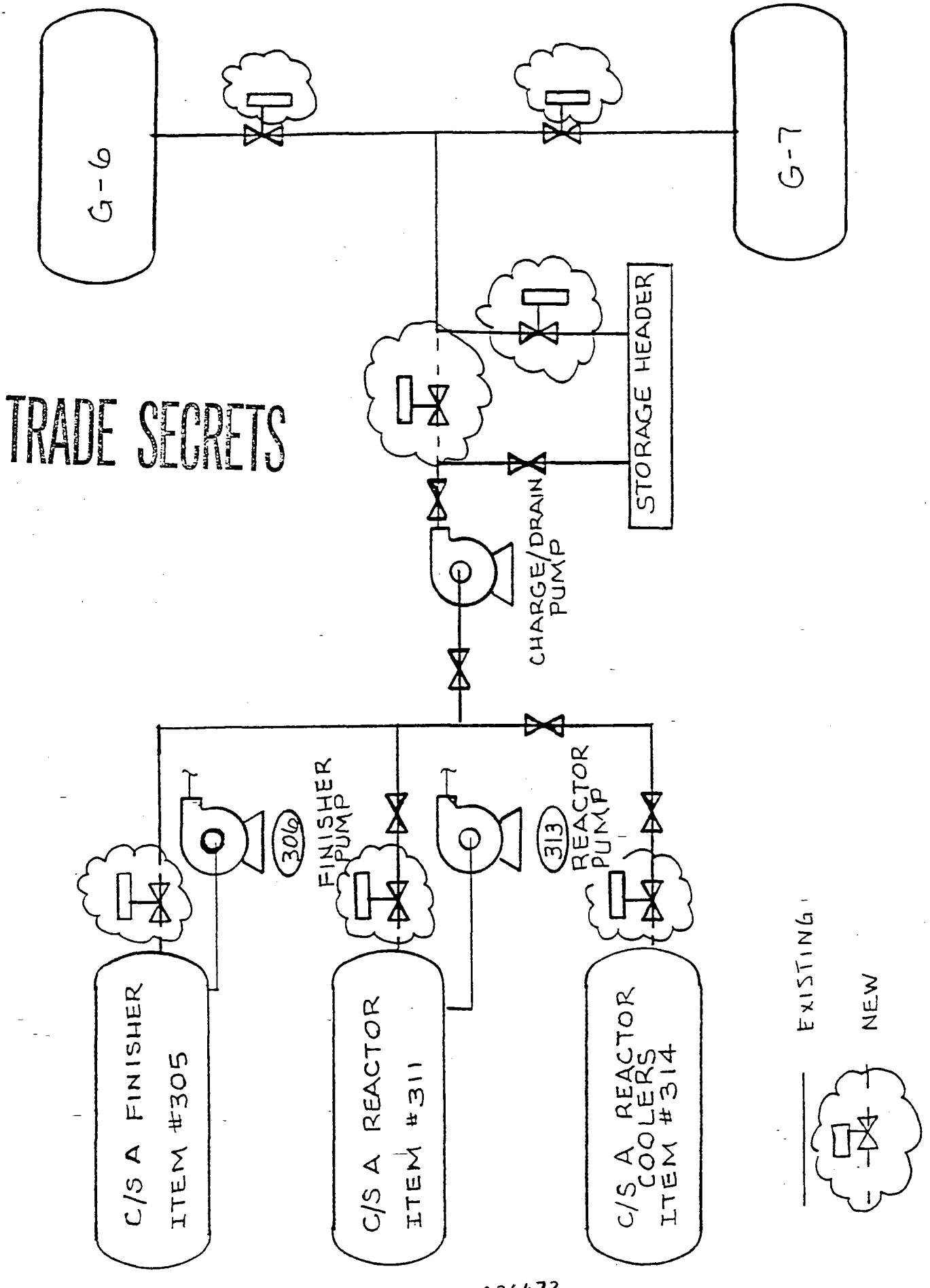
PRODUCTION CONTINUITY

The necessary tie-ins can be made during regularly scheduled down time thus minimizing production delays.

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ATTACHMENT A

STLCOPCB4036433



TRADE SECRETS

DSW 136472

ATTACHMENT A

STLCOPCB4036434

PFAUDLER

The Pfaudler Company

Reply to:
Don Doell
1310 Cambria Drive
Suite 6203
Schaumburg, IL 60193
312 894 6609

1000 West Avenue • P.O. Box 1600 • Rochester, NY 14692 • 716 235 1000 • TLX 978239

December 5, 1986

Mr. Paul Brewer
Monsanto Chemical Company
500 Monsanto Avenue
Sauget, IL 62206

Dear Mr. Brewer:

Thank you for the courtesies extended to me during my recent visit to your plant to review your CSA cooler installation.

As you know Pfaudler routinely recommends the use of expansion joints with glasslined piping systems. Expansion joints help minimize thermal stresses which may cause glass damage. In addition, they reduce stress in the flange area to help reduce gasket leakage. Please see the attached instruction manual for glasslined pipe.

After reviewing your glasslined pipe installation, Pfaudler recommends the use of expansion joints. Since concern has been raised over a recent joint failure, Pfaudler also recommends regular inspection of these expansion joints and replacement as necessary.

Please contact us if you have any questions.

Sincerely,
The Pfaudler Co.

Donald Doell

Donald Doell
Sales Engineer

cc: William DeFeri
Chris McGee

DSW 136473

ATTACHMENT B

STLCOPCB4036435

PFAUDLER

Glasteel® Pipe And Fittings

Instruction Manual IM55-100-2

1. DESCRIPTION

Pfaudler® Glasteel pipe and fittings are lined with corrosion-resistant glass fused to a steel substrate. Pfaudler glass is hard, nonpermeable and chemically inert. The metal substrate is rigid, strong and durable.

The natural, fire-polished, smooth surface of Pfaudler glass adds important benefits to many piping installations. It provides a non-adhering surface for transferring sticky products. Cleaning is relatively easy and can often be done in place. Metal-sensitive materials are protected when handled through inert glass-lined pipe. When your process conditions change, you can probably reuse your existing Pfaudler pipe because of its wide-range resistance to corrosion.

1.1 Construction

Glasteel pipe and fittings are manufactured in accordance with the following standards:

Pipe	ASTM A-106, Gr. B
Pipe Flanges	ASTM A-181-60
Elbows, Tees, Crosses, Reducers	ASTM A-234, Gr. WPB
Spacers, Reducing Flanges	ASTM A-285-C
Blind Flanges	ASTM A-285-B

Glasteel fittings provide the highest level of performance in terms of pressure-temperature limits when used with Glasteel pipe.

1.2 Thermal Shock

Pfaudler glass is scientifically compounded to make it adhere to metal. During the firing process used to fuse the glass to the metal, helpful compressive stresses are built into the glass layer. However, the glass is subject to thermal shock damage. There are definite temperature limits above which damage can occur. Safe temperature differentials have been determined, but vary with the respective substrate metal, geometric configuration and operating conditions. The maximum, safe, temperature differential is provided as a guide.

The condition most likely to cause thermal shock damage is pumping a cold charge into a hot glass-lined pipe. Pumping a hot charge into a cold glass-lined pipe may cause a similar thermal shock condition. There are other operating conditions where temperature differentials will be encountered, but these are not as critical.

The maximum, safe, temperature differential when the glass lining is at a temperature less than 121 °C (250 °F) is 128 °C (230 °F).

CAUTION: ***The risk of damaging equipment by thermal shock increases as the operating temperature exceeds 121°C (250°F). Consult Pfaudler before operating above 121°C (250°F).***

1.3 Evaluate Temperature Limitations

Consult Table I when planning a glass-lined pipe installation to make sure that all of the components are evaluated in terms of their respective operating and thermal shock limits. The LOWEST temperature limit must be applied to the ENTIRE glass-lined pipe installation.

2. INSTALLATION

2.1 General Precautions

Glasteel pipe and fittings are very tough but must be handled carefully to prevent damage to the glass lining.

CAUTION: ***Never strike glass-lined pipe and fittings with tools or other hard objects. Glass damage could result. Mechanical stresses caused by unequal or excessive bolt torques, springing or pulling pipe into position, or clamping pipe too tightly (which prevents uniform thermal expansion) can result in damage to the glass. Never weld to the exterior of a Glasteel part without consulting Pfaudler.***

2.2 Applicable ANSI Standard

Make sure you read and understand ANSI/ASME B31.3 before installing any Glasteel pipe and fittings. This standard contains the information you must have to assemble a safe, reliable process piping installation.

2.3 Gaskets

Gaskets must be inserted between all glassed flanges. The use of Pfaudler PTFE-envelope gaskets for

TABLE I — TEMPERATURE LIMITS OF PFAUDLER GLASTEEL PIPE AND FITTINGS

AT 150 PSI

CORROSION:	
Continuous exposure to acid environment	121 °C (250 °F)*
THERMAL SHOCK:	
When glass lining is less than 121 °C (250 °F)	128 °C Δ T (230 °F Δ T)
OPERATING (from −29 °C (−20 °F) to temperature listed below):	
Plain pipe (includes pipe with side outlets)	232 °C (450 °F)
Fittings (elbows, tees, crosses, etc.)	232 °C (450 °F)
Reducing flanges	232 °C (450 °F)
Blind flanges	232 °C (450 °F)

*Up to 232 °C (450 °F) for some applications. Consult Pfaudler.

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ATTACHMENT B

STLCOPCB4036436

TABLE II — RECOMMENDED BOLT TORQUES [1]

FOR ANSI CLASS 150 STANDARD BOLTING
(foot pounds)

NOZZLE SIZE (in.)	BOLTS [2, 3]		CRT, CRT-AF GASKETS	
	NO.	SIZE (in.)	LUB.[4]	DRY
1	4	½	20	30
1½	4	½	20	30
2, 3	4	⅝	40	60
4, 5	8	⅝	40	60
6, 8	8	¾	70	100

FOR ANSI CLASS 300 STANDARD BOLTING
(foot pounds)

NOZZLE SIZE (in.)	BOLTS [2, 3]		CRT, CRT-AF GASKETS	
	NO.	SIZE (in.)	LUB.[4]	DRY
1	4	⅝	40	60
1½	4	¾	70	100
2	8	⅝	40	60
3, 4	8	¾	70	100
6	12	¾	70	100
8	12	⅞	110	160

1. Torques are recommended for well-lubricated (LUB.) and for unlubricated (DRY) bolts.
2. ASME Spec. SA 193 Grade B7, indentified by B7 stamped on J-bolt or bolt head.
3. ASME Spec. SA 194 Grade 2H nuts, identified by 2H stamped on top surface.
4. Pfaudler strongly recommends lubrication to reduce variable binding between the bolt and nut. The nut should also ride freely over the complete length of the bolt threads before assembly.

joining Glasteel pipe and fittings is strongly recommended. These gaskets are soft and compressible and provide a tight seal without damage to the glass sealing surface. They are non-porous and free of ridges and bulky joints. They withstand the operating temperature and pressure limits for Pfaudler Glasteel pipe and fittings. They can be shimmed when necessary. The corrosion resistance of Pfaudler envelope gaskets is comparable to that of Pfaudler glass.

2.4 Bolting And Split Flanges — All non-drilled flanged pipe and fittings are furnished with Pfaudler steel split flanges drilled to ANSI Class 150 or Class 300 standards. ASME SA 180-60 forged steel is used for the 1½ through 8 inch diameters; A536-60 for the 1 inch diameter. A square-shape split flange is supplied with the 1, 1½, 2 and 3 inch pipe and fittings where flange clearance is minimal. A round shape is furnished on the larger sizes. Recommended bolt torques are given in Table II.

2.5 Layout
Layout of Glasteel piping is, in general, the same as for conventional piping. A difference is that steps must be taken to prevent undue stresses, particularly at the flanged joints. It is good practice to provide a number of offsets, using elbows, expansion joints, etc., to ease fit-up and to minimize thermal stress. In addition, supports should be provided at 10-foot intervals to prevent sagging at the joints, which can cause leakage.

Another difference is that reducing fittings such as tees, crosses and elbows are neither supplied nor recommended. When such a reducing situation arises, a combination of straight fittings and either straight reducers or reducing flanges will best meet the need.

Allow ¼ inch per joint to compensate for the combined thickness of the glass coating on the flanges and the compressed sealing gasket.

Do not fix the position of small pieces of equipment such as pumps until after the piping has been made up. This will permit an adjustment that might not be possible otherwise.

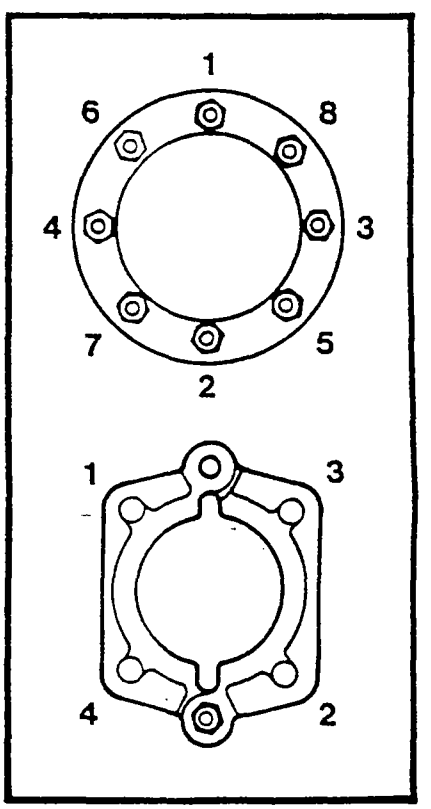


Figure 1. Bolt Tightening Sequence

DSW 136475

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Industrial Products Company
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ATTACHMENT B

2.6 Installation Precautions

1. Avoid stress at all joints. Keep pipe and fittings free to move to avoid stress when connecting flanges. Use expansion joints* in lines between two vessels to permit both axial and lateral adjustment. Use expansion joints* in longer lines if they are rigidly connected. Use expansion joints* at places where there is a source of vibration, such as pumps. Assemble offsets, condensers, etc. in snake fashion, i.e., consecutively along the lines. This will reduce strain at the flanges because the pipe will be free to move laterally.

2. Never pull or spring pipe into place. Make sure all joints are on same center line with flanges nearly touching (normally within ¼ inch and never more than ½ inch apart). Use offset arrangements and/or expansion joints to correct misalignment and adjust length. Where practical, use spacers to make any minor length adjustments along the line. Glasteel spacers ½ to 3 inches long are available. If line is sloped, use tapered gaskets. Gaskets with ½ degree slope can be supplied.*

3. Make sure mating flanges are parallel. Measure distance between flanges at several points around circumference. Readjust piping or shim gaskets to correct misalignment. Recheck alignment. Shim gasket to correct minor discrepancies. Refer to IM81-100 for shimming procedures.

4. Secure the flanges properly. Use correct size gasket. Install split flanges and tighten two fastening bolts supplied. Tighten bolts evenly around flanges (see Figure 1). Table II lists recommended sizes; refer also to ANSI/ASME B31.3. Use only recommended sizes. Use only recommended bolt torques as listed in Table II.

5. Support lines properly. Place supports at 10-foot intervals to keep joints from sagging. On vertical runs, use riser clamps above or below floors. Where possible, install clamp below a joint. Do not support piping too rigidly. Allow some freedom of movement to relieve thermal stress.

6. Retighten all bolts and clamps after one operating cycle, or after at least 24 hours at rest.

7. DO NOT insulate over flanges until product has completely cycled.

*Available from Pfaudler Edlon Division

3. PREVENTIVE MAINTENANCE

1. Check bolt torques at all joints regularly.

2. Check joints for leaks. If a joint leaks:

a. Make sure bolts are tightened evenly.
b. Replace gasket if necessary.
c. Correct any possible cause of strain at joint.

3. Watch for acid spills on outside of pipe or fitting, and hose off immediately. Acid spills may react with the steel causing chipping or fish-scaling of glass on inside.

4. Check periodically for any external damage that may have caused breakage of glass on inside. Be sure to replace any damaged part.

5. If pipe is jacketed, clean inside of jacket regularly at intervals determined by experience. Refer to IM81-100 for cleaning procedure.

4. HOW TO ORDER

1. To order pipe, specify:

a. The desired number of pieces
b. Nominal diameter
c. Actual length of each piece to nearest ⅛ inch.

2. To order fittings, specify:

a. Each type of fitting by name
b. Nominal diameter or size of each fitting.
c. Desired quantity of each

3. Specify gaskets separately. Indicate the number needed and use nominal pipe diameter to show gasket size.

NOTE: There is no need to order split flanges. Pfaudler automatically supplies the required number of steel split flanges for each length of pipe and each fitting that you order.

4. Address all orders to:

THE PFAUDLER COMPANY
Attention: Parts Dept.
P.O. Box 1600
Rochester, NY 14692

Telephone: 1-800-828-6545*

*In New York and Canada call: 1-716-235-1000.

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ATTACHMENT B

These installation, operation and maintenance instructions are believed to be reliable general guidelines for usage of the equipment described herein. THE PFAUDLER COMPANY EXPRESSLY DISCLAIMS ANY WARRANTY, EXPRESS OR IMPLIED, OF FITNESS FOR ANY SPECIFIC PURPOSE IN CONNECTION WITH THE INFORMATION CONTAINED HEREIN.

Unless otherwise specifically provided in the contract of sale, Pfaudler does not provide project engineering, process design or plant layout services and, accordingly, the information presented herein is general in nature and should not be considered applicable to any specific process or application. While Pfaudler equipment is designed and manufactured in accordance with applicable codes and good manufacturing practices, it is the responsibility of the user to locate and install the equipment and provide those safety and warning devices which are appropriate for the specific application intended by the user.

DEFINITION OF POTENTIAL HAZARDS

The following definitions are presented to clearly identify the degrees of hazard that are recognized by The Pfaudler Company as being involved in the installation and use of vessel accessories and are dealt with in the Instruction Manual. Each definition is given a characteristic typographic treatment and format here and throughout the Instruction Manual to help readily identify the degree of hazard referred to in all cases.

DANGER: IDENTIFIES HAZARDS WHICH WILL RESULT IN SEVERE PERSONAL INJURY OR DEATH.

WARNING: Identifies hazards which could result in personal injury.

CAUTION: ***Identifies hazards which could result in damage to equipment or property.***

NOTE: Alerts users to pertinent facts and conditions.

Pfaudler
a Sohio Company

The Pfaudler Company
P.O. Box 1600
Rochester, NY 14692
716-235-1000
(Telex 978239)

You'll find us nearby.

Contact our sales representative in the Pfaudler branch office nearest you:

Albany, NY	518-785-4466
Charlotte, NC	704-541-5953
Chicago, IL	312-671-0474
Cincinnati, OH	513-561-8068
Davis, CA	916-753-4120
Detroit, MI	313-855-6220
Houston, TX	713-492-7243
New Jersey/New York Metro Area	201-882-9483
Philadelphia, PA	215-692-7704
Rochester, NY	716-235-1000
St. Gabriel, LA	504-642-5436

*Service Call appointments can be scheduled thru these offices.

DSW 136477

Monsanto

Total Quality

FROM (NAME—LOCATION—PHONE) P. J. Shaw W.G.K. Plant

DATE : January 28, 1987

SUBJECT : C/S REACTOR COOLER INSPECTION PROGRAM

REFERENCE :

TO : B. DeFer

The Chlorosulfonic Acid reactor coolers are currently on a routine inspection program. Details of the program are as follows:

1. The production first line supervisor will inspect the coolers each week while the unit is shutdown. Results of the inspection will be logged in the cooler inspection booklet. He will fill-in the date, observation, job number (if needed), and signature.

2. The maintenance first line supervisor will check this booklet each week. He will update the work done, part number, inspection results, noting specific information for each repair, date completed, and signature sections of the booklet consistent with the production first line supervisor.

3. The production engineer will review this booklet on a quarterly basis. He is responsible for determining reoccurring problem areas and developing an action plan.

4. The reactor coolers were added to the department SIAM list with a 6 month frequency of inspection by the M&MT group.

P. J. Shaw

PS/jc

DSW 136478

ATTACHMENT C

STLCOPCB4036440