

Cover Letter

OPPT Document Control Officer
Mail Stop 7407
US EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Attn: Ms. Anna Coutlakis

Dear Anna:

Please find attached an electronic submission for a new chemical scheduled to be manufactured under the TSCA PMN Section 5 program. This product is being submitted by Corsicana Technologies, Inc. (dba CorsiTech) which is a wholly owned subsidiary of Permian Mud Services, Inc. CorsiTech will be the sole manufacturer of this product. This PMN substance will be used as an oilfield clay and shale stabilizer additive in well stimulation and drilling fluids. As such, given the highly proprietary nature of drilling fluid mixtures, the manufacturing and use information is considered to be CBI.

We have filed a Bona Fide Intent to Manufacture letter with EPA and have been advised that the product is not on the TSCA Inventory.

We request that the substance be listed on the confidential portion of the TSCA Inventory and will be submitting CBI justifications for that at the time of the Notice of Commencement (NOC) filing.

Certain documents within the list of attachments will refer to the PMN substance as either Klay Safe EF or CLC 3-79 which was the chemical substance designation used by CorsiTech during early evaluations.

I have been appointed to be the Technical Contact for this Section 5 activity by CorsiTech. I hope that this brief explanation is sufficient to clarify the information provided in the PMN. As always, feel free to contact me with any questions.

Sincerely yours,

Lawrence N. Curcio, Ph.D.
President
The Solutous Group, LLC



PMN2011P1

Form Approved. O.M.B. Nos. 2070-0012 and 2070-0038

U.S. ENVIRONMENTAL PROTECTION AGENCY		AGENCY USE ONLY	
 EPA	PREMANUFACTURE NOTICE		Date of receipt: _____
	FOR NEW CHEMICAL SUBSTANCES		
When completed, send this form to:	If sending by Courier: Office of Pollution Prevention and Toxics Document Control Office (7407M) US EPA, 1201 Constitution Ave NW WASHINGTON, D.C. 20460 Contact Numbers: 202-564-8930/8940	If sending by US Mail: Office of Pollution Prevention and Toxics Document Control Office (7407M) US EPA, 1200 Pennsylvania Ave NW WASHINGTON, D.C. 20460	Submission Report Number
			PMN2111129674298632
Total Number of Pages	User Fee Payment ID Number		TS Number
82	Check number 36082 USPS certified mail tracking number 7006-2760-0002-7971-8950		CS265T
GENERAL INSTRUCTIONS			
<ul style="list-style-type: none"> You must provide all information requested in this form to the extent that it is known to or reasonably ascertainable by you. Make reasonable estimates if you do not have actual data. Before you complete this form, you should read the "Instructions Manual for Premanufacture Notification" (the Instructions Manual is available from the Toxic Substances Control Act (TSCA) Information Service by calling 202-554-1404, or faxing 202-554-5603). If a user fee has been remitted for this notice (40 CFR 700.45), indicate in the boxes above the TS-user fee identification number you have generated. Remember, your user fee ID number must also appear on your corresponding fee remittance. For mailing address information see the Help instructions in the e-PMN tool. 			
Part I – GENERAL INFORMATION		TEST DATA AND OTHER DATA	
<p>You must provide the currently correct Chemical Abstracts (CA) Name of the new chemical substance, even if you claim the identity as confidential. You may authorize another person to submit chemical identity information for you, but your submission will not be complete and the review will not begin until EPA receives this information. A letter in support of your submission should reference your TS user fee identification number. For all Section 5 Notice submissions (paper or electronic) you must submit an original notice including all test data; if you claimed any information as confidential, an original sanitized copy must also be submitted.</p>		<p>You are required to submit all test data in your possession or control and to provide a description of all other data known to or reasonably ascertainable by you, if these data are related to the health and environmental effects on the manufacture, processing, distribution in commerce, use, or disposal of the new chemical substance. Standard literature citations may be submitted for data in the open scientific literature. <u>Complete test data (written in English), not summaries of data, must be submitted if they do not appear in the open literature.</u> You should clearly identify whether test data is on the substance or on an analog. Also, the chemical composition of the tested material should be characterized. Following are examples of test data and other data. Data should be submitted according to the requirements of §720.50 of the Premanufacture Notification Rule (40 CFR Part 720).</p>	
Part II – HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE		Test Data (Check Below any included in this notice)	
<p>If there are several manufacture, processing, or use operations to be described in Part II, sections A and B of this notice, reproduce the sections as needed.</p>		<input checked="" type="checkbox"/> Environmental fate data <input checked="" type="checkbox"/> Other Data <input type="checkbox"/> Health effects data <input checked="" type="checkbox"/> Risk Assessments <input checked="" type="checkbox"/> Environmental effects data <input checked="" type="checkbox"/> Structure/activity relationships <input checked="" type="checkbox"/> Physical/Chemical Properties (A physical and chemical properties worksheet is located on the last page of this form.) <input type="checkbox"/> Test data not in the possession or control of the submitter	
Part III – LIST OF ATTACHMENTS		TYPE OF NOTICE (Check Only One)	
<p>For paper submissions, attach additional sheets if there is not enough space to answer a question fully. Label each continuation sheet with the corresponding section heading. In Part III, list these attachments, any test data or other data and any optional information included in the notice.</p>		<input checked="" type="checkbox"/> PMN (Premanufacture Notice) <input type="checkbox"/> SNUN (Significant New Use Notice) <input type="checkbox"/> TMEA (Test Marketing Exemption Application) <input type="checkbox"/> LVE (Low Volume Exemption) @ 40 CFR 723.50(c)(1) <input type="checkbox"/> LOREX (Low Release/Low Exposure Exemption) @ 40 CFR 723.50(c)(2) <input type="checkbox"/> LVE Modification <input type="checkbox"/> LOREX Modification <input type="checkbox"/> Mock Submission <input type="checkbox"/> Mark (X) if pending Letter of Support	
OPTIONAL INFORMATION		IS THIS A CONSOLIDATED PMN (Y/N)?	
<p>You may include any information that you want EPA to consider in evaluating the new substance. On page 11 of this form, space has been provided for you to describe pollution prevention and recycling information you may have regarding the new substance. "Binding" boxes are included throughout this form for you to indicate your willingness to be bound to certain statements you make in this section, such as use, production volume, protective equipment . . . The intention is to reduce delays that routinely accompany the development of consent orders or Significant New Use Rules. Checking a "binding" box in a PMN does not by itself prohibit the submitter from later deviating from the information (except chemical identity) reported in the form; however, in the case of exemption applications (such as TMEA, LVE, LOREX) certain information provided in such notifications is binding on the submitter when the Agency approves the exemption application, especially if the production volume "binding" box is chosen in a LVE.</p>		_____ # of chemicals or polymers (Prenotice Communication # required, enter # on p. 3). <input checked="" type="checkbox"/> Mark (X) if any information in this notice is claimed as confidential.	
CONFIDENTIALITY CLAIMS			
<p>You may claim any information in this notice as confidential. To assert a claim on the form, mark (X) the confidential box next to the information that you claim as confidential. To assert a claim in an attachment, circle or bracket the information you claim as confidential. <u>If you claim information in the notices as confidential, you must also provide a sanitized version of the notice, (including attachments).</u> For additional instructions on claiming information as confidential, read the Instructions Manual.</p>			



The public reporting and recordkeeping burden for this collection of information is estimated to average 93 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed EPA Form 7710-25 to this address.

CERTIFICATION -- A printed copy of this signature page, with original signature, must be submitted with CD or paper submission.

I certify that to the best of my knowledge and belief:

1. The company named in Part I, section A, subsection 1a of this notice form intends to manufacture, import or process for a commercial purpose, other than in small quantities solely for research and development, the substance identified in Part I, Section B.
2. All information provided in this notice is complete and truthful as of the date of submission.
3. I am submitting with this notice all test data in my possession or control and a description of all other data known to or reasonably ascertainable by me as required by §720.50 of the Premanufacture Notification Rule.

Additional Certification Statements:

If you are submitting a PMN, Intermediate PMN, Consolidated PMN, or SNUN, check the following **user fee** certification statement that applies:

- The Company named in Part I, Section A has remitted the fee of \$2500 specified in 40 CFR 700.45(b), or
- The Company named in Part I, Section A has remitted the fee of \$1000 for an Intermediate PMN (defined @ 40 CFR 700.43) in accordance with 40 CFR 700.45(b), or
- The Company named in Part I Section A is a small business concern under 40 CFR 700.43 and has remitted a fee of \$100 in accordance with 40 CFR 700.45(b).

If you are submitting a **Low Volume Exemption (LVE)** application in accordance with 40 CFR 723.50(c)(1) or a **Low Release and Low Exposure Exemption (LoRex)** application in accordance with 40 CFR 723.50(c)(2), check the following certification statements:

- The manufacturer submitting this notice intends to manufacture or import the new chemical substance for commercial purposes, other than in small quantities solely for research and development, under the terms of 40 CFR 723.50.
- The manufacturer is familiar with the terms of this section and will comply with those terms; and
- The new chemical substance for which the notice is submitted meets all applicable exemption conditions.
- If this application is for an LVE in accordance with 40 CFR 723.50(c)(1), the manufacturer intends to commence manufacture of the exempted substance for commercial purposes within 1 year of the date of the expiration of the 30 day review period.

The accuracy of the statements you make in this notice should reflect your best prediction of the anticipated facts regarding the chemical substance described herein. Any knowing and willful misrepresentation is subject to criminal penalty pursuant to 18 USC 1001.

Confidential

Signature and title of Authorized Official (Original Signature Required)

Date



PMN Page 3

Part I -- GENERAL INFORMATION

Section A – SUBMITTER IDENTIFICATION

Mark (X) the "Confidential" box next to any subsection you claim as confidential

1a. Person Submitting Notice (in U.S.) Confidential

Name of Authorized Official	(first) Michael	(last) Powell	<input type="checkbox"/>
Position	Product Stewardship Advisor		
Company	CorsiTech		
Mailing Address (number & street)	3200 SW Freeway, Suite 2700		
City	Houston	State TX Postal Code 77027	
email	michael.powell@corsitech.net		

b. Agent (if Applicable) Confidential

Name of Authorized Official	(first)	(last)	<input type="checkbox"/>
Position			
Company			
Mailing Address (number & street)			
City		State Postal Code	
e-mail		Telephone (include area code)	

c. Joint Submitter (if applicable) Confidential

If you are submitting this notice as part of a joint submission, mark (X)			<input type="checkbox"/>
Name of Authorized Official	(first)	(last)	<input type="checkbox"/>
Position			
Company			
Mailing Address (number & street)			
City		State Postal Code	
e-mail		Telephone (include area code)	

2. Technical Contact (in U.S.) Confidential

Name of Authorized Official	(first) Lawrence	(last) Curcio	<input type="checkbox"/>
Position	President		
Company	The Solutous Group, LLC		
Mailing Address (number & street)	1217 Salem Lane		
City	Chapel Hill	State NC Postal Code 27516	
e-mail	lcurcio@solutous.com	Telephone (include area code) 919-942-0408	

3.	If you have had a prenotice communication (PC) concerning this notice and EPA assigned a PC Number to the notice, enter the number.		Mark (X) if none	Confidential
			<input checked="" type="checkbox"/>	<input type="checkbox"/>
4.	If you previously submitted an exemption application for the chemical substance covered by this notice, enter the exemption number assigned by EPA. If you previously submitted a PMN for this substance enter the PMN number assigned by EPA (i.e. withdrawn or incomplete).		Mark (X) if none	Confidential
			<input checked="" type="checkbox"/>	<input type="checkbox"/>
5.	If you have submitted a notice of Bona fide intent to manufacture or import for the chemical substance covered by this notice, enter the notice number assigned by EPA.	XXX	Mark (X) if none	Confidential
			<input type="checkbox"/>	<input checked="" type="checkbox"/>

6. Type of Notice – Mark (X)

1.	Manufacture Only <input checked="" type="checkbox"/>	2.	Import Only <input type="checkbox"/>	3.	Both <input type="checkbox"/>
	Binding Option <input type="checkbox"/>		Binding Option <input type="checkbox"/>		



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Part I – GENERAL INFORMATION -- Continued

Section B – CHEMICAL IDENTITY INFORMATION:		You must provide a currently correct Chemical Abstracts (CA) name of the substance based on current CA index nomenclature rules and conventions.			
Mark (X) the "Confidential" box next to any item you claim as confidential					
Complete either item 1 (Class 1 or 2 substances) or 2 (Polymers) as appropriate. Complete all other items.					
If another person will submit chemical identity information for you (for either Item 1 or 2), mark (X) the box at the right. Identify the name, company, and address of that person in a continuation sheet.				<input type="checkbox"/>	
1. Class 1 or 2 chemical substances (for definitions of class 1 and class 2 substances, see the Instructions Manual)		Class 1	Class 2	CBI	
a. Class of substance - Mark (X)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Chemical name (Currently correct Chemical Abstracts (CA) Name that is consistent with TSCA Inventory listings for similar substances. For Class 1 substances a CA Index Name must be provided. For Class 2 substances either a CA Index Name or CA Preferred Name must be provided, which ever is appropriate based on current CA index nomenclature rules and conventions).				<input checked="" type="checkbox"/>	
XXX					
CAS Registry Number (if a number already exists for the substance)		XXX			
c. Please identify which method you used to develop or obtain the specified chemical identity information reported in this notice: (check one).					
Method 1 (CAS Inventory Expert Service - a copy of the Identification report obtained from the CAS Inventory Expert Services must be submitted as an attachment to this notice)		IES Order Number		Method 2 (Other Source)	
<input type="checkbox"/>				<input checked="" type="checkbox"/>	
Enter Attachment filename for Part I, Section B, 1. c.				<input type="checkbox"/>	
d. Molecular formula	XXX			<input checked="" type="checkbox"/>	
e. For a class 1 substance, provide a complete and correct chemical structure diagram. For a class 2 substance, provide a correct representative or partial chemical structure diagram, as complete as can be known, if one can be reasonably ascertained.				<input type="checkbox"/>	
See Attachment 001 (Triethanolamine Methyl Chloride Quaternary Compound.docx)					
Enter Attachment filename for Part I, Section B, 1. e.				Triethanolamine Methyl Chloride Quaternary Compound.docx	



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For a class 2 substance - (1) List the immediate precursor substances with their respective CAS Registry Numbers. (2) Describe the nature of the reaction or process. (3) Indicate the range of composition and the typical composition (where appropriate).		Confidential
e. (1) List the immediate precursor substance names with their respective CAS Registry Numbers. XXX		<input checked="" type="checkbox"/>
Enter Attachment filename for Part I, Section B, 1. e. (1)	<input type="checkbox"/>	
e. (2) Describe the nature of the reaction or process. XXX		<input checked="" type="checkbox"/>
Enter Attachment filename for Part I, Section B, 1. e. (2)	<input type="checkbox"/>	
e. (3) Indicate the range of composition and the typical composition (where appropriate). XXX		<input checked="" type="checkbox"/>
Enter Attachment filename for Part I, Section B, 1. e. (3)	<input type="checkbox"/>	



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SANITIZED SUBMISSION

Part I -- GENERAL INFORMATION -- Continued

Section B -- CHEMICAL IDENTITY INFORMATION -- Continued

2. Polymers (For a definition of polymer, see the Instructions Manual.)

Confidential

a. Indicate the number-average weight of the lowest molecular weight composition of the polymer you intend to manufacture. Indicate maximum weight percent of low molecular weight species (not including residual monomers, reactants, or solvents) below 500 and below 1,000 absolute molecular weight of that composition.

Describe the methods of measurement or the basis for your estimates:

GPC

Other (Specify Below)

Specify Other:

(i) lowest number average molecular weight:

(ii) maximum weight % below 500 molecular weight:

(iii) maximum weight % below 1000 molecular weight:

Enter Attachment filename for Part I, Section B, 2. a.

b. You must make separate confidentiality claims for monomer or other reactant identity, composition information, and residual information. Mark (X) the "Confidential" box next to any item you claim as confidential

- (1) - Provide the specific chemical name and CAS Registry Number (if a number exists) of each monomer or other reactant used in the manufacture of the polymer.
- (2) - Mark (X) this column if entry in column (1) is confidential.
- (3) - Indicate the typical weight percent of each monomer or other reactant in the polymer.
- (4) - Choose "yes" from drop down menu if you want a monomer or other reactant used at two weight percent or less to be listed as part of the polymer description on the TSCA Chemical Substance Inventory.
- (5) - Mark (X) this column if entries in columns (3) and (4) are confidential.
- (6) - Indicate the maximum weight percent of each monomer or other reactant that may be present as a residual in the polymer as manufactured for commercial purposes.
- (7) - Mark (X) this column if entry in column (6) is confidential.

Monomer or other reactant specific chemical name (1)	CBI (2)	Typical composition (3)	Include in identity (4)	CBI (5)	Max residual (6)	CBI (7)
CAS Registry Number (1)						
CAS Registry Number (1)						
CAS Registry Number (1)						
CAS Registry Number (1)						

Mark (X) this box if the data continues on the next page.



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c. Please identify which method you used to develop or obtain the specified chemical identity information reported in this notice (check one).			CBI
Method 1 (CAS Inventory Expert Service - a copy of the identification report obtained from CAS Inventory Expert Service must be submitted as an attachment to this notice) <input type="checkbox"/>	IES Order Number		Method 2 (other source) <input type="checkbox"/>
Enter Attachment filename for Part I, Section B, 2. c.			<input type="checkbox"/>
d. The currently correct Chemical Abstracts (CA) name for the polymer that is consistent with TSCA Inventory listings for similar polymers.			<input type="checkbox"/>
CAS Registry Number (if a number already exists for the substance)			
e. Provide a correct representative or partial chemical structure diagram, as complete as can be known, if one can be reasonably ascertained.			<input type="checkbox"/>
Enter Attachment filename for Part I, Section B, 2. e.			<input type="checkbox"/>



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SANITIZED SUBMISSION

Part I -- GENERAL INFORMATION -- Continued

Section B -- CHEMICAL IDENTITY INFORMATION -- Continued

3. Impurities

- (a) - Identify each impurity that may be reasonably anticipated to be present in the chemical substance as manufactured for commercial purpose. Provide the CAS Registry Number if available. If there are unidentified impurities, enter "unidentified."
 (b) - Estimate the maximum weight % of each impurity. If there are unidentified impurities, estimate their total weight %.

Impurity (a)	CAS Registry Number (a)	Maximum Percent % (b)	Confidential
XXX	XXX	XXX	X

Mark (X) this box if the data continues on the next page. Enter Attachment filename for Part I, Section B, 3.

4. Synonyms - Enter any chemical synonyms for the new chemical identified in subsection 1 or 2.

XXX

Enter Attachment filename for Part I, Section B, 4.

5. Trade identification - List trade names for the new chemical substance identified in subsection 1 or 2.

Klay Safe EF

Enter Attachment filename for Part I, Section B, 5.

6. Generic chemical name - If you claim chemical identify as confidential, you must provide a generic name for your substance that reveals the specific chemical identity of the new chemical substance to the maximum extent possible. Refer to the TSCA Chemical Substance Inventory, 1985 Edition, Appendix B for guidance on developing generic names.

Quaternary ammonium compound

Enter Attachment filename for Part I, Section B, 6.

CAS ID Method.docx

7. Byproducts - Describe any byproducts resulting from the manufacture, processing, use, or disposal of the new chemical substance. Provide the CAS Registry Number if available.

Byproduct (1)	CAS Registry Number (2)	Confidential
XXX	XXX	X

Mark (X) this box if the data continues on the next page.



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SANITIZED SUBMISSION

Part I -- GENERAL INFORMATION -- Continued

Section C -- PRODUCTION, IMPORT, AND USE INFORMATION:

The information on this page refers to consolidated chemical number(s): 1 2 3 4 5 6

Mark (X) the "Confidential" box next to any item you claim as confidential.

1. Production volume -- Estimate the **maximum** production volume during the first 12 months of production. Also estimate the maximum production volume for any consecutive 12-month period during the first three years of production. Estimates should be on 100% new chemical substance basis. For a Low Volume Exemption application, if you choose to have your notice reviewed at a lower production volume than 10,000 kg/yr, specify the volume and mark (x) in the binding box. If granted, you are bound to this volume.

Maximum first 12-month production (kg/yr) (100% new chemical substance basis)	Maximum 12-month production (kg/yr) (100% new chemical substance basis)	Confidential	Binding Option Mark (X)
XXX	XXX	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Enter Attachment filename for Part I, Section C, 1.			CBI <input type="checkbox"/>

2. Use Information -- You must make separate confidentiality claims for the description of the category of use, the percent of production volume devoted to each category, the formulation of the new substance, and other use information. Mark (X) the "Confidential" Box next to any item you claim as confidential.

- a. (1) --Describe each intended category of use of the new chemical substance by function and application.
 (2) --Mark (X) this column if entry column (1) is confidential business information (CBI).
 (3) --Indicate your willingness to have the information provided in column (1) binding.
 (4) --Estimate the percent of total production for the first three years devoted to each category of use.
 (5) --Mark (X) this column if entry in column (4) is confidential business information (CBI).
 (6) --Estimate the percent of the new substance as formulated in mixtures, suspensions, emulsions, solutions, or gels as manufactured for commercial purposes at sites under your control associated with each category of use.
 (7) --Mark (X) this column if entry in column (6) is confidential business information (CBI).
 (8) --Indicate % of product volume expected for the listed "use" sectors. Mark more than one box if appropriate. Mark (X) to indicate your willingness to have the use type provided in (8) binding.
 (9) --Mark (X) this column if entry(ies) in column (8) is (are) confidential business information (CBI).

Category of use (1) (by function and application i.e. a dispersive dye for finishing polyester fibers)	CBI (2)	Binding Option Mark (X) (3)	Prod uction % (4)	CBI (5)	% in Form- ulation (6)	CBI (7)	% of substance expected per use (8)					CBI (9)
							Site- limited	Con- sumer*	Industrial	Com- mercial	Binding Option	
XXX	X		XXX	X	XXX	X	0	0	100	0		

* If you have identified a "consumer" use, please provide on a continuation sheet a detailed description of the use(s) of this chemical substance in consumer products. In addition include estimates of the concentration of the new chemical substance as expected in consumer products and describe the chemical reactions by which this substance loses its identity in the consumer product.

Mark (X) this box if the data continues on the next page.

- b. Generic use description If you claim any category of use description in subsection 2a as confidential, enter a generic description of that category. Read the Instruction Manual for examples of generic use descriptions.

Clay and shale formation stabilizer in well stimulation and drilling mud formulations.

Enter Attachment filename for Part I, Section C, 2. b.	CBI <input type="checkbox"/>
3. Hazard Information -- Include in the notice a copy of reasonable facsimile of any hazard warning statement, label, material safety data sheet, or other information which will be provided to any person who is reasonably likely to be exposed to this substance regarding protective equipment or practices for the safe handling, transport, use, or disposal of the new substance. List in part III hazard information you include.	Binding Option Mark (X)
Mark (X) this box if you attach hazard information.	<input checked="" type="checkbox"/>



PMN2011P8

Part II-- HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE

Section A -- INDUSTRIAL SITES CONTROLLED BY THE SUBMITTER

Mark (X) the "Confidential" box next to any item you claim as confidential

The information on pages 8 and 8a refer to consolidated chemical number(s): [] 1 [] 2 [] 3 [] 4 [] 5 [] 6

Complete section A for each type of manufacture, processing, or use operation involving the new chemical substance at industrial sites you control. Importers do not have to complete this section for operations outside the U.S.; however, you may still have reporting requirements if there are further industrial processing or use operations after import. You must describe these operations. See instructions manual

1. Operation description
a. Identity -- Enter the identity of the site at which the operation will occur. Confidential

Table with 4 columns: Name (CorsiTech), Site address (2733 E. Highway 31), City (Corsicana), County, State (TX), ZIP code (75110)

If the same operation will occur at more than one site, enter the number of sites. Identify the additional sites on a continuation sheet, and if any of the sites have significantly different production rates or operations, include all the information requested in this section for those sites as attachments. 1

Mark (X) this box if the data continues on the next page. []

b. Type -- Manufacturing [] Processing [] Use [] Mark (X)

c. Amount and Duration -- Complete 1 or 2 as appropriate Confidential

Table with 4 columns: Batch type, Maximum kg, Hours, Batches/Days per year

d. Process description Mark (X) to indicate your willingness to have your process description binding. []

- (1) Diagram the major unit operation steps and chemical conversions. Include interim storage and transport containers (specify- e.g. 5 gallon pails, 55 gallon drum, rail car, tank truck, etc.).
(2) Provide the identity, the approximate weight (by kg/day or kg/batch on a 100% new chemical substance basis), and entry point of all starting materials and feedstocks (including reactants, solvents, catalysts, etc.), and of all products, recycle streams, and wastes. Include cleaning chemicals (note frequency if not used daily or per batch.).
(3) Identify by number the points of release, including small or intermittent releases, to the environment of the new chemical substance. If releasing to two media at the same step, assign a second release number for the second medium.

XXX [X]



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Diagram of the major unit operation steps.

Confidential



See Attachment 003 (Manufacturing Description Sanitized.docx)

Enter Attachment filename for Part II, Section A, 1. d.

Manufacturing Description Sanitized.docx





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SANITIZED SUBMISSION

Part II-- HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE -- Continued

Section A -- INDUSTRIAL SITES CONTROLLED BY THE SUBMITTER -- Continued

The information on pages 9 and 9a refer to consolidated chemical number(s): 1 2 3 4 5 6

- 2. Occupational Exposure** -- You must make separate confidentiality claims for the description of worker activity, physical form of the new chemical substance, number of workers exposed, and duration of activity. Mark (X) the "Confidential" box next to any item you claim as confidential.
- (1) -- Describe the activities (i.e. bag dumping, tote filling, unloading drums, sampling, cleaning, etc.) in which workers may be exposed to the substance.
 - (2) -- Mark (X) this column if entry in column (1) is confidential business information (CBI).
 - (3) -- Describe any protective equipment and engineering controls used to protect workers.
 - (4) and (6) -- Indicate your willingness to have the information provided in column (3) or (5) binding.
 - (5) -- Indicate the physical form(s) of the new chemical substance (e.g., solid: crystal, granule, powder, or dust) and % new chemical substance (if part of a mixture) at the time of exposure.
 - (7) -- Mark (X) this column if entries in columns (3) and (5) are confidential business information (CBI).
 - (8) -- Estimate the maximum number of workers involved in each activity for all sites combined.
 - (9) -- Mark (X) this column if entry in column (8) is confidential business information (CBI).
 - (10) and (11) -- Estimate the maximum duration of the activity for any worker in hours per day and days per year.
 - (12) -- Mark (X) this column if entries in columns (10) and (11) are confidential business information (CBI).

Worker activity (i.e., bag dumping, filling drums) (1)	CBI (2)	Protective Equipment/ Engineering Controls (3)	Binding Option Mark (X) (4)	Physical form(s) & % new substance (5)	Binding Option Mark (X) (6)	CBI (7)	# of Workers Exposed (8)	CBI (9)	Maximum Duration		CBI (12)
									Hrs/Day (10)	Days/Yr (11)	
Reactor sampling		See continuation page. id: <P9SA2(3)C1R1>		liquid 70% PMN solution			1		2	67	
Packaging product		See continuation page. id: <P9SA2(3)C1R2>		liquid 50% of PMN substance solution			2		8	67	

Mark (X) this box if the data continues on the next page.

Enter Attachment filename for Part II, Section A on the bottom of page 9a.



PMN2011P9-1

Continuation Sheet

ID	P9SA2(3)C1R1	Field	Part II, Section A, 2.(3) Prot. Equipment, etc., Row 1
eye protective goggles, chemical resistant gloves, protective clothing, chemical resistant apron, chemical resistant boots			



PMN2011P9-2

SANITIZED SUBMISSION

Continuation Sheet

ID	P9SA2(3)C1R2	Field	Part II, Section A, 2.(3) Prot. Equipment, etc., Row 2
<p>eye protective goggles, chemical resistant gloves, protective clothing, chemical resistant apron, chemical resistant boots</p>			



Part II-- HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE – Continued

Section B -- INDUSTRIAL SITES CONTROLLED BY OTHERS

The information on pages 10 and 10a refer to consolidated chemical number(s): 1 2 3 4 5 6

Complete section B for typical processing or use operations involving the new chemical substance at sites you do not control. Importers do not have to complete this section for operations outside the U.S.; however, you must report any processing or use activities after import. See the Instructions Manual. Complete a separate section B for each type of processing, or use operation involving the new chemical substance. If the same operation is performed at more than one site describe the typical operation common to these sites. Identify additional sites on a continuation sheet.

1(a). Operation Description -- To claim information in this section as confidential, bracket (e.g. {}) the specific information that you claim as confidential.

- (1) -- Diagram the major unit operation steps and chemical conversions, including interim storage and transport containers (specify - e.g. 5 gallon pails, 55 gallon drums, rail cars, tank trucks, etc). On the diagram, identify by letter and briefly describe each worker activity.
- (2) -- Either in the diagram or in the text field 1(b) below, provide the identity, the approximate weight (by kg/day or kg/batch, on an 100% new chemical substance basis), and entry point of all feedstocks (including reactants, solvents and catalysts, etc) and all products, recycle streams, and wastes. Include cleaning chemicals (note frequency if not used daily or per batch).
- (3) -- Either in the diagram or in the text field 1(b) below, identify by number the points of release, including small or intermittent releases, to the environment of the new chemical substance.
- (4) -- Please enter the # of sites (remember to identify the locations of these sites on a continuation sheet):

	Number of Sites	50	Confidential	<input type="checkbox"/>
--	------------------------	----	---------------------	--------------------------

See Attachment 010 (Well head use diagram.doc)

1(b). (Optional) This space is for a text description to clarify the diagram above. Confidential

The primary use is in conjunction with well stimulation (after the drilling is complete). The attached well-site drawing shows the chemical in a portable tote container (B) being mixed with frac fluid in an on-site blender (C) and being pumped in to a well head. In this scenario, the PMN material is blended at concentrations of 0.5 - 1.5% and chemically interacts with clay and shale in the fracture zone and remains in the rock formation underground. A typical Frac job is completed in one to two days which requires hooking up totes of the PMN substance for less than one hour per day. In a realistic scenario, it would be unlikely that the same workers would be present on more than 5 wells per year.

The second use is when the PMN substance is used in conjunction with drilling mud. In this scenario when clay and shale zones are encountered, the PMN substance is mixed with drilling mud at concentrations of 2.5 - 3.5% and used to stabilize the walls of the well bore in the drilling operation. Most of the PMN substance chemically interacts with clay and shale formations along the sides of the well bore and becomes permanently encased during the cementing operation. The remainder of the chemical is removed from the well after drilling is completed and the drilling mud is removed from the site for treatment and disposal. A typical well might encounter clay or shale formations on three to four days which requires hooking up totes of the PMN substance for less than one hour per day. In a realistic scenario, it would be unlikely that the same workers would be present on more than 5 wells per year.

Enter Attachment filename for Part II, Section B on the bottom of page 10a. Well head use diagram.doc



PMN2011P10-1

SANITIZED SUBMISSION

Continuation Sheet

ID	P10SB1(a)(4)1	Field	Part II, Section B, 1(a)(4). Operation Site Locations
<p>The number of drilling sites at which the PMN substance may be used is variable and dependent on the geological formations found at the production site. Generally clay deposits will benefit from the use of the clay stabilizer action of the PMN substance . The number of sites is estimated at the present time is approximately 50 locations within the US.</p>			



2. Worker Exposure/Environmental Release

- (1) -- From the diagram above, provide the letter for each worker activity. Complete 2-8 for each worker activity described.
 - (2) -- Estimate the number of workers exposed for all sites combined.
 - (4) -- Estimate the typical duration of exposure per worker in (a) hours per day and (b) days per year.
 - (6) -- Describe physical form of exposure and % new chemical substance (if in mixture), and any protective equipment and engineering controls, if any, used to protect workers.
 - (7) -- Estimate the percent of the new substance as formulated when packaged or used as a final product.
 - (9) -- From the process diagram above, enter the number of each release point. Complete 9-13 for each release point identified.
 - (10) -- Estimate the amount of the new substance released (a) directly to the environment or (b) into control technology to the environment (in kg/day or kg/batch).
 - (12) -- Describe media of release i.e. stack air, fugitive air (optional-see Instructions Manual), surface water, on-site or off-site land or incineration, POTW, or other (specify) and control technology, if any, that will be used to limit the release of the new substance to the environment.
 - (14) -- Identify byproducts which may result from the operation.
- (3), (5), (8), (11), (13) and (15) -- Mark (X) this column if any of the proceeding entries are confidential business information (CBI).

Letter of Activity	# of Workers Exposed	CBI	Duration of Exposure		CBI	Protective Equip./Engineering Controls/Physical Form	% new substance	% in Formulation	CBI
			(4a)	(4b)					
Addition to frac	2		1	10		See continuation page. id: <P10ASB2(6)C1R1>	100	50	
Addition to	2		1	20		See continuation page. id: <P10ASB2(6)C1R2>	100	50	

Release Number	Amount of New Substance Released		CBI	Media of Release & Control Technology	CBI
	(10a)	(10b)			
1	0	0		The 1% concentration of the PMN substance used in the frac fluid, will remain down hole in the clay and shale formations.	
2	0	25%		See continuation page. id: <P10ASB2(12)C1R2>	

Mark (X) this box if the data continues on the next page.

(14) Byproducts:	None	(15) CBI	<input type="checkbox"/>
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Enter Attachment filename for Part II, Section B.



PMN2011P10A-1

SANITIZED SUBMISSION

Continuation Sheet

ID	P10ASB2(6)C1R1	Field	Part II, Section B, 2.(6) Protective Equip./Eng. Controls, etc., Row 1
<p>Safety glasses or chemical safety goggles, chemical resistant gloves, protective clothing, chemical resistant apron, chemical resistant boots</p>			



PMN2011P10A-2

SANITIZED SUBMISSION

Continuation Sheet

ID	P10ASB2(6)C1R2	Field	Part II, Section B, 2.(6) Protective Equip./Eng. Controls, etc., Row 2
<p>Safety glasses or chemical safety goggles, chemical resistant gloves, protective clothing, chemical resistant apron, chemical resistant boots</p>			



PMN2011P10A-3

SANITIZED SUBMISSION

Continuation Sheet

ID	P10ASB2(12)C1R2	Field	Part II, Section B, 2.(12) Media of Release & Ctrl Technology, Row 2
<p>Of the 3% concentration of the PMN substance added to the drilling mud, approximately 75% of the substance will remain down hole combined with the clay and shale formations. The rest of PMN substance will remain in the drilling mud and be shipped offsite under the appropriate State and Federal disposal requirements and disposed of at approved and licensed landfill facilities.</p>			



OPTIONAL POLLUTION PREVENTION INFORMATION

To claim information in the following section as confidential, bracket (e.g. {}) the specific information that you claim as confidential.

In this section you may provide information not reported elsewhere in this form regarding your efforts to reduce or minimize potential risks associated with activities surrounding manufacturing, processing, use and disposal of the PMN substance. Please include new information pertinent to pollution prevention, including source reduction, recycling activities and safer processes or products available due to the new chemical substance. Source reduction includes the reduction in the amount or toxicity of chemical wastes by technological modification, process and procedure modification, product reformulation, and/or raw materials substitution. Recycling refers to the reclamation of useful chemical components from wastes that would otherwise be treated or released as air emissions or water discharges, or land disposal. Quantitative or qualitative descriptions of pollution prevention, source reduction and recycling should emphasize potential risk reduction in addition to compliance with existing regulatory requirements. The EPA is interested in the information to assess overall net reductions in toxicity or environmental releases and exposures, not the shifting of risks to other media (e.g., air to water) or nonenvironmental areas (e.g., occupational or consumer exposure). To the extent known, information about the technology being replaced will assist EPA in its relative risk determination. In addition, information on the relative cost or performance characteristics of the PMN substance to potential alternatives may be provided.

Describe the expected net benefits, such as

- (1) an overall reduction in risk to human health or the environment;
- (2) a reduction in the generation of waste materials through recycling, source reduction or other means;
- (3) a reduction in the use of hazardous starting materials, reagents, or feedstocks;
- (4) a reduction in potential toxicity, human exposure and/or environmental release; or
- (5) the extent to which the new chemical substance may be a substitute for an existing substance that poses a greater overall risk to human health or the environment.

Information provided in this section will be taken into consideration during the review of this substance. See PMN Instructions Manual and Pollution Prevention Guidance manual for guidance and examples.

As can be seen in the attached risk assessment, the PMN substance is not expected to present a significant toxicological concern to humans; however it may cause some degree of skin irritation if kept in direct prolonged contact with skin and may cause severe irritation and possible injury if splashed in the eyes. The product is superior to other drilling additives used for similar purposes. Environmentally, the product is readily biodegradable as studied under the conditions of OECD 301B, and is considered to be "non-toxic" under EPA ecotoxicity guidelines for invertebrates (*Daphnia magna*) and fish (*Fathead minnow*).

The new quaternary ammonium compound will be used and marketed as a replacement for tetramethylammonium chloride (TMAC) in the oil field chemical industry. CorsiTech currently produces 15 million lbs/year of TMAC and markets it for use in the oil field industry predominantly in the areas of drilling, fracturing, and stimulation. This PMN substance has been tested and found to be less toxic than TMAC according to the 96 h LC50 data for Fathead minnows. Based on EPA's Ecotox database, the 96-h LC50 of TMAC is 462 mg/L. The 96-h LC50 of the PMN material on Fathead minnow is > 1000 mg/L with a NOEC of > 1000 mg/L. The PMN material tested was 50% active ingredient in solution with water. The attached acute fathead minnow toxicity test reported no mortality at the 1000 mg/L treatment concentrations. Since the NOEC of the PMN product is greater than the LC50 of TMAC, the PMN product is considered to be significantly less toxic than the currently used material. Further, it has been established that the performance of this PMN material has consistently tested to give equivalent or better performance in comparison to TMAC in clay and shale inhibition/stabilization when used in equivalent concentrations in fracturing and stimulation applications. In conclusion, with lower toxicity and equivalent or better performance, the PMN substance will pose a significantly lower environmental impact compared to the chemical it will be replacing.

Enter Attachment filename for Pollution Prevention Page 11.





Part III -- LIST OF ATTACHMENTS

Attach continuation sheets for sections of the form, test data and other data (including physical/chemical properties and structure/activity information), and optional information after this page. Clearly identify the attachment and the section of the form to which it relates, if appropriate. Number consecutively the pages of any paper attachments. In the Number of Pages column below, enter the inclusive page numbers of each attachment for paper submissions or enter the total number of pages for each attachment for electronic submissions. Electronic attachments can be identified by filename.

Mark (X) the "Confidential" box next to any attachment name or filename you claim as confidential. Read the Instructions Manual for guidance on how to claim any information in an attachment as confidential. You must include with the sanitized copy of the notice form a sanitized version of any attachment in which you claim information as confidential.

Table with 6 columns: #, Attachment Name, Attachment Filename, Number of Pages, Associated PMN Section Number, CBI. Rows include attachments like Triethanolamine Methyl Chloride Quaternary Compound, Log Pow sanitized, Manufacturing sanitized, etc.

Mark (X) this box if the data continues on the next page.



PMN Page 13

PHYSICAL AND CHEMICAL PROPERTIES WORKSHEET

The information on this page refers to chemical number(s): 1 2 3 4 5 6

To assist EPA's review of physical and chemical properties data, please complete the following worksheet for data you provide and include it in the notice. Identify the property measured, the value of the property, the units in which the property is measured (as necessary), and whether or not the property is claimed as confidential. Give the attachment number (found on page 12) in column (b). The physical state of the neat substance should be provided. These measured properties should be for the neat (100% pure) chemical substance. Properties that are measured for mixtures or formulations should be so noted (% PMN substance in ___). You are not required to submit this worksheet; however, EPA strongly recommends that you do so, as it will simplify the review and ensure that confidential information is properly protected. You should submit this worksheet as a supplement to your submission of test data. This worksheet is not a substitute for submission of test data.

Property (a)	Unit	Mark X if Provided	Attachment Number (b)	Value (c)			Measured or Estimate (M or E)	CBI Mark (X) (d)
				(solid)	(liquid)	(gas)		
Physical state of neat substance		<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Measured	
Vapor Pressure @ Temperature	25	°C	<input type="checkbox"/>	< 24			Torr	Estimate
Density/relative density			<input type="checkbox"/>	1.122			g/cm3	Measured
Solubility								
@ Temperature		°C	<input type="checkbox"/>			g/L		
Solvent								
Solubility in Water @ Temperature	25	°C	<input type="checkbox"/>	100			g/L	Measured
Melting Temperature			<input type="checkbox"/>			°C		
Boiling / Sublimation temperature @		Torr	<input type="checkbox"/>	> 104.4			°C	Estimate
Spectra			<input type="checkbox"/>					
Dissociation constant			<input type="checkbox"/>					
Octanol / water partition coefficient			<input type="checkbox"/>	0				Measured
Henry's Law constant			<input type="checkbox"/>					
Volatilization from water			<input type="checkbox"/>					
Volatilization from soil			<input type="checkbox"/>					
pH@ concentration	50		<input type="checkbox"/>	8.5 - 8.8				Measured
Flammability			<input type="checkbox"/>	> 212 F				Measured
Explosibility			<input type="checkbox"/>					
Adsorption / Coefficient			<input type="checkbox"/>					
Particle Size Distribution			<input type="checkbox"/>					
Other – Specify	XXX		<input type="checkbox"/>	XXX	XXX			X

ATTACHMENT HEADER SHEET

Attachment Number 001

Attachment Name

Triethanolamine Methyl Chloride Quaternary Compound

Associated PMN Section Number

Pt.I, Sec.B, 1e.

Does not contain CBI

Report Number

PMN2111129674298632

ATTACHMENT HEADER SHEET

Attachment Number 002

Attachment Name

Log Pow sanitized

Associated PMN Section Number

N/A

Does not contain CBI

Report Number

PMN2111129674298632

ATTACHMENT HEADER SHEET

Attachment Number 003

Attachment Name

Manufacturing sanitized

Associated PMN Section Number

Pt.2, Sec.A, 1d.

Does not contain CBI

Report Number

PMN2111129674298632

ATTACHMENT HEADER SHEET

Attachment Number 004

Attachment Name

Klay Safe EF NMR and FTIR Sanitized

Associated PMN Section Number

N/A

Does not contain CBI

Report Number

PMN2111129674298632

ATTACHMENT HEADER SHEET

Attachment Number 005

Attachment Name

Daphnia magna LC50

Associated PMN Section Number

N/A

Does not contain CBI

Report Number

PMN2111129674298632

ATTACHMENT HEADER SHEET

Attachment Number 006

Attachment Name

Fathead minnow LC50

Associated PMN Section Number

N/A

Does not contain CBI

Report Number

PMN2111129674298632

ATTACHMENT HEADER SHEET

Attachment Number 007

Attachment Name

OECD 301B

Associated PMN Section Number

N/A

Does not contain CBI

Report Number

PMN2111129674298632

ATTACHMENT HEADER SHEET

Attachment Number 008

Attachment Name

MSDS

Associated PMN Section Number

N/A

Does not contain CBI

Report Number

PMN2111129674298632

ATTACHMENT HEADER SHEET

Attachment Number 009

Attachment Name

CAS ID

Associated PMN Section Number

Pt.I, Sec.B, 6.

Does not contain CBI

Report Number

PMN2111129674298632

ATTACHMENT HEADER SHEET

Attachment Number 010

Attachment Name

Well head use

Associated PMN Section Number

Pt.2, Sec.B, 1a.

Does not contain CBI

Report Number

PMN2111129674298632

ATTACHMENT HEADER SHEET

Attachment Number 011

Attachment Name

Risk Assessment

Associated PMN Section Number

N/A

Does not contain CBI

Report Number

PMN2111129674298632