



STRATA CONTROL SERVICES, INC.
P. O. Box 272 * Crowley, La 70527

1-888-656-0001 Toll Free
1-337-785-0000 Direct
1-337-785-0004 Fax:
E-Mail: stratinc@bellsouth.net
WWW: STRATACONTROL.COM

STRATA CONTROL SERVICES, Inc.

World-Wide Corporate Offices
Post Office Box 272
1811 West Mill Street
Crowley, Louisiana USA 70527-0272

U. S.Domestic Stockpoints

- Crowley, Louisiana
 - Alice, Texas
 - Odessa, Texas
- Elk City, Oklahoma
- Antlers, Oklahoma
- Rock Springs, Wyoming
 - Rifle, Colorado

Manufacturing Plant Locations

- Crowley, Louisiana
- Estherwood, Louisiana

Toll Free US: 1-888-656-0001
Direct: 1-337-785-0000
Direct Fax: 1-337-785-0004
Email Address: stratinc@bellsouth.net
Web Site: www.stratacontrol.com

“THE MUD STOPS HERE!®“



STRATA CONTROL SERVICES, INC.
P. O. Box 272 * Crowley, La 70527

1-888-656-0001 Toll Free
1-337-785-0000 Direct
1-337-785-0004 Fax:
E-Mail: stratinc@bellsouth.net
WWW: STRATACONTROL.COM

Products and Services

Strata Control Services, Inc. is a privately owned and operated company based in Crowley, Louisiana., USA, which specializes in products and services designed to prevent and solve mud and fluid losses in oil and gas drilling operations and in other applications around the world.

Strata Control Services, Inc. (SCSI) endeavors to provide its clients with a comprehensive program of “Mud Conservation” and Fluid Loss prevention, remediation of minor losses, and in the case of severe losses, an industry standard cure. We do this with a suite of products specifically designed to address various potential problems, either known or anticipated. We work to minimize the total cost to the operator by designing products which reduce the need for alternatives, thus improving logistics cost, space requirements, and/or special handling/ mixing equipment requirements. In addition, all products are competitively priced and deliver success rates well beyond the industry norm.

Our products, application theory and results achieved in applications around the world clearly differentiate Strata Control Services, Inc. as the leader in mud/ fluid loss solutions, and it’s why we say “The Mud Stops Here”.

The following pages describe our major products, applications, and benefits. We appreciate your interest and look forward to assisting you and your company in achieving your goals of efficient, cost effective solutions to problems or potential problems encountered in your operations.

Sincerely,

Benny Richard
General Manager
STRATA CONTROL SERVICES, INC.

“THE MUD STOPS HERE!®”



STRATA CONTROL SERVICES, INC.
P. O. Box 272 * Crowley, La 70527

1-888-656-0001 Toll Free
1-337-785-0000 Direct
1-337-785-0004 Fax:
E-Mail: stratinc@bellsouth.net
WWW: STRATACONTROL.COM

FRAC-ATTACK®

(Complete Package Loss Circulation Pill)

FRAC-ATTACK® is the industry standard as a cure for severe loss situations. It is a fast acting and extremely cost effective solution to lost circulation in many types of downhole conditions including fractures, vugular formations, weak channels and underground cross-flows or blowout situations. As a pre-mixed and packaged pill, **FRAC-ATTACK®** eliminates the guesswork associated with a response to severe losses. **FRAC-ATTACK®** mixes in drill water and is compatible in all types of fluid systems.

BENEFITS:

- Improves formation integrity and remains strong through trips and withstands surge pressures
- Extremely Cost effective
- Used in 1,000+ wells, worldwide
- Pre-measured and packaged - “Rig Ready” mixing procedures – mix on site
- No Pre-Spots or Spacers Required
- No activators, accelerators or retarders required
- Mixes easily in drill water regardless of mud system being utilized
- No special mixing tanks, equipment or pumps required. Mix in slugging tank
- Not affected by ph or temperature

APPLICATION:

For normal density formulations (12.6 to 19.6 ppg), Add 1 pallet of **FRAC-ATTACK®** for each 20 bbls of desired finished pill volume. **FOAM-BLAST®** is added to this blend at the rate of 1-5 gallon pail per 2 pallets of **FRAC-ATTACK®**. It is desirable to spot the **FRAC-ATTACK®** pill at or near known loss zones. In the case of unknown zones, adequate volumes to cover likely or possible zones should be used while having adequate squeezable volume remaining. This will ensure coverage following a step-by-step pressure up procedure where it is possible to de-water the pill and effect the cure. Contact a Strata Control representative for tailor made formulation, spotting recommendations and technical assistance.

PACKAGING:

- Pre-packaged in 1600 Lbs - Full Pallet Units
- 40 pound paper bags - 40 bags per pallet.
- Palletized and Shrink-Wrapped

“THE MUD STOPS HERE!®”

STRATA CONTROL SERVICES, INC.®	MATERIAL SAFETY DATA SHEET
P.O. Box 272 Crowley, LA 70527-0272 Unites States of America	FRAC-ATTACK® "THE MUD STOPS HERE®"

SECTION 1. MATERIAL IDENTIFICATION

Chemical Name: FRAC-ATTACK®
Synonyms: Proprietary Lost Circulation Material Pill Package
Chemical Family: Mixture
CAS Red No.: Mixture
Emergency Phone No.: (337) 785-0000
Effective: 06/2007
Supersedes: 06/2006

SECTION 2. COMPONENTS - INGREDIENTS

Ingredients	CAS Number	% By Wt.	OSHA PEL	ACGIH TLV
Calcium Hydroxide	1305-62-0	8	5 mg/m3	5 mg/m3
Crystalline silica (Quartz)	14808-60-7	< 1	0.1 mg/m3*	0.1 mg/m3**
Proprietary**	Various	> 91	NE	NE

* Respirable Dust

** The specific chemical identity of this material is being withheld as a trade secret. It will be provided in accordance with the provisions of 29 CFR Part 1910.1200 (i). In the event of a medical emergency, it will be provided to a treating physician or nurse through utilization of the above Emergency Telephone Number.

SECTION 3. PHYSICAL DATA

Appearance : Brownish Grey Coarse Powder
Boiling Point (Deg. F.): Not Applicable
Vapor Pressure (mm of Mercury): Not Applicable
Specific Gravity (Water = 1): 2.10
Vapor Density (Air = 1): Not Applicable
Percent Volatile (By weight): Not Applicable
Solubility In Water: Negligible
Evaporation Rate (Butyl Acetate=1): Not Applicable

SECTION 4. REACTIVE DATA

Stable: X **Unstable:**
Hazardous Combustion or Decomposition Products: Not Established
Incompatibility (materials to avoid): Fluorine, Oxygen Difluoride, Chlorine, Trifluoride, Hydrofluoric Acid.
Hazardous Polymerization: Will not occur.

SECTION 5. EMERGENCY AND FIRST AID PROCEDURES

Ingestion: Give two (2) glasses of water and induce vomiting, only if subject is conscious.
Inhalation: . Immediate remove from exposure. If breathing is difficult, give oxygen. Seek medical attention, if necessary.
Skin: Wash with soap and water.
Eyes: Irrigate eyes with water for at least 15 minutes.

STRATA CONTROL SERVICES, INC.®	MATERIAL SAFETY DATA SHEET
P.O. Box 272 Crowley, LA 70527-0272	FRAC-ATTACK® “THE MUD STOPS HERE®”

Page 2

SECTION 6. FIRE AND EXPLOSION DATA

Flash Point (method used): Not Applicable
Flammable Limits in Air % By volume: Lower: Not Applicable Upper: Not Applicable
Special Fire Fighting Procedures: Evacuate area of all unnecessary personnel. Use NIOSH approved self-contained breathing apparatus (SCBA) and other protective equipment and/or garments as conditions warrant. Use water fog or spray to cool exposed containers and equipment.
Extinguishing Media: Water, foam, dry chemical, carbon dioxide (CO2). Use media appropriate for surrounding fire.
Unusual Fire & Explosion Hazards: Not Applicable
Hazardous Combustion Products: Not Applicable

SECTION 7. HEALTH HAZARDS INFORMATION
--

OSHA Permissible Exposure Limit: None established
AGGIH Threshold Limit Value: None established
Effects of Overexposure: .May cause eye irritation with contact, and may irritate mucous membranes of the nose, throat and upper respiratory tract. Ingestion may cause irritation to the gastrointestinal tract.
Listed as Carcinogen or Potential Carcinogen: No

SECTION 8. SPILL, LEAK AND DISPOSAL PRODUCERS
--

In Case of Spill or Leak: Waste Disposal Method: Flushing and rinsing
EPA Registry Number: None

SECTION 9. PROTECTION INFORMATION
--

Respiratory Protection: Use NIOSH approved respirator for protection against dust.
Ventilation: Use adequate mechanical ventilation.
Protective Gloves: Rubber or neoprene
Eye Protection: Safety Goggles or Face Shield
Other Protective Equipment: Synthetic apron.

SECTION 10. SPECIAL PRECAUTIONS
--

Precautions to be Taken in Handling and Storing: Caution should be taken with this material so that prolonged of skin and contact with eyes does not occur.

THE ABOVE LISTED DATA IS BASED ON TESTS AND EXPERIENCE WHICH SCSi BELIEVES TRUE AND RELIABLE AND IS SUPPLIED FOR INFORMATIONAL PURPOSES ONLY. SCSi DISCLAIMS ANY LIABILITY FOR DAMAGE OR INJURY WHICH RESULTS FROM THE ABOVE DATA AND NOTHING CONTAINED THEREIN SHALL CONSTITUTE A GUARANTEE, WARRANTY (INCLUDING WARRANTY OF MERCHANTABILITY) OR REPRESENTATION (INCLUDING FREEDOM FROM PATENT LIABILITY) BY SCSi WITH RESPECT TO THE DATA, THE PRODUCTS DESCRIBED, OR THEIR USE FOR ANY SPECIFIC PURPOSE, EVEN IF THAT PURPOSE IS KNOWN TO SCSi)

MIXING RECOMMENDATIONS

FRAC-ATTACK®

FRAC-ATTACK® is the original, complete “*LOST CIRCULATION PILL ON A PALLET*”. A fast-acting dewatering action, instigated by pressure exerted by (1) a column of fluid above, followed by (2) a staged squeeze pressure applied to the pill, deposits a solid sealing “plug” into and across the loss zone, as the liquid phase, consisting of a highly inhibitive calcium based fluid, is quickly de-watered into the formation

In the *NORMAL DENSITY FORMULATION*, each pallet of FRAC-ATTACK® will yield approximately 20 bbls of finished un-weighted liquid pill volume. The barite additions will increase the finished pill volume, proportionally.

Mixed directly into drill water, FRAC-ATTACK® forms a complete system in itself, with all required materials on one pallet. All you add to the finished liquid product is barite to weight the pill to the desired density. As a general rule, the pill should be weighted to a minimum of the current drilling fluid density and up to 0.5 ppg heavier.

FRAC-ATTACK® utilizes only two (2) mixing scenarios, (1) *NORMAL DENSITY FORMULATION* for densities ranging from approximately 12.6 ppg to 19.0+ ppg and (2) *LIGHT DENSITY FORMULATION* for densities ranging from basically un-weighted to approximately 12.5 ppg. The chart below reflects 100 bbls of pill volume, and can be adjusted for volume required (*cut in half for 50 bbls – double for 200 bbls, etc*). For *LIGHT DENSITY FORMULATIONS* ranging from un-weighted to approximately 12.5 ppg, the addition of 50 sacks (one pallets worth) has shown to greatly increase the sealing characteristics and success rate.

PILL PPG	DRILL WATER (Bbls)	PALLETS of FRAC-ATTACK®	PAILS FOAM-BLAST	SACKS of BARITE	FINSIHED PILL VOLUME
9.2 – 10.5	70	7	3.5	90	100
10.6 – 11.5	70	7	3.5	157	100
11.6 – 12.5	70	7	3.5	230	100+
12.6 – 14.0	75	5	2.5	351	105+
14.1 – 15.0	60	4	2	442	105 – 110+
15.1 – 16.0	60	4	2	543	105 – 110+
16.1 – 17.0	60	4	2	654	105 – 110+
17.1 – 18.0	60	4	2	778	105 – 110+
18.0 – 19+	60	4	2	917	105 – 110+

MIXING RECOMMENDATIONS

FRAC-ATTACK®

GENERAL PROCEDURES:

1. Consider 100 bbls of finished **FRAC-ATTACK®** to be the normal recommended starting pill volume. Insure sufficient pill volume is utilized to cover all possible loss sections, and excess squeezing requirements. In large and/or extended hole sections, additional pill volume may be recommended.
2. **FRAC-ATTACK®** was designed to expedite mixing and application procedures by utilizing a cleaned out rig mixing tank and pump. When time is a major consideration or when an OBM or SBM is in use, a rental-mixing tank can expedite the cleaning out process and mixing time. Any mixing tank should be of sufficient area to accommodate the finished pill volume.
3. **FRAC-ATTACK®** can be batch mixed, when mixing tank capacity is restricted. Each batch mix can be mixed, placed in an agitated storage tank or vessel, or placed into the drill string. When the final batch is prepared – the entire pill volume can be pumped.
4. **FRAC-ATTACK®** can be prepared prior to actual need, however it is recommended that it be prepared and agitated in the virgin, un-weighted state, if it is to be held for an extended period of time. Any weighted **FRAC-ATTACK®** slurry must be agitated and circulated continuously to avoid settling and separation.

ADDITIONAL GUIDELINES

5. For **LIGHT DENSITY FORMULATION** mixtures of **FRAC-ATTACK®**, one pallets worth (50 sacks) of **STRATA-VANGUARD®** should be added, per 100 bbls of finished pill volume, for added sealing capacity and strength.
6. Insure all **FRAC-ATTACK®** pill slurry has exited the bit to and insure the bit is pulled completely out of any **FRAC-ATTACK®** pill slurry.
7. Reduce pump rates to 1+ B.P.M., or less, when pumping through MWD, KWD, RWD, Mud Motors and/or small bit jets, to assure a smooth placement procedure. Monitor and regulate pump pressures, especially in dense and elevated temperature scenarios. Anticipate pressure spikes and increases as dense any dense pill mixture stages from one string size to another.
8. **FRAC-ATTACK®** can be spotted in open hole, insuring all potential problem sections and zones are below the bit. **FRAC-ATTACK®** can be spotted, then stage-squeezed, as the situation warrants, and can also be tailored for “**BULL-HEADING**” operations from inside the casing.
9. **FRAC-ATTACK®** can be stage-squeezed to the desired pressure and up to the maximum anticipated mud weight for the interval, and is excellent for improving the formation and casing shoe integrity



STRATA CONTROL SERVICES, INC.
P. O. Box 272 * Crowley, La 70527

1-888-656-0001 Toll Free
1-337-785-0000 Direct
1-337-785-0004 Fax:
E-Mail: stratinc@bellsouth.net
WWW: STRATACONTROL.COM

STRATA-VANGUARD®

STRATA-VANGUARD® is a unique blend of inorganic sealants and bridging agents that are used as an innovative approach to the initial response to lost circulation. **STRATA-VANGUARD®** is pre-measured and packaged to take the guesswork out of the formulation of initial response lost circulation material pills.

STRATA-VANGUARD® employs research developed by Strata Control Services, Inc. to effectively bridge and seal extremely permeable formations, over-balanced formations or hydraulically induced fractures.

BENEFITS:

- Pre-mixed and packaged
- Compatible with all fluid systems
- Mixes in existing fluid with the rig equipment
- Eliminates need for multiple LCM products
- Reduces transportation costs to deliver and return excessive LCM products
- Saves rig space and minimizes waste
- Environmentally safe, non-toxic
- Use as a sweep or as a squeeze pill

APPLICATION:

As a contingency, it is generally recommended that **STRATA-VANGUARD®** accompany initial orders of SCSi products intended to prevent seepage or loss circulation problems. If a lost circulation scenario is encountered, the bit should be pulled to above the suspected loss zone. Depending on the mud weight, up to 100 ppb can be mixed (specific recommendations are made on a well by well basis) into the active mud, and spotted in the open hole. When vugular or cavernous formations are encountered, and in lighted density scenarios, **STRATA-VANGUARD®** can be used as an addition to **FRAC-ATTACK®**.

Note: **STRATA-VANGUARD®** has extremely effective sealing characteristics. A Strata Control representative can tailor a recommendation and pumping procedure through your string and well bore configuration. Call anytime for a recommendation.

PACKAGING:

- 50 pound bags
- 50 bags per pallet.
- Shrink-Wrapped

“THE MUD STOPS HERE!®”

STRATA CONTROL SERVICES, INC.®	MATERIAL SAFETY DATA SHEET
P.O. Box 272 Crowley, LA 70527-0272 Unites States of America	STRATA-VANGUARD®

SECTION 1. MATERIAL IDENTIFICATION

Chemical Name: STRATA-VANGUARD®
Synonyms: Proprietary Lost Circulation Material Pill Package
Chemical Family: Mixture
CAS Red No.: Mixture
Emergency Phone No.: (337) 785-0000
Effective: 06/2006

SECTION 2. COMPONENTS - INGREDIENTS

Ingredients	CAS Number	% By Wt.	OSHA PEL	ACGIH TLV
Crystalline silica (Quartz)	14808-60-7	< 1	0.1 mg/m3*	0.1 mg/m3**
Zinc Oxide	64742-04-7	0.5 - 2	5 mg/m3	NA
Sulphur	07704-34-9	0.5 - 2	5 mg/m3	10 mg/m3
Stearic Acid	00057-11-4	0.5 - 2	NA	NA
Proprietary**	Various	> 93	NE	NE

* Respirable Dust

** The specific chemical identity of this material is being withheld as a trade secret. It will be provided in accordance with the provisions of 29 CFR Part 1910.1200 (i). In the event of a medical emergency, it will be provided to a treating physician or nurse through utilization of the above Emergency Telephone Number.

SECTION 3. PHYSICAL DATA

Appearance: Dark Grey Medium-Coarse Powder Texture
Boiling Point (Deg. F.): Not Applicable
Vapor Pressure (mm of Mercury): Not Applicable
Specific Gravity (Water = 1): 2.10
Vapor Density (Air = 1): Not Applicable
Percent Volatile (By weight): Not Applicable
Solubility In Water: Negligible
Evaporation Rate (Butyl Acetate=1): Not Applicable

SECTION 4. REACTIVE DATA

Stable: X **Unstable:**
Hazardous Combustion or Decomposition Products: Not Established
Incompatibility (materials to avoid): Oxygen Difluoride, Chlorine, Trifluoride, Hydrofluoric Acid.
Hazardous Polymerization: Will not occur.

SECTION 5. EMERGENCY AND FIRST AID PROCEDURES

Ingestion: Give two (2) glasses of water and induce vomiting, only if subject is conscious.
Inhalation: . Immediate remove from exposure. If breathing is difficult, give oxygen. Seek medical attention, if necessary.
Skin: Wash with soap and water.
Eyes: Irrigate eyes with water for at least 15 minutes.

STRATA CONTROL SERVICES, INC.®	MATERIAL SAFETY DATA SHEET
P.O. Box 272 Crowley, LA 70527-0272	STRATA-VANGUARD®

SECTION 6. FIRE AND EXPLOSION DATA

Flash Point (method used): Not Applicable

Flammable Limits in Air % By volume: Lower: Not Applicable Upper: Not Applicable

Special Fire Fighting Procedures: Evacuate area of all unnecessary personnel. Use NIOSH approved self-contained breathing apparatus (SCBA) and other protective equipment and/or garments as conditions warrant. Use water fog or spray to cool exposed containers and equipment.

Extinguishing Media: Water, foam, dry chemical, carbon dioxide (CO₂). Use media appropriate for surrounding fire.

Unusual Fire & Explosion Hazards: Not Applicable

Hazardous Combustion Products: Not Applicable

SECTION 7. HEALTH HAZARDS INFORMATION

OSHA Permissible Exposure Limit: None established

AGGIH Threshold Limit Value: None established

Effects of Overexposure: .May cause eye irritation with contact, and may irritate mucous membranes of the nose, throat and upper respiratory tract. Ingestion may cause irritation to the gastrointestinal tract.

Listed as Carcinogen or Potential Carcinogen: No

SECTION 8. SPILL, LEAK AND DISPOSAL PRODUCERS

In Case of Spill or Leak: Waste Disposal Method: Flushing and rinsing

EPA Registry Number: None

SECTION 9. PROTECTION INFORMATION

Respiratory Protection: Use NIOSH approved respirator for protection against dust.

Ventilation: Use adequate mechanical ventilation.

Protective Gloves: Rubber or neoprene

Eye Protection: Safety Goggles or Face Shield

Other Protective Equipment: Synthetic apron.

SECTION 10. SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing: Caution should be taken with this material so that prolonged of skin and contact with eyes does not occur.

THE ABOVE LISTED DATA IS BASED ON TESTS AND EXPERIENCE, WHICH SCSi BELIEVES TRUE AND RELIABLE AND IS SUPPLIED FOR INFORMATIONAL PURPOSES ONLY. SCSi DISCLAIMS ANY LIABILITY FOR DAMAGE OR INJURY WHICH RESULTS FROM THE ABOVE DATA AND NOTHING CONTAINED THEREIN SHALL CONSTITUTE A GUARANTEE, WARRANTY (INCLUDING WARRANTY OF MERCHANTABILITY) OR REPRESENTATION (INCLUDING FREEDOM FROM PATENT LIABILITY) BY SCSi WITH RESPECT TO THE DATA, THE PRODUCTS DESCRIBED, OR THEIR USE FOR ANY SPECIFIC PURPOSE, EVEN IF THAT PURPOSE IS KNOWN TO SCSi)

MIXING RECOMMENDATIONS

STRATA-VANGUARD®

STRATA-VANGUARD® is a unique packaged blend of inorganic sealants and bridging agents used as an innovative approach to the initial response to lost circulation. **STRATA-VANGUARD®** is pre-measured and packaged to take the guesswork out of the formulation of initial response lost circulation material pills.

STRATA-VANGUARD® employs research developed by **STRATA CONTROL SERVICES, INC.**, to effectively bridge and seal extremely permeable formations, over-balanced formations and/or hydraulically induced fractures.

STRATA-VANGUARD® offers a quick and immediate initial response to the lost scenario, as it is mixed directly into the existing drilling fluid, with no tanks or lines to be cleaned or washed out. **STRATA-VANGUARD®** can be mixed directly into any drilling fluid (WBM, SBM, OBM, etc)

FRAC-ATTACK® utilizes only two (2) mixing scenarios, (1) ***NORMAL DENSITY FORMULATION*** for densities ranging from approximately 12.6 ppg to 19.0+ ppg and (2) ***LIGHT DENSITY FORMULATION*** for densities ranging from basically un-weighted to approximately 12.5 ppg. The chart below reflects 100 bbls of pill volume, and can be adjusted for volume required (*cut in half for 50 bbls – double for 200 bbls, etc*). For ***LIGHT DENSITY FORMULATIONS*** ranging from un-weighted to approximately 12.5 ppg, the addition of 50 sacks (one pallets worth) has shown to greatly increase the sealing characteristics and success rate.

Density Range (PPG)	PPB Concentration of STRATA-VANGUARD®	Sacks of STRATA-VANGUARD® to add per bbl of drilling fluid
8.4 – 12.0	100 PPB	2 sacks/bbl of mud
12.0 – 16.0	75 PPB	1.5 sacks/bbl of mud
16.1+	50 PPB	1 sack/bbl of mud

MIXING RECOMMENDATIONS

STRATA-VANGUARD®

GENERAL PROCEDURES:

1. Utilize the rig slugging tank or a dedicated pre-mix or reserve tank to be used for sweeps and spot pill mixing.
2. **STRATA-VANGUARD®** is recommended for prevention, correction and control of seepage to whole mud loss. **STRATA-VANGUARD®** addresses these loss scenarios in (1) **Sack-By-Sack hourly product additions**, (2) **Sweeps** and (3) **Spot pills**.
3. **STRATA-VANGUARD®** product hourly additions, sweep and spot concentrations can be adjusted as the situation warrants.
4. As a preventive measure, **STRATA-VANGUARD®** is recommended added in a *Sack-By-Sack Hourly addition* of approximately 2 – 6 sacks per hour. This hourly addition method provides fresh sealing product to circulate through the well bore, sealing as it circulates. The product is then screened from the returning fluid, allowing for a lower overall ECD value. This method offers the operator a viable alternative to loading the system up with various LCM materials, which can lead to higher ECD's and associated problems.

ADDITIONAL GUIDELINES

5. To compliment the Sack-By-Sack Hourly product additions, **STRATA-VANGUARD®** is recommended pumped in sweeps for additional sealing requirements. Generally a sweep of 20 – 50 bbls at 10 to 20 ppb concentration should suffice for normal seepage.
6. In persistent and more severe loss situations, **STRATA-VANGUARD®** can be mixed as a **SPOT PILL** in concentrations ranging from 50 to 75 to 100 ppb. Please refer to the mixing chart for recommended additions for each density range.
7. **STRATA-VANGUARD®** can be mixed in **SPOT PILLS**, in combination with **STRATA-FLEX® Fine & STRATA-FLEX® Medium**, for optimized sealing results.
8. The **STRATA-VANGUARD® SPOT PILL** mixture can be squeezed gently for improving the seal and formation integrity.
9. **STRATA-VANGUARD®** is recommended added to any **LIGHT DENSITY FORMULATION** mixture of **FRAC-ATTACK®**, as it has shown tremendous sealing improvement in the lighter density mixtures.



STRATA CONTROL SERVICES, INC.
P. O. Box 272 * Crowley, La 70527

1-888-656-0001 Toll Free
1-337-785-0000 Direct
1-337-785-0004 Fax:
E-Mail: stratinc@bellsouth.net
WWW: STRATACONTROL.COM

STRATA-FLEX®

U.S. Patent No. 6,806,232 – Issued October 19, 2004

STRAT-FLEX® is a unique, precisely graded, inert, elastomeric sealant material. It is highly compressible and deformable and has high tensile and shear strengths. These characteristics allow **STRAT-FLEX®** to perform effectively outside the limitations of common fibrous materials, as it will withstand higher differential pressures while bridging micro-fractures and sealing permeable sands. **STRAT-FLEX®** is used to control seepage loss in depleted formations, prevent differential sticking and to cure lost circulation. **STRATA-FLEX®** is truly the next generation in fluid and mud loss solutions.

BENEFITS:

- Helps prevent differential sticking
- Seals micro-fractures
- Aids in preventing lost circulation
- High shear and tensile strengths
- Compressible and Deformable
- Excellent sealing characteristics
- Environmentally safe, non-toxic
- Non-damaging to MWD tools

APPLICATION:

STRATA-FLEX® mixes easily through the mud-mixing hopper. Sweeps are mixed at 20 ppb **STRATA-FLEX®** (fine) and 10 ppb **STRATA-FLEX®** (medium) and are typically 25 - 50 bbls in volume. For ease in mixing, in a water base mud system, add 0.1% – 0.5% of wetting agent or coupler.

STRATA-FLEX® is used in a preventive sweep application when known or anticipated loss/ seepage zones are to be encountered. Sweep pill through the annulus a minimum of every 90' stand drilled, and/or every 2 – 4 hours. Sweep the hole additionally, as dictated by seepage and mud loss occurrence, to seal off depleted sands and to prevent stuck pipe and lost circulation.

When spotting as a pill for loss circulation, spot **STRATA-FLEX®** opposite the thief zone, using slow pump rate and low pressures. If possible, allow the pill to sit static for 4 – 8 hours. Attempt to regain circulation, starting at slow pump and increasing to full drill pump rate as each bottoms up reaches the surface.

PACKAGING:

25-pound bags, 50 bags per pallet
Shrink-Wrapped

“THE MUD STOPS HERE!®”

STRATA CONTROL SERVICES, INC.®	MATERIAL SAFETY DATA SHEET
P.O. Box 272 Crowley, LA 70527-0272 United States of America	STRATA-FLEX® Fine/Medium (US Patent No. 6,806,232 B1)

SECTION 1. PRODUCT IDENTIFICATION

CHEMICAL FAMILY: Not Applicable	NFPA RATING: (0-4)
HAZARD LABEL: No Data	Health 1
MOLECULAR FORMULA: Not Applicable	Flammability 1
MOLECULAR WEIGHT: No Data	Reactivity 0

SECTION 2. HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

COMPOSITION: Mixture of natural and synthetic elastomeric particles, carbon black, fillers and oils

COMPONENTS	CAS NUMBER	% Wt.	OSHA	ACGIH
Carbon Black	01333-86-4	27-33	3.5 mg/m3	3.5 mg/m3
Process Oil	64742-04-7	10-20	5 mg/m3	NA
Zinc Oxide	01314-12-2	1-5	5 mg/m3	10 mg/m3
Sulfur	07704-34-9	1-5	NA	10 mg/m3
Stearic Acid	00057-11-4	1-5	NA	NA
Proprietary Ingredients		40-55		

SECTION 3. PHYSICAL/CHEMICAL CHARACTERISTICS

APPEARANCE:	Black Granules	ODOR:	Mild
SOLUBILITY IN WATER:	insoluble	VISCOSITY:	NA
SPECIFIC GRAVITY:	1.14±0.03	pH:	NA
MELTING POINT:	NA	VAPOR PRESSURE:	NA
% VOLATILE BY VOLUME:	<1% primarily water	VAPOR DENSITY:	NA

SECTION 4. FIRE AND EXPLOSION HAZARDS

FLASH POINT (COC): 475°F
AUTO-IGNITION TEMPERATURE: 700°F
FLAMMABLE LIMITS IN AIR % BY VOLUME: Upper: NA LOWER: NA
EXTINGUISHING MEDIA: Water, Dry Chemical, Foam, or Carbon Dioxide

SECTION 5. REACTIVE DATA

STABILITY: Material is stable
CONDITIONS TO AVOID: Combustion
INCOMPATIBILITY (MATERIALS TO AVOID): None known or expected.
HAZARDOUS POLMERIZATION: Will not occur.
DECOMPOSITION PRODUCTION: Carbon monoxide, carbon Dioxide, hydrogen, hydrogen sulfide, pentadiene, benzene, xylene, carbon, ash: (zinc oxide, titanium dioxide, silicon dioxide, calcium oxide and magnesium), oxides of sulfur and nitrogen, styrene, toluene, 4-vinyl-1-cyclohexene, 1,15-cyclooctadiene, 1,5,9-cycdodecatrienc, various hydrocarbons, and various oxidized hydrocarbons.

SECTION 6. HEALTH HAZARD DATA

Note: This product has not been tested by Strata Control Services, Inc. to determine its specific health hazards. The information provided in this section includes health hazard information for the product components.

CARCINODENICITY: NTP? No IRAC Monographs? Yes OSHS Regulates? No

CARCINOGENICITY/OTHER INFORMATION: This product contains petroleum oils similar to ones categorized by the International Agency for Research on Cancer (ISRC) as causing skin cancer in mice after prolonged and repeated contact. Any potential hazard can be minimized by using recommended protective equipment to avoid skin contact and by washing thoroughly after handling.

OCCUPATIONAL EXPOSURE LIMITS: See Section 2.

EFFECTS OF OVEREXPOSURE:

Acute:

Eyes: slight to moderate eye irritation.

Skin: moderately irritating.

Inhalation: Irritating to mucous membranes and respiratory tract.

Ingestion: Acute effects of rubber ingestion not determined.

Chronic: There is sufficient evidence for the carcinogenicity of solvent extract from heavy paraffinic distillates in experimental animals.

ADDITIONAL MEDICAL AND TOXICOLOGICAL INFORMATION: May aggravate pre-existing dermatitis. Certain rubber formulations contain trace nitrosamines, some of which are carcinogenic in animals' experiments.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Persons with pre-existing skin disorders may be more susceptible to irritating effects.

EMERGENCY AND FIRST AID PROCEDURES:

Eye Contact: Flush thoroughly with water, see physician if eye irritation persists.

Skin Contact: Wash skin with soap and water

Inhalation: Remove to fresh air.

Ingestion: Seek medical attention if large quantities are consumed.

SECTION 7. PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Collect in a manner appropriate for its physical condition.

WASTE DISPOSAL METHOD: Dispose of in accordance with Federal, State and Local regulations.

HAZARD LABEL INFORMATION: Store in a cool dry place.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Store in a cool dry well ventilated area, away from direct sunlight.

OTHER PRECAUTIONS: Follow all applicable state, local and federal guidelines.

SECTION 8. CONTROL MEASURES

EYE PROTECTION: Use safety glasses recommended as general safety practice at all times.

PROTECTIVE GLOVES: Wear gloves, minimize contact with product, and wash skin after handling.

VENTILATION: Ventilation should be provided at processing machinery to control fumes and odors. Fumes generated during processing or when overheated may be irritating. Respiratory protection is considered necessary where ventilation is not sufficient.

INGESTION: Not applicable

The information provided is believed accurate and reliable as of the data compiled. However, this information should not be construed as a warranty or guarantee of accuracy. The user must assume responsibility for completeness and reliability for his suited purpose. We do not accept liability for any loss or damage that may occur from the use of this compilation or information nor warranty against patent infringement.

MIXING RECOMMENDATIONS

STRATA-FLEX®

(US Patent No. 6,806,232 - Issue Date October 19, 2004)

STRATA-FLEX® is a unique precisely graded, inert and resilient elastomeric sealant. It is highly compressible and deformable with high tensile and shear strengths. **STRATA-FLEX®** performs effectively outside the limitations of common cellulose fiber materials, withstanding higher differential pressures while bridging micro-fractures and sealing permeable sand formations.

STRATA-FLEX® is used for prevention, control and correction of seepage loss in depleted formations, to aid in preventing differential sticking tendencies and to cure lost circulation. **STRATA-FLEX®** is indeed the next generation in fluid and mud loss solutions.

STRATA-FLEX® employs research developed by **STRATA CONTROL SERVICES, INC.**, to effectively bridge and seal extremely permeable formations, over-balanced formations and/or hydraulically induced fractures. **STRATA-FLEX®** offers the flexibility of a fine grade material, ranging 80 – 120 mesh and a medium grade, ranging 10 – 30 mesh, for optimized sealing characteristics.

STRATA-FLEX® offers a quick and immediate solution to the lost scenario, as it is mixed directly into the existing drilling fluid, with no tanks or lines to be cleaned or washed out. **STRATA-FLEX®** can be mixed directly into any drilling fluid (WBM, SBM, OBM, etc), and is fully compatible with all drilling fluids and other additives.

Application	Grade	Pill Size	PPB	Procedure
Seepage Prevention	Fine	50 – 100 bbls Sweeps	5 – 15	Circulate sweeps every 30'± of new hole made
Seepage Correction	Fine Medium	50 – 100 bbls Sweeps	5 – 30 5 – 30	Circulate sweeps every 30'± of new hole made, and as required for sealing
Whole Mud Loss Correction & Control	Fine Medium	50 – 100 bbls Spot Pill	10 – 50 10 – 50	Spot pill thru suspect loss zone. Supplement spots with STRATA-VANGUARD® for optimized sealing

MIXING RECOMMENDATIONS

STRATA-FLEX®

(US Patent No. 6,806,232 - Issue Date October 19, 2004)

GENERAL PROCEDURES:

1. Utilize the rig slugging tank or a dedicated pre-mix or reserve tank to be used for sweeps and spot pill mixing.
2. **STRATA-FLEX®** is recommended for prevention, correction and control of seepage to whole mud loss. **STRATA-FLEX®** addresses these loss scenarios in (1) **Sack-By-Sack hourly product additions**, (2) **Sweeps** and (3) **Spot pills**.
3. **STRATA-FLEX®** product hourly additions, sweep and spot concentrations can be adjusted as the situation warrants.
4. As a preventive measure, **STRATA-FLEX®** is recommended added in a **Sack-By-Sack Hourly addition** of approximately 2 – 6 sacks per hour. This hourly addition method provides fresh sealing product to circulate through the well bore, sealing as it circulates. The product is then screened from the returning fluid, allowing for a lower overall ECD value. This method offers the operator a viable alternative to loading the system up with various LCM materials, which can lead to higher ECD's and associated problems.

ADDITIONAL GUIDELINES

5. To compliment the Sack-By-Sack Hourly product additions, **STRATA-FLEX®** is recommended pumped in sweeps for additional sealing requirements. Generally a sweep of 20 – 50 bbls at 10 to 25 ppb concentration of either or a combination of both the fine and medium grade should suffice for normal seepage.
6. In persistent and more severe loss situations, **STRATA-FLEX®** can be mixed as a **SPOT PILL** in concentrations ranging from 50 to 100 ppb.
7. **STRATA-FLEX®** can be mixed in **SPOT PILLS**, in combination with **STRATA-VANGUARD®** for optimized sealing results.
8. The **STRATA-FLEX® / STRATA-VANGUARD® SPOT PILL** mixture can be squeezed gently for improving the seal and formation integrity.
9. An ideal spot mixture for more persistent losses should include approximately 80 ppb **STRATA-VANGUARD®**, 10 ppb **STRATA-FLEX® Fine** and 10 ppb **STRATA-FLEX® Medium**. The exact pill mixture can be adjusted to fit the scenario.



STRATA CONTROL SERVICES, INC.
P. O. Box 272 * Crowley, La 70527

1-888-656-0001 Toll Free
1-337-785-0000 Direct
1-337-785-0004 Fax:
E-Mail: stratinc@bellsouth.net
WWW: STRATACONTROL.COM

STRATA-TROL®

STRATA-TROL® is an innovative blend of variable softening point, naturally occurring asphaltines, pre-coupled and combined with selected resins. This unique combination allows **STRATA-TROL®** to exhibit the particle integrity needed to seal micro- fractured shales and permeable under-pressured sands while promoting exceptional HTHP fluid loss reductions.

STRATA-TROL® minimizes fluid contact with reactive formations, and deposits a thin lubricated filter cake when applied as recommended. **STRATA-TROL®** meets or exceeds all EPA and other environmental standards.

BENEFITS:

- Sized, compressible & deformable particles
- Pre-coupled to eliminate costly surfactants
- Minimizes shale dispersion
- Enhances fluids ability to seal sand sections and micro-fractures
- Promotes deposition of a thin, tough and lubricated filter cake
- Exhibits excellent HT-HP fluid loss reduction.
- Environmentally safe.

APPLICATION:

System Treatment.....2-5 ppb
Pill Form.....8-15 ppb

A system treatment followed by high concentration sweeps is recommended. Sweeps allow newly exposed formations to be treated with necessary quantities of material to maintain hole integrity.

A high concentration pill can be spotted across problematic zones prior to logging or running casing.

PACKAGING:

- 50 pound lined paper bags
- 50 bags per pallet;
- Palletized and Shrink Wrapped

“THE MUD STOPS HERE!®“

STRATA CONTROL SERVICES, INC.®	MATERIAL SAFETY DATA SHEET
P.O. Box 272 Crowley, LA 70527-0272 United States of America	STRATA-TROL®

SECTION 1. MATERIAL IDENTIFICATION

CHEMICAL NAME: STRATA-TROL®	<u>HMIS RATINGS</u>	<u>DEGREE OF HAZARD</u>
CHEMICAL FAMILY: Water Dispersible Asphaltine Complex	Health	1 4 = Severe
CAS NO.: 70321-73-2	Flammability	2 3 = Serious
EMERGENCY PHONE NO.: (337) 785-0000	Reactivity	0 2 = Moderate
EFFECTIVE: 06/2006	Personal Protection	E 1 = Slight
SUPERSEDES: 02/1997		0 = Minimal

SECTION 2. HAZARDOUS INGREDIENTS

Can be a nuisance particulate (dust). OSHA TWA Limit is 15 mg/m3 respirable fraction.

SECTION 3. PHYSICAL DATA

Appearance:	Gray to black powder
Bulk Density (lb/ft3), compacted:	43
Odor:	Earthy

SECTION 4. REACTIVE DATA

Stable: X	Unstable:
HAZARDOUS Combustion or Decomposition Products: Oxides of carbon and very high boiling organic compounds may form on combustion	
Incompatibility (materials to avoid):	Strong oxidizing agents.
Conditions to Avoid:	Do not store near open flames.
Hazardous Polymerization:	Will not occur

SECTION 5. FIRE AND EXPLOSION DATA

Flash Point (method used):	>200°F
Auto Ignition Temperature:	Not known
Flammable Limits in Air % By volume: Lower:	Not Applicable
Upper:	Not Applicable
Special Fire Fighting Procedures:	Use water spray to absorb vapors. Wear self-contained breathing apparatus.
Extinguishing Media:	Water, foam, dry chemical, or carbon dioxide.

SECTION 6. EMERGENCY AND FIRST AID PROCEDURES

Ingestion:	Contact a physician if large quantities are ingested.
Inhalation:	Remove to fresh air. If breathing is difficult, administer oxygen and call a physician immediately.
Skin:	Wash with soap and water.
Eye:	Immediately flush with copious quantities of water to remove all particles. See a physician if irritation persists.

SECTION 7. HEALTH HAZARDS INFORMATION

OSHA Permissible Exposure Limit:	15 mg/m ³
AGGIH Threshold Limit Value:	Inhalation
Acute Effects of Overexposure:	
Ingestion:	None known
Inhalation:	Excess dust inhalation may cause difficulty in breathing.
Skin:	May cause slight irritation.
Eye:	May cause slight irritation.
Chronic Effects of Overexposure:	None known
Listed as Carcinogen or Potential Carcinogen:	No

SECTION 8. SPILL, LEAK AND DISPOSAL PRODUCERS

In Case of Spill or Leak: Pick-up with shovel or vacuum avoiding dusty conditions and place in suitable container for disposal.

Waste Disposal Method: Dispose of in accordance with all applicable federal, state, and local environmental regulation.

EPA Registry Number: None

Environmental Toxicity Date: None Known

SECTION 9. PROTECTION INFORMATION

Respiratory Protection: Under an appropriate respirator for nuisance particles are required by 29 CFR 1910.1043.

Ventilation: Use local exhaust where dust concentration may exceed the OSHA TWA limit.

Protective Gloves: Any non-cloth gloves should be worn.

Eye Protection: Chemical safety goggles under dusty conditions.

SECTION 10. SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing: Avoid prolonged contact with skin. Do not get in eyes. Avoid breathing dust. Launder contaminated clothing and clean shoes thoroughly before reuse.

THE ABOVE LISTED DATA IS BASED ON TESTS AND EXPERIENCE WHICH SCS1 BELIEVES TRUE AND RELIABLE AND IS SUPPLIED FOR INFORMATIONAL PURPOSES ONLY. SCS1 DISCLAIMS ANY LIABILITY FOR DAMAGE OR INJURY WHICH RESULTS FROM THE ABOVE DATA AND NOTHING CONTAINED THEREIN SHALL CONSTITUTE A GUARANTEE, WARRANTY (INCLUDING WARRANTY OF MERCHANTABILITY) OR REPRESENTATION (INCLUDING FREEDOM FROM PATENT LIABILITY) BY SCS1 WITH RESPECT TO THE DATA, THE PRODUCTS DESCRIBED, OR THEIR USE FOR ANY SPECIFIC PURPOSE, EVEN IF THAT PURPOSE IS KNOWN TO SCS1)



STRATA CONTROL SERVICES, INC.
P. O. Box 272 * Crowley, La 70527

1-888-656-0001 Toll Free
1-337-785-0000 Direct
1-337-785-0004 Fax:
E-Mail: stratinc@bellsouth.net
WWW: STRATACONTROL.COM

FOAM-BLAST™

Antifoam-Defoam

FOAM-BLAST™ is a premium grade, liquid de-foaming/anti-foaming agent designed for optimized foam control in **FRAC-ATTACK®** mixtures, and optimized for all water base drilling, work-over, drill-in and completion fluids. **FOAM-BLAST™** eliminates foam and entrapped air. **FOAM-BLAST™** is an excellent anti-foaming agent, for preventing aeration and foaming situations in low solids and brackish fluids.

FOAM-BLAST™ is far superior to most common liquid defoaming agents and the mixture of Aluminum Stearate in diesel oil. **FOAM-BLAST™** is water dispersible and effective controls foam and aeration tendencies at any pH.

BENEFITS:

- Effectively controls/eliminates foam in all densities of water base drilling mud
- Works in both solids laden drilling mud and solids-free fluids systems.
- Extremely effective in mixing **FRAC-ATTACK®**
- Mixes easily - Can be mixed through the rig-mixing hopper.
- Can be splashed over the surface of the pits.
- Requires no special mixing equipment or facilities.
- Is economical and very effective in smaller quantities.

APPLICATION:

- For use in **FRAC-ATTACK®** Pills:
 - 1 bucket of **FOAM-BLAST™** for every 2 pallets products mixed
- Prevention/Control of Foam and aeration
- For Water Base Mud Systems:
 - 0.010 - 0.050 Gal/Bbl of **FOAM-BLAST™**
- Brine/Completion Fluid Systems:
 - 0.025 - 0.050 Gal/Bbl of **FOAM-BLAST™**

PACKAGING:

- 5 Gallon Plastic Buckets
- Easy-pour spouts on each pail
- 12 pails per pallet
- 50+/- lbs per pail
- Shrink Wrapped for easy transport

“THE MUD STOPS HERE!®“

STRATA CONTROL SERVICES, INC.®	MATERIAL SAFETY DATA SHEET
P.O. Box 272 Crowley, LA 70527-0272 Made in the USA	FOAM-BLAST® Anti-Foam (Use to Mix FRAC-ATTACK® & For Mud Foaming Problems)

SECTION 1. PRODUCT IDENTIFICATION

DATE: 05/29/06
PRODUCT NAME: FOAM-BLAST® Anti-Foam
MANUFACTURER: ROSS Chem P.O.Box 458 - 303 Dale Drive - Fountain Inn, SC 29644
EMERGENCY PHONE: (888) 656-0001
CAS. NO AND NAME: Not Applicable
CHEMICAL FORMULA: Mixture

SECTION 2. HAZARDOUS COMPONENTS

COMPONENTS	CAS NO.)	WT. %	AGGIH TLV	OSHA PEL
None				

SECTION 3. PHYSICAL PROPERTIES

APPERANCE: Yellow to dark amber clear liquid
ODOR: Mild fatty odor.
BOILING POINT (DEGREE FAHRENHEIT): Not Determined
MELTING POINT (DEGREE FAHRENHEIT): N/A
VAPOR PRESSURE (mm OF MERCURY): Not pertinent
SPECIFIC GRAVITY (WATER = 1): 0.968 g/ml
pH: 6.8
SOLUBILITY IN WATER: Dispersible
VISCOSITY(@ 25•F): 1000 cps (Brookfield RVF)
POUR POINT: Approx.-10•C

SECTION 4. FIRE AND EXPLOSION DATA

FLASH POINT (DEGREES FARENHEIT; PMCC): >200°C (> 400°F) Penske Martens Closed Cup
FIRE EXTINGUISHING MEDIA: Use chemical foam, dry chemical or carbon dioxide to extinguish flames. Water may be used to cool fire-exposed containers.
FLAMMABLE LIMITS (PERCENT BY VOLUME): LOWER: N/A **UPPER:** N/A
SPECIAL FIRE FIGHTING PROCEDURES & EQUIPMENT: Do not enter confined fire space without full bunker gear material (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure NIOSH approved self-contained breathing apparatus. Cool fire exposed containers with water.
UNUSUAL FIRE & EXPLOSION HAZARDS: This product will ignite if exposed to an ignition source, while at a temperature at or above it's flash point.

SECTION 5. REACTIVE DATA

STABILITY: Stable
CONDITIONS TO AVOID: Very high temperature and flame
INCOMPATIBILITY (MATERIAL TO AVOID): Strong oxidizers. Avoid contact with aluminum surfaces. If the surface aluminum oxidizers fill is removed, release of hydrogen gas can result.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and unidentified organic compounds may be formed during combustion.
HAZARDOUS POLYMERIZATION: Will Not Occur

SECTION 6. HEALTH HAZARD INFORMATION

EXPOSURE FROM ROUTINE USE: Product is non hazardous.

EFFECTS OF OVEREXPOSURE: Not pertinent

PROBABLE ROUTES OF EXPOSURE: Eyes and skin

EMERGENCY AND FIRST AID PROCEDURES:

EYE CONTACT: Flush eyes with plenty of water immediately for at least 15 min. while holding Eye lids open. If irritation develops or persists, seek medical attention.

SKIN CONTACT: Flush skin with water. If irritation occurs, get medical attention.

INHALATION: Remove victim to fresh air.

INGESTION: Observe victim for nausea, seek medical attention if condition persists.

SECTION 7. TOXICITY DATA

ORAL: Liquid is moderately toxic and may be harmful if swallowed.

DERMAL: NE **INHALATION:** N/A

CARCINOGENICITY: Not listed by NTP, OSHA or IARC

OTHER PERTINENT DATA: N/A

SECTION 8. SPECIAL PROTECTION INFORMATION

PERSONAL PROTECTIVE EQUIPMENT

PROTECTIVE GLOVES: Chemically resistant gloves are suggested. **EYE PROTECTION:** Safety glasses or goggles **RESPIRATORY PROTECTION:** Avoid prolonged or repeated breathing of vapor. **OTHER PROTECTIVE EQUIPMENT:** N/A

VENTILATION - LOCALEXHAUST: N/A **MECHANICAL (GENERAL):** N/A

SECTION 9. SPILLS, LEAKS AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN ON CASE MATERIALS IS REALEASED OR SPILLED: May ignite. Shut off source of leak if safe to do so. Contain the spill. Soak up residue with an absorbent or other suitable material; dispose of properly. The material is not considered hazardous waste under Federal Hazardous Waste Regulation 21CFR 261, however consult local and state disposal agencies regarding the proper disposal of spilled materials.

WASTE DISPOSAL METHODS: Abide by all local, state and federal regulations in disposing synthetic hydrocarbons.

CLEAN WATER ACT REQUIREMENTS: N/A

RESOURCES CONSERVATION AND RECOVERY ACT (RCRA)REQUIREMENTS: Place in an appropriate disposal facility in compliance with local regulations.

SECTION 10. HAZARD RATINGS

HMIS HAZARD INDEX

Hazardous 4- Severe
Materials 3- Serious
Identification 2- Moderate
System 1- Slight
 0 - Minimal

HMIS RATINGS

Health1
Flammability 1
Reactivity0
Personal Protection ... B

SECTION 12. SPECIAL PRECAUTIONS AND COMMENTS

PRECAUTIONS TO BE TAKEN IN HANDLING AN STORING: Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures. Do not pressurize.

OTHER PRECAUTIONS: Keep away from children.

REGISTRATIONS/CERTIFICATIONS: N/A

IMPORTANT: THE ABOVE LISTED DATA IS BASED ON TESTS AND EXPERIENCE WHICH SCSI BELIEVES TRUE AND RELIABLE AND IS SUPPLIED FOR INFORMATIONAL PURPOSES ONLY. SCSI DISCLAIMS ANY LIABILITY FOR DAMAGE OR INJURY WHICH RESULTS FROM THE ABOVE DATA AND NOTHING CONTAINED THEREIN SHALL CONSTITUTE A GUARANTEE, WARRANTY (INCLUDING WARRANTY OF MERCHANTABILITY) OR REPRESENTATION (INCLUDING FREEDOM FROM PATENT LIABILITY) BY SCSI WITH RESPECT TO THE DATA, THE PRODUCTS DESCRIBED, OR THEIR USE FOR ANY SPECIFIC PURPOSE, EVEN IF THAT PURPOSE IS KNOWN TO SCSI)



STRATA CONTROL SERVICES, INC.
P. O. Box 272 * Crowley, La 70527

1-888-656-0001 Toll Free
1-337-785-0000 Direct
1-337-785-0004 Fax:
E-Mail: stratinc@bellsouth.net
WWW: STRATACONTROL.COM

STRATA-CLEAN™

STRATA-CLEAN™ is a heavy-duty concentrated water-soluble degreaser, and an exceptional hard surface cleaner and will penetrate and quickly remove oil, grease, rig grime, waxes and other industrial soils. **STRATA-CLEAN™** is a completely biodegradable, non-toxic, industrial grade degreaser.

STRATA-CLEAN™ may be applied in a variety of methods;

- (1) Using a power washer;
- (2) (2) Sprayed directly onto surface; and (3) wiped/moped on.

STRATA-CLEAN™ concentrated sudsing characteristics and free rinsing quality makes it suitable for land and offshore drilling rig cleaning, automatic scrubbing machines and industrial car wash applications, as well.

STRATA-CLEAN™ is ideal for pressure washers and steam cleaning applications.

BENEFITS:

- Effective in hot or cold water.
- Oil-Grease-Rigs-Industrial.
- Non-harmful to skin.
- Non-flammable.
- Non-Polluting.
- Non-Caustic & Non-Toxic.
- Contains No Chromates.

PHYSICAL PROPERTIES:

Appearance: Iridescent liquid with mild odor.
Specific Gravity: 1.01 to 1.02
Boiling Point: 220 deg. F
Solubility In Water: 100%

APPLICATION:

STRATA-CLEAN™ can be applied full strength directly onto surfaces, for removing heavy grease and oil stain or residue. Soaking for 10 – 30 minutes will increase cleaning characteristics. After soaking, rinse, pressure spray or brush off grime.

STRATA-CLEAN™ can be diluted as much as 20:1, and is effective sprayed, brushed, wiped or moped on. Use of a Power Washer increases the cleaning capabilities of **STRATA-CLEAN™**.

PACKAGING:

STRATA-CLEAN™ is available in 5-gallon pails and 55-gallon drums

“THE MUD STOPS HERE!®”

STRATA CONTROL SERVICES, INC.™	MATERIAL SAFETY DATA SHEET
P.O. Box 272 Crowley, LA 70527-0272 United States of America	STRATA-CLEAN™ "Rig Wash Cleaner"

SECTION 1. MATERIAL IDENTIFICATION

Chemical Name: STRATA-CLEAN™
Chemical Family: Surfactant Blend
CAS Red No.: N/A
Emergency Phone No.: (318) 785-0000
Effective: 06/2005
Supersedes: 02/1997

SECTION 2. HAZARDOUS INGREDIENTS

Component:			
(CAS registry No.)	Wt%	AGGIG TLV	OSHA PEL
None			

SECTION 3. PHYSICAL DATA

Appearance:	Iridescent liquid with mild odor
Molecular Wt:	N/A
Boiling Point (Deg. F.):	> 220 deg F.
Melting Point (deg. F.):	N/A
Vapor Pressure (mm of Mercury):	NE
Specific Gravity (Water = 1):	1.01 – 1.02
Vapor Density (Air = 1):	N/A
Percent Volatile (By weight):	< 2
pH:	12.5 – 12.7
Solubility In Water:	100%
Evaporation Rate (Butyl Acetate=1):	N/A

SECTION 4. REACTIVE DATA

Stable: X **Unstable:**
Hazardous Combustion or Decomposition Products: None known
Incompatibility (materials to avoid): Very Strong Acids
Hazardous Polymerization: Will not occur

SECTION 5. FIRE AND EXPLOSION DATA

Flash Point (method used): N/A
Flammable Limits in Air % By volume: Lower: N/A Upper: N/A
Special Fire Fighting Procedures: Prodcut is non-flammable, non-combustible
Extinguishing Media: Foam, dry chemical, or carbon dioxide.
Unusual Fire & Explosion Hazards: N/A
Hazardous Combustion Products: N/A

STRATA CONTROL SERVICES, INC.™	MATERIAL SAFETY DATA SHEET
P.O. Box 272 Crowley, LA 70527-0272 United States of America	STRATA-CLEAN™ "Rig Wash Cleaner"

Page 2

SECTION 6. EMERGENCY AND FIRST AID PROCEDURES
--

Ingestion: Do not induce vomiting. Give plenty of milk or water. Contact a physician.

Inhalation: If affected, remove to fresh air. Seek medical attention.

Skin: Wash with soap and water. Call a physician if irritation develops.

Eyes: Irrigate eyes with water for at least 15 minutes and call a physician.

SECTION 7. HEALTH HAZARDS INFORMATION
--

OSHA Permissible Exposure Limit: None established

AGGIH Threshold Limit Value: None established

Effects of Overexposure: Irritation may result upon skin contact. Irritation will occur upon eye contact and if not washed off immediately may cause corneal damage.

Listed as Carcinogen or Potential Carcinogen: No

SECTION 8. SPILL, LEAK AND DISPOSAL PRODUCERS
--

In Case of Spill or Leak: Product is a cleaning compound made to be non-toxic and non-hazardous. Although the product meets those requirements, do not allow to be spilled or sprayed on an open stream or open water.

Waste Disposal Method: Flushing and rinsing

EPA Registry Number: None

SECTION 9. PROTECTION INFORMATION
--

Respiratory Protection: N/A

Ventilation: N/A

Protective Gloves: Rubber or neoprene

Eye Protection: Face Shield

Other Protective Equipment: Synthetic apron.

SECTION 10. SPECIAL PRECAUTIONS
--

Precautions to be taken in Handling and Storing: Caution should be taken with this material so that prolonged of skin and contact with eyes does not occur.

The above data is based in tests and experience which Strata Control Services, Inc. (SCSI) believes reliable and are supplied for informational purposed only. SCSI DISCLAIMS ANY LIABILITY FOR DAMAGE OR INJURY WHICH RESULTS FROM THE ABOVE DATA AND NOTHING CONTAINED THEREIN SHALL CONSTITUTE A GUARANTEE, WARRANTY (INCLUDING WARRANTY OF MERCHANTABILITY) OR REPRESENTATION (INCLUDING FREEDOM FROM PATENT LIABILITY) BY SCSI WITH RESPECT TO THE DATA, THE PRODUCTS DESCRIBED, OR THEIR USE FOR ANY SPECIFIC PURPOSE, EVEN IF THAT PURPOSE IS KNOWN TO SCSI)



STRATA CONTROL SERVICES, INC.
P. O. Box 272 * Crowley, La 70527

1-888-656-0001 Toll Free
1-337-785-0000 Direct
1-337-785-0004 Fax:
E-Mail: stratinc@bellsouth.net
WWW: STRATACONTROL.COM

STRATA-LUBE™

STRATA LUBE™ is liquid friction reducer comprised of a blend of two superior lubricating agents, composed of a synthetic lubricant coupled with a fatty acid. **STRATA-LUBE™** is used primarily in drilling applications where problems associated with torque, drag, and the inability to slide, exist. **STRATA-LUBE™** is compatible with synthetic oils that may be present, or added to the mud system.

STRATA-LUBE™ can be used in conjunction with **STRATA-SCM®**, **STRATA-FLEX®** and/or **STRATA-VANGUARD®**, to enhance the sealing capacity of a mud system while aiding with lubricity and general filter cake quality. A coupler should be added to a mud, which contains both **STRATA-LUBE™** and **STRATA-TROL®**.

BENEFITS:

- Torque & Drag reduction.
- Sliding enhancement and efficiency, while motor drilling.
- Coating of B.H.A.
- Prevention of Bit balling.
- R.O.P. enhancement.
- Effective in Water or mud.
- Non-Hydrocarbon.
- Non-aromatic (Won't damage rubber goods)
- Non-Toxic (LC50 – 1,000,000 ppm @ 3% in generic number 7 mud)
- Non-flammable
- Non-combustible.

APPLICATION:

Systems treatments are recommended in a range of 1.0% to 3.0%. Batch pill formulations, for optimized lubricity, range from 3.0% to 8.0%, depending on the degree of problems encountered. Batch pill sweeps, for enhanced horizontal motor sliding, range from 3.0% to 15.0%, and may be mixed in the drilling mud or drill water, then swept through the well bore as necessary. Usually 1-2 drums per 50 bbls of fluid will provide a sweep of superior lubricity.

PACKAGING:

- Available in sealed 55-gallon plastic drums
- 4 drums per pallet – banded and shrink wrapped for transport safety

“THE MUD STOPS HERE!®”

STRATA CONTROL
SERVICES, INC.®

MATERIAL SAFETY DATA SHEET

P.O. Box 272
Crowley, LA 70527-0272
337-785-0000

STRATA-LUBE®

SECTION 1. MATERIAL IDENTIFICATION

CHEMICAL NAME: STRATA-LUBE®
CHEMICAL FAMILY: Organic Fatty Acid / Non Toxic Synthetic Based Lubricant
APPEARANCE: Black Viscous liquid at 25°C

HMIS RATINGS

Health	2
Flammability	1
Reactivity	0

CASRN: 70321-73-2 Fatty Acid C14-18 & C16-18 UNSATD., DISTN., RESIDUES
64742-47-8 Hydrotreated Light Distillates
7440-02-0 Nickel @ 0.1500 – 0.18

EMERGENCY PHONE NO: (337) 785-0000 Personal Protection B

EFFECTIVE: 01/2007

SUPERSEDES: 06/2005

DOT Classification: NON-HAZARDOUS / NON-REGULATED

Other DOT Information: N/A

UN Number: N/A

NA#: N/A

SARA HAZARD: Acute, Chronic (Section 311-312) Title III Section 313 - Contains 0.15-0.18% Nickel Salt K.

Other Regulatory Requirements: Listed in TSCA inventory

LC50 at 1.5% by volume in Generic Mud #7 = 1,000,000 + ppm

SECTION 2. HAZARDOUS INGREDIENTS

Hazardous Component: Nickel Salt (as a fatty acid soap)

Percent: 0.15 - 0.18 Percent by weight

PEL/TLV: See Section 4

CASRN: 744-02-0 Carcinogenic in lab animals

SECTION 3. HEALTH INFORMATION

Inhalation: Immediately remove victim to fresh air. If victim has stopped breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention immediately.

Ingestion: Do not induce vomiting.

SECTION 4. REACTIVE DATA

Stable: X **Unstable:**

Harzadous Combustion or Decomposition Products: Oxides of carbon and very high boiling organic compounds may form on combustion

Incompatibility (materials to avoid): Strong acids, bases and oxidizing agents.

Conditions to Avoid: Do not store near open flames.

Hazardous Polymerization: Will not occur

SECTION 5. FIRE AND EXPLOSION DATA

Flash Point (method used): >365°F (Cleveland Open Cup)

Auto Ignition Temperature: Not determined

Flammable Limits in Air % By volume: Lower: Not Applicable Upper: Not Applicable

Special Fire Fighting Procedures: Use water spray to absorb vapors. Wear self-contained breathing apparatus.

Extinguishing Media: Water, foam, dry chemical, or carbon dioxide.

Freezing Point: Will not freeze (May gel/thicken up in lower temperatures)

SECTION 6. EMERGENCY AND FIRST AID PROCEDURES

- Ingestion:** Contact a physician if large quantities are ingested.
- Inhalation:** Remove to fresh air. If breathing is difficult, administer oxygen and call a physician immediately.
- Skin:** Wash with soap and water.
- Eye:** Immediately flush with copious quantities of water to remove all particles. See a physician if irritation persists.

SECTION 7. HEALTH HAZARDS INFORMATION

OSHA Permissible Exposure Limit: 15 mg/m³

AGGIH Threshold Limit Value: Inhalation

Acute Effects of Overexposure:

- Ingestion:** Never give anything by mouth if victim is unconscious or having convulsions. Call a physician or poison control center immediately.
- Skin Contact:** Prolonged contact or repeated contact of nickel salts with the skin may result in an allergic reaction or in dermatitis in sensitive individuals.
- Inhalation:** Excess dust inhalation may cause difficulty in breathing.
- Skin:** May cause slight irritation.
- Eye:** May cause slight irritation.

Chronic Effects of Overexposure: Ingestion of nickel catalyst may cause an allergic reaction, nausea, vomiting or diarrhea. High doses of nickel salts cause acute gastrointestinal tract irritation, with vomiting and diarrhea.

SECTION 8. SPILL, LEAK AND DISPOSAL PRODUCERS

- In Case of Spill or Leak:** Pick-up with shovel or vacuum avoiding dusty conditions and place in suitable container for disposal.
- Waste Disposal Method:** Dispose of in accordance with all applicable federal, state, and local environmental regulation.
- EPA Registry Number:** None
- Environmental Toxicity Date:** None Known

SECTION 9. PROTECTION INFORMATION

- Respiratory Protection:** Under an appropriate respirator for nuisance particles are required by 29 CFR 1910.1043
- Ventilation:** Use local exhaust where dust concentration may exceed the OSHA TWA limit.
- Protective Gloves:** Any non-cloth gloves should be worn.
- Eye Protection:** Chemical safety goggles

SECTION 10. SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing: Avoid prolonged contact with skin. Do not get in eyes. Avoid breathing dust. Launder contaminated clothing and clean shoes thoroughly before reuse.

THE ABOVE LISTED DATA IS BASED ON TESTS AND EXPERIENCE WHICH SCSI BELIEVES TRUE AND RELIABLE AND IS SUPPLIED FOR INFORMATIONAL PURPOSES ONLY. SCSI DISCLAIMS ANY LIABILITY FOR DAMAGE OR INJURY WHICH RESULTS FROM THE ABOVE DATA AND NOTHING CONTAINED THEREIN SHALL CONSTITUTE A GUARANTEE, WARRANTY (INCLUDING WARRANTY OF MERCHANTABILITY) OR REPRESENTATION (INCLUDING FREEDOM FROM PATENT LIABILITY) BY SCSI WITH RESPECT TO THE DATA, THE PRODUCTS DESCRIBED, OR THEIR USE FOR ANY SPECIFIC PURPOSE, EVEN IF THAT PURPOSE IS KNOWN TO SCSI)



STRATA CONTROL SERVICES, INC.
P. O. Box 272 * Crowley, La 70527

1-888-656-0001 Toll Free
1-337-785-0000 Direct
1-337-785-0004 Fax:
E-Mail: stratinc@bellsouth.net
WWW: STRATACONTROL.COM

STRATA-SCM®

(Seepage Control Material)

STRATA-SCM® is a uniquely formulated, fine grade cellulose fiber product. It is designed to seal all types of permeable formations, and can be used in all types of fluid systems.

STRATA-SCM® is formulated from a combination of cellulose fibers which utilize a wide range of particle sizes and shapes. All components in **STRATA-SCM®** are compressible and deformable allowing them to conform to the shape of pore spaces and fractures. This unique trait enables **STRATA-SCM®** to form a sturdy near well-bore seal minimizing fluid invasion and effectively reducing cake build-up.

A combination of **STRATA-SCM®**, **STRATA-LCM®** (Medium) and **STRATA-TROL®** can handle problems ranging from differential sticking to lost circulation. **STRATA-SCM®** meets or exceeds all EPA and other environmental standards.

BENEFITS:

- Helps prevent differential sticking
- Seals micro-fractures
- Aids in preventing lost circulation
- Minimal rheological effect on fluids
- Compatible with all fluid systems
- Minimizes formation damage from fluid invasion
- Thermally stable
- Environmentally safe, biodegradable and non-toxic
- Non-damaging to MWD tools

APPLICATION:

STRATA-SCM® is mixed at a concentration of 8-15 ppb and swept through the well bore periodically. In the event of chronic seepage or differential sticking issues, a system treatment of 2-6 ppb is recommended. If lost circulation occurs, a pill containing 40% **STRATA-SCM®** and 60% **STRATA-LCM®** (Medium) is generally recommended. Fluid density will determine the total concentration that can be mixed. Total concentrations of 25-60 ppb are common. System maintenance can be achieved by incorporating subsequent sweeps.

PACKAGING:

- 25-pound paper bags
- 50 bags per pallet
- Palletized and Shrink-Wrapped
- Bulk bags available upon request with adequate notice

“THE MUD STOPS HERE!®”

STRATA CONTROL SERVICES, INC.®	MATERIAL SAFETY DATA SHEET
P.O. Box 272 Crowley, LA 70527-0272 United States of America	STRATA-SCM® Fine Grade Cellulose Material

SECTION 1. MATERIAL IDENTIFICATION

CHEMICAL NAME: STRATA-SCM® (Fine Grade Cellulose Material)
CHEMICAL FAMILY: Natural Blended Cellulose Fiber (Seepage Control Material)
EMERGENCY PHONE NO.: (337) 785-0000
EFFECTIVE: 06/2006
SUPERCEDES: 02/1997

SECTION 2. HAZARDOUS INGREDIENTS

STRATA-SCM® (Fine) should be handled as a nuisance particulate having a TLV of 10 mg/m³ total dust or 5 mg/m³ respirable dust and an OSHA PEL of 15 mg/m³ total dust or 5 mg/m³ respirable dust.
NFPA HAZARDS CODE
HEALTH: 0
FLAMMABILITY: 1
REACTIVE: 0

SECTION 3. PHYSICAL DATA

Appearance: Tan powder
pH (5% in water): 5.0 - 8.0
Bulk Density (lb/ft³), compacted: 39 **uncompacted:** 25

SECTION 4. REACTIVE DATA

Stable: X **Unstable:**
Harzadous Combustion or Decomposition Products: Carbon monoxide and carbon dioxide may form on combustion
Incompatibility (materials to avoid): None known
Hazardous Polymerization: Will not occur

SECTION 5. FIRE AND EXPLOSION DATA

Special Potential Hazards or Product: Spontaneous heating of similar cellulose products is known to have occurred when high humidity is present, fermentation commences, and is coupled with being stored in hot, humid areas for prolonged periods of time.
Special Fire Fighting Procedures: Based on in-house experimentation, cellulose fiber will smolder, if exposed to direct flame, but no flaming of the product should occur. No Special fire fighting procedures are required.
Extinguishing Media: Foam, dry chemical, or carbon dioxide.
Flash Point (method used): Not known
Auto Ignition Temperature: Not Known
Flammable Limits in Air % By volume: Lower: Not Known Upper: Not Known –

SECTION 6. EMERGENCY AND FIRST AID PROCEDURES

Ingestion: Drink large amounts of water.
Inhalation: Remove to fresh air.
Skin: Wash with soap and water.
Eye: Irrigate eyes with water to remove all particles

SECTION 7. HEALTH HAZARDS INFORMATION

OSHA Permissible Exposure Limit: None established
AGGIH Threshold Limit Value: None established
Other Exposure Limit Used: 10 mg/m³ total dust or 5 mg/m³ respirable dust.
Ingestion: None known
Inhalation: None known
Skin: None known
Eye: May be irritating
Chronic Effects of Overexposure: None known
Listed as Carcinogen or Potential Carcinogen: No

SECTION 8. SPILL, LEAK AND DISPOSAL PRODUCERS

In Case of Spill or Leak: Remove with shovel avoiding dusty conditions.
Waste Disposal Method: Landfill or incineration under conditions that meet all federal, state, and local regulation.
EPA Registry Number: None
In TSCA Inventory: Yes
Covered Under CERCLA or SUPERFUND Legislation: No
Environmental Toxicity Date: None Known

SECTION 9. PROTECTION INFORMATION

Respiratory Protection: Under dusty conditions, use NIOSH approved respirator for nontoxic dusts.
Ventilation: Use local exhaust where dust concentration may exceed 10 mg/m³ total dust or 5 mg/m³.
Protective Gloves: None required
Other Protective Equipment: Eye Bath
Other Control Measures: Keep dust concentration below 10 mg/m³ respirable dust.

SECTION 10. SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing: Do not get in eyes. Avoid breathing dust. Do not store oxidizing agents. Store at moderate temperatures in dry, well ventilated area.

THE ABOVE LISTED DATA IS BASED ON TESTS AND EXPERIENCE WHICH SCSi BELIEVES TRUE AND RELIABLE AND IS SUPPLIED FOR INFORMATIONAL PURPOSES ONLY. SCSi DISCLAIMS ANY LIABILITY FOR DAMAGE OR INJURY WHICH RESULTS FROM THE ABOVE DATA AND NOTHING CONTAINED THEREIN SHALL CONSTITUTE A GUARANTEE, WARRANTY (INCLUDING WARRANTY OF MERCHANTABILITY) OR REPRESENTATION (INCLUDING FREEDOM FROM PATENT LIABILITY) BY SCSi WITH RESPECT TO THE DATA, THE PRODUCTS DESCRIBED, OR THEIR USE FOR ANY SPECIFIC PURPOSE, EVEN IF THAT PURPOSE IS KNOWN TO SCSi)



STRATA CONTROL SERVICES, INC.
P. O. Box 272 * Crowley, La 70527

1-888-656-0001 Toll Free
1-337-785-0000 Direct
1-337-785-0004 Fax:
E-Mail: stratinc@bellsouth.net
WWW: STRATACONTROL.COM

STRATA-LCM®

(Lost Circulation Material)

STRATA-LCM® is primarily used for control of partial to total losses in all types of fluid systems. **STRATA-LCM®** is a unique combination of medium sized granular, stranded and fibrous cellulose materials which compliment **STRATA-SCM®** (Fine) and cover size ranges above those covered by the smaller **STRATA-SCM®** (Fine) designation. A combination of **STRATA-SCM®** (Fine) and **STRATA-LCM®** will solve loss problems ranging from seepage to total loss.

BENEFITS:

- Seals micro-fractures
- Aids in preventing lost circulation
- Minimal rheological effect on fluids
- Compatible with all fluid systems
- Minimizes formation damage from fluid invasion
- Thermally stable
- Environmentally safe, biodegradable and non-toxic
- Non-damaging to downhole tools

APPLICATION:

In cases where partial losses occur, a pill consisting of 60% **STRATA-LCM®** and 40% **STRATA-SCM®** (Fine) is generally recommended. Fluid density will determine the total concentrations (ppb) that can be mixed, but concentrations of 25-60 ppb are common. It is advisable to spot the pill across the loss zone, if known. The bit should then be pulled up into the last casing and the pill squeezed (applying 50 - 100 psi) into the formation. After circulation is regained, a **STRATA-SCM®** (Fine) / **STRATA-LCM®** sweeping program is recommended to maintain the integrity of the well bore during drilling operations.

PACKAGING:

- 25 pound paper bags
- 50 bags per pallet.
- Palletized and Shrink-Wrapped
- Bulk bags available upon request, with adequate notice.

“THE MUD STOPS HERE!®”

STRATA CONTROL SERVICES, INC.®	MATERIAL SAFETY DATA SHEET
P.O. Box 272 Crowley, LA 70527-0272 United States of America	STRATA-LCM® Medium Grade Cellulose Material

SECTION 1. MATERIAL IDENTIFICATION

Chemical Name: STRATA-LCM® (Medium Grade Cellulose Material)
Chemical Family: Natural Blended Cellulose Fiber (Lost Circulation Material)
CAS Red No.: None
Emergency Phone No.: (337) 785-0000
Effective: 06/2006
Supersedes: 02/1997

SECTION 2. HAZARDOUS INGREDIENTS

STRATA-SCM® (Fine) should be handled as a nuisance particulate having a TLV of 10 mg/m³ total dust or 5 mg/m³ respirable dust and an OSHA PEL of 15 mg/m³ total dust or 5 mg/m³ respirable dust.

NFPA HAZARDS CODE

HEALTH: 0
FLAMMABILITY: 1
REACTIVE: 0

SECTION 3. PHYSICAL DATA

Appearance: Dark brown fibrous solid.
Bulk Density (lb/ft³), compacted: 26
uncompacted: 20

SECTION 4. REACTIVE DATA

Stable: X **Unstable:**
Hazardous Combustion or Decomposition Products: Carbon monoxide and carbon dioxide may form on combustion.
Incompatibility (materials to avoid): Strong oxidizing agents.
Hazardous Polymerization: Will not occur

SECTION 5. FIRE AND EXPLOSION DATA

Special Potential Hazards or Product: Spontaneous heating of similar cellulose products is known to have occurred when high humidity is present, fermentation commences, and is coupled with being stored in hot, humid areas for prolonged periods of time.
Special Fire Fighting Procedures: Based on in-house experimentation, cellulose fiber will smolder, if exposed to direct flame, but no flaming of the product should occur. No Special fire fighting procedures are required.
Extinguishing Media: Foam, dry chemical, or carbon dioxide.
Flash Point (method used): Not known
Auto Ignition Temperature: Not Known
Flammable Limits in Air % By volume: Lower: Not Known Upper: Not Known –

SECTION 6. EMERGENCY AND FIRST AID PROCEDURES

Ingestion: Drink large amounts of water.

Inhalation: Remove to fresh air.

Skin: Wash with soap and water.

Eyes: Irrigate eyes with water to remove and dust.

SECTION 7. HEALTH HAZARDS INFORMATION

OSHA Permissible Exposure Limit: None established

AGGIH Threshold Limit Value: None established

Acute Effects of Overexposure:

Ingestion: See Section 2

Inhalation: Prolonged and continuous exposure to an excessive amount of dust of any kind may have adverse pulmonary effect in some people.

Skin: None known. **Eye:** May cause irritation as any particle material can.

Chronic Effects of Overexposure: None known

Listed as Carcinogen or Potential Carcinogen: No

SECTION 8. SPILL, LEAK AND DISPOSAL PRODUCERS

In Case of Spill or Leak: Vacuum or scoop up avoiding dusty conditions.

Waste Disposal Method: Landfill or incineration under conditions that meet all federal, state, and local regulations.

EPA Registry Number: None

In TSCA Inventory: Yes

Environmental Toxicity Date: None Known

SECTION 9. PROTECTION INFORMATION

Respiratory Protection: Under dusty conditions, use NIOSH approves respirator for nontoxic dusts.

Ventilation: Use local exhaust where dust concentration may exceed 10 mg/m³ total dust or 5 mg/m³ respirable dust.

Protective Gloves: None requires

Eye Protection: Goggles under dusty conditions.

Other Protective Equipment: Keep dust concentration below 10 mg/m³.

SECTION 10. SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing: Do not get in eyes. Avoid breathing dust. Do not store oxidizing agents. Store at moderate temperatures in dry, well ventilated area.

THE ABOVE LISTED DATA IS BASED ON TESTS AND EXPERIENCE WHICH SCSi BELIEVES TRUE AND RELIABLE AND IS SUPPLIED FOR INFORMATIONAL PURPOSES ONLY. SCSi DISCLAIMS ANY LIABILITY FOR DAMAGE OR INJURY WHICH RESULTS FROM THE ABOVE DATA AND NOTHING CONTAINED THEREIN SHALL CONSTITUTE A GUARANTEE, WARRANTY (INCLUDING WARRANTY OF MERCHANTABILITY) OR REPRESENTATION (INCLUDING FREEDOM FROM PATENT LIABILITY) BY SCSi WITH RESPECT TO THE DATA, THE PRODUCTS DESCRIBED, OR THEIR USE FOR ANY SPECIFIC PURPOSE, EVEN IF THAT PURPOSE IS KNOWN TO SCSi