1. SCOPE

1.1. This document describes and details the procedures and practices for proper cleaning of the Kreyenborg K-SWE-180 screen changer (larger size pistons) and the Kreyenburg K-SWE-125 screen changer (smaller size pistons) at the FitesaFiberweb, Simpsonville plant, SC.

2. DEFINITIONS

2.1. N/A.

3. REFERENCES

3.1. Documentation

3.1.1. N/A.

3.2. Responsibility

3.2.1. Any person trained in this work instruction.

3.3. Frequency

3.3.1. Every 28 days, during down days and as and when needed.

3.4. Materials Note: This work instruction has been prepared for the cleaning of 1 screen changer for the larger size and smaller size pistons. If planning on cleaning multiple screen changers multiply materials accordingly.

3.4.1. ½ lb bag of Crus-Aid 250 for each screen changer cleaning. (Crus-Aid 250 is available in store room part number: XXTBDXX.

3.4.2. 4 General cleaning cotton rags.

3.4.3. X2 5 feet length of CG-100 copper gauze if cleaning for each of the K-SWE-180 larger size piston screen changer cleaning. (Available on a roll in stores room part number XXTBDXX).

3.4.4. X2 3 feet length of CG-100 copper gauze if cleaning for each of the K-SWE-125 smaller size piston screen changer cleaning. (Available on a roll in stores room part number XXTBDXX).

3.4.5. MoS2 Lubricant and assembly paste.

3.4.6. X1 39 gallons trash liner (for waste disposal)

3.4.7. X1 piece of approximately 2' X 2' cardboard (this is for placing under pistons to soak up melted Crus-Aid and debris cleaned off the pistons)

3.5. Tools

3.5.1. 10mm wrench (set in order line side to equipment)

3.5.2. 30mm wrench (for use on the K-SWE-180 screen changer only, set in order line side to equipment).

3.5.3. 2" brass scrapper (set in order line side to equipment)

3.5.4. 1/2" Paint brush.

3.5.5. Pair of scissors (To cut copper CG-100 copper gauze and cardboard to length/size).

3.5.6. Wet/dry vacuum cleaner

3.6. Safety

	**WARNING:**	If you are within 2 feet of the screen changer this is considered the hot zone you are required to wear the PPEs listed below in this work instruction – **No exceptions!**

3.7. Personal Protective Equipment

3.7.1. Leather gloves

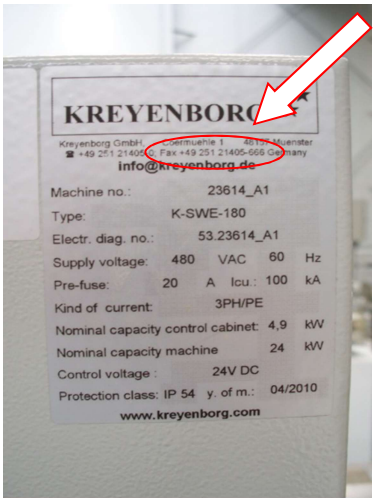
3.7.2. Cut resistant gloves (for cutting copper gauze)

3.7.3. Arm sleeve protectors

3.7.4. 4' X 6' Heat Protective Blanket

3.8. Guidelines

3.8.1. The identification of the K-SWE-180 and the K-SWE-125 can be found on the upper right hand front side of the electrical control panel door Pics. 3.8.1 and 3.8.2. As of 07/15/2011 the SC1 FitesaFiberweb, Simpsonville plant, SC has X3 K-SWE-180 and X5 K-SWE-125 Kreyenburg screen changers in service.

K-SWE-180 (Larger size pistons)	K-SWE-125 (Smaller size pistons)
	
Pic. 3.8.1.	Pic. 3.8.2.

4. ATTACHMENTS

4.1. N/A

5. APPENDIX

5.1. Crus-Aid 250 Material Safety Data Sheet.

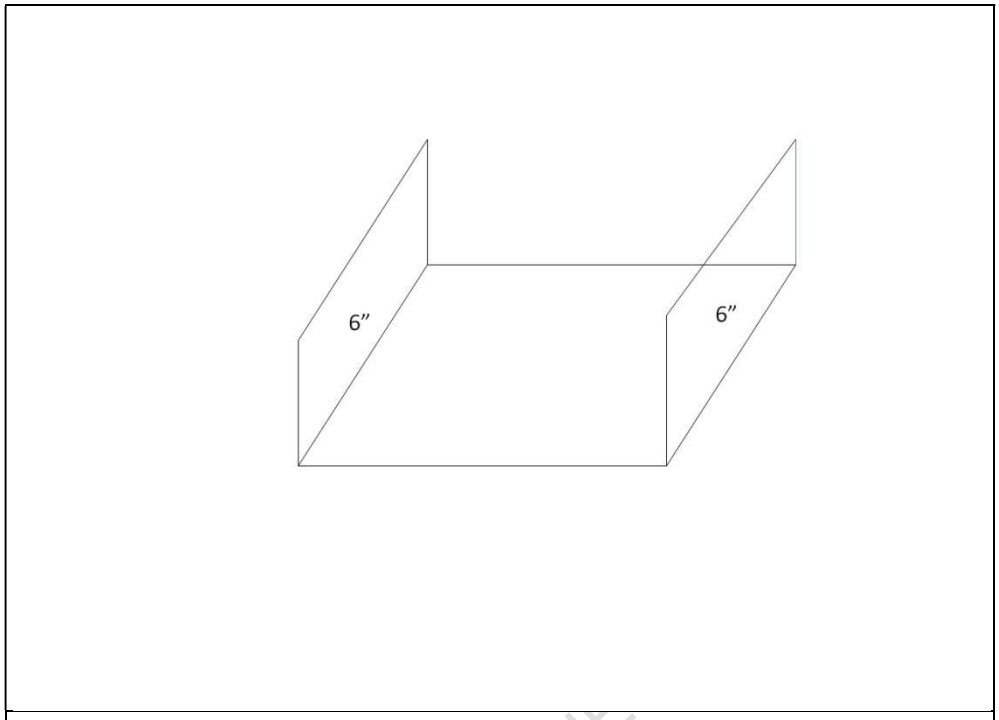
6. PROCEDURE

6.1. Preparation for cleaning.

6.1.1. Lay the heat protective blanket over extruder end to protect against burns from hot proximity surfaces in while cleaning the screen changer (Pic. 6.1.1.).

Pic. 6.1.1.

6.1.2. Fold the 2’ X 2’ cardboard to the approximate shape. Pic. 6.1.2.

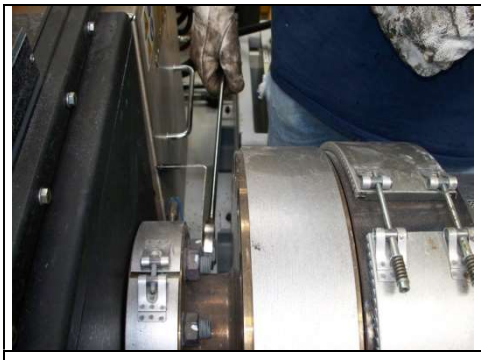


Pic 6.1.2.

6.1.3. Place the 2’ X 2’ cardboard under screen changer pistons. Pic. 6.1.3.

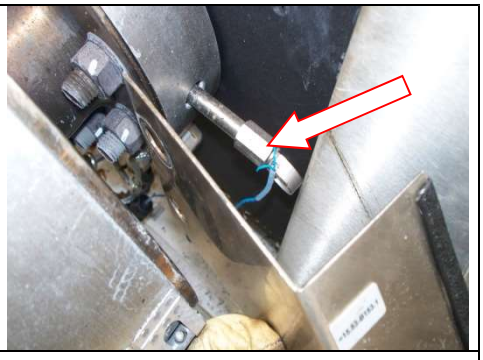
Pic. 6.1.3.

6.1.4. If cleaning the K-SWE-180, use the 30mm wrench to remove the X1 16mm nuts that hold the rupture disc sensor cover guard and remove the cover guard, set nuts and cover guard aside **Note 1:** Always place items you remove from the screen changer on top of a secure surface. This is to prevent items from falling down through the structure of the equipment and on to the product sheet and/or can cause damage to the equipment. Pics. 6.1.4.1 – 6.1.4.2. **Note 2:** Use caution not to damage the rupture disc sensor while standing on that side of the screen changer. Pic. 6.1.4.3.



Pic 6.1.4.1

Pic 6.1.4.2.



Pic. 6.1.4.3.

6.1.5. Make sure that both A and B pistons are in the operating position – both in the back position.

6.1.6. Using the 10mm wrench loosen the X4 6mm guards securing nuts and remove the covers from the rear left and right hydraulic end of screen changer while in operating position. Pics. 6.1.6.1. – 6.1.6.2. – 6.1.6.3.

Pic 6.1.6.1

Pic. 6.1.6.2.

Pic. 6.1.6.3.

6.1.7. Using the 2” brass scrapper remove all loose carbonized plastic build up from the top (A piston) and bottom (B piston) screen pistons, end of casings and joining pressure plates. Pics 6.1.7.1. – 6.1.7.2. – 6.1.7.3. **Note:** Use caution not to damage the rupture disc sensor while standing on that side of the screen changer. Pic. 6.1.4.3.

Pic 6.1.7.1

Pic. 6.1.7.2.

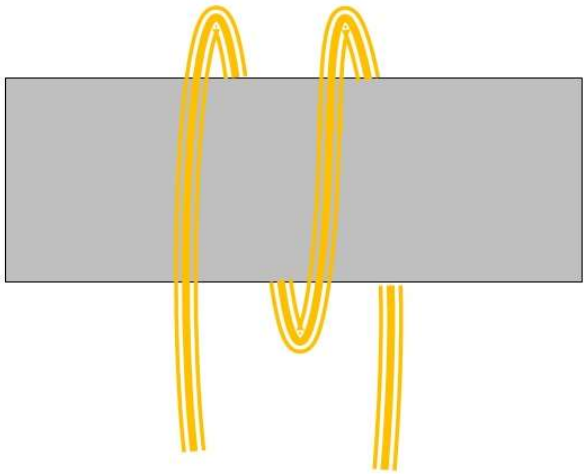
Pic. 6.1.7.3.

6.1.8. While “HOT” sprinkle on the Crus-Aid 250 along the length of the top piston and allow the Crus-Aid 250 to melt and begin to loosen the carbonized polymer from the top screen piston for about 5 minutes. Pic. 6.1.8. **Note:** if two people are assigned to this work instruction one person can work on the top (A piston) and the other person can work on the bottom (B piston) at the same time working from each side of the screen changer.

Pic. 6.1.8.

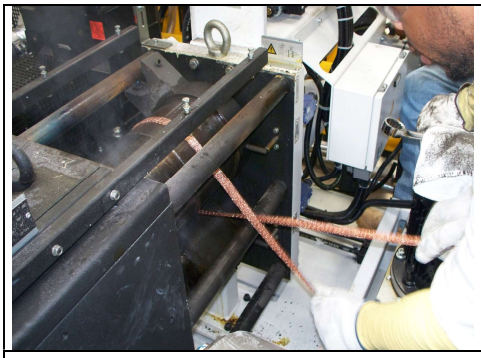
6.2. Cleaning the pistons.

6.2.1. Using the appropriate length of the CG-100 copper gauze for the screen changer being cleaned wrap the copper gauze X 2 times around the piston to be cleaned. Pic. 6.2.1.



Pic 6.2.1.

6.2.2. Sprinkle on more Crus-Aid 250 to the top screen piston and wrap some copper gauzes around the screen piston and pull it back and forth one end of the copper gauzes then the other also move it side to side to thoroughly clean the length of the top screen piston of carbonized build up. Pics. 6.2.2.1. – 6.2.2.2. – 6.2.2.3.

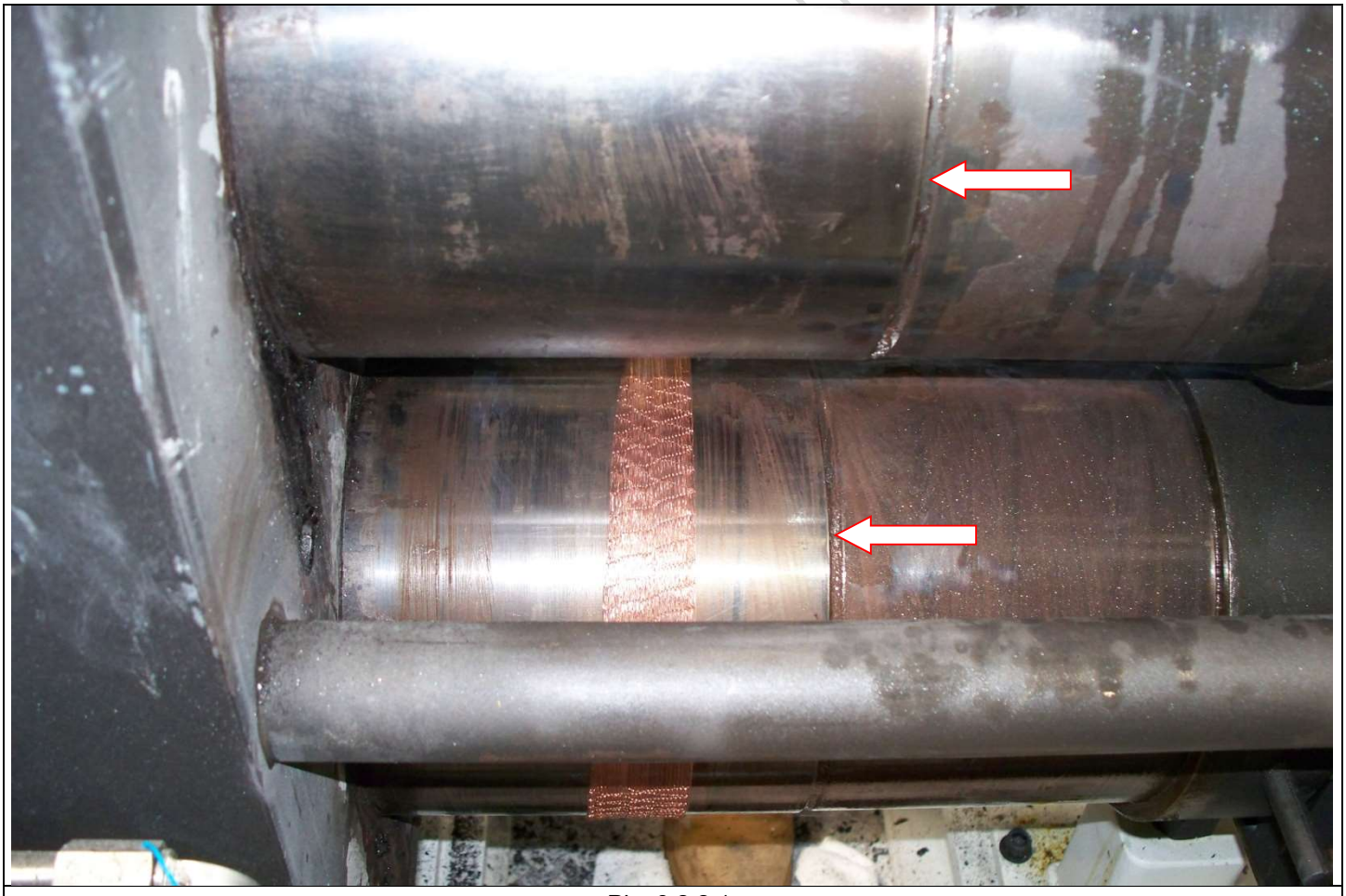


Pic 6.2.2.1.

Pic. 6.2.2.2.

Pic. 6.2.2.3.

6.2.2.1. Ensure that the grooves in the top and bottom pistons are thoroughly cleaned of carbonized build up. Pic. 6.2.2.1.



Pic. 6.2.2.1.

6.2.3. Wipe off all excess debris using the cotton rags. Pic. 6.2.3.

Pic 6.2.3.

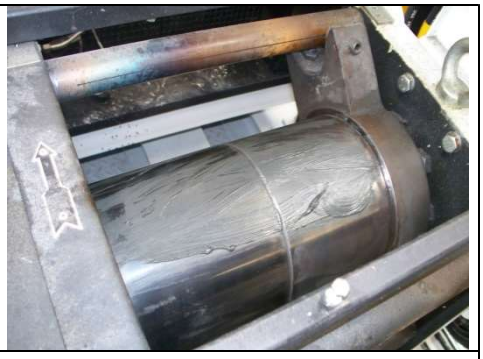
6.2.4. Repeat the same procedure if necessary until the piston is clean. Pic. 6.2.4.

Pic 6.2.4.

6.2.5. After cleaning both screen pistons lubricate the entire surface area of both screen pistons with a thin coat of the MoS2 lubricant and assembly paste using the 1” paint brush While pistons are hot

the lubricant spreads very well. **Note:** it is not necessary to apply an excess amount of Mos2 lubricant and assembly paste. Thin coating is preferable to a thick coating. Pics. 6.2.5.1. – 6.2.5.2.

Pic 6.2.5.1.



Pic. 6.2.5.2.

6.2.6. Clean debris from guards. Pic. 6.2.6.

Pic 6.2.6.

6.2.7. Reinstall left and right rear safety covers to the hydraulic end of screen changer and tighten the X4 10mm nuts.

6.2.8. Replace the rupture disc sensor cover guard securing it with the X1 16mm nuts and tighten using the 30mm wrench.

6.2.9. If needed, one at a time while each screen bolt is in screen change position clean screen changer same as hydraulic end as listed above for the pistons.

6.3. Clean up.

6.3.1. Remove the cardboard under the pistons and discard in the 39 gallons trash liner.

6.3.2. Vacuum the entire area using the wet/dry vacuum cleaner. Pics. 6.3.2.1. – 6.3.2.2.

Pic 6.3.2.1.

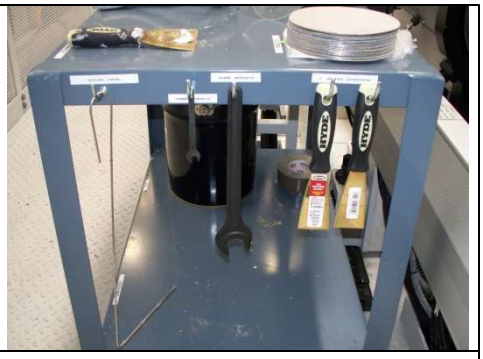
Pic. 6.3.2.2.

6.3.3. Discard dirty cotton rags, used copper gauze, cardboard and debris in 39 gallons trash liner.

6.3.4. Discard 39 gallons trash liner in dumpster.

6.3.5. Set back in order all tools and PPEs. Pics. 6.3.5.1 – 6.3.5.2.

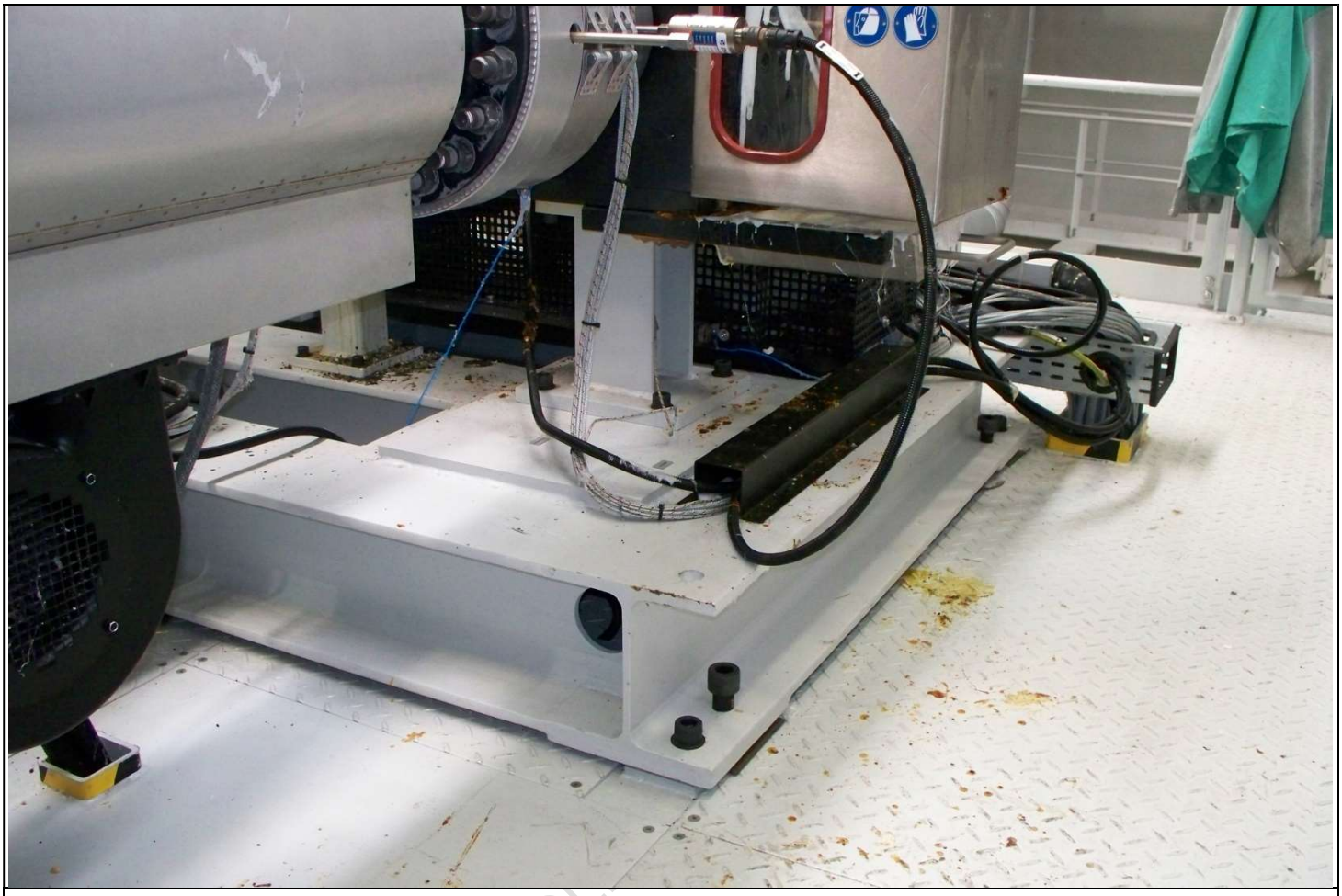
Pic 6.3.5.1.



Pic. 6.3.5.2.

6.3.6. Make sure the work area is clean after work is complete.

Unacceptable 5S Conditions



Acceptable 5S Conditions

6.3.7. Work instruction complete.

Attachment 1: N/A

Appendix 1: Crus-Aid 250 Material Safety Data Sheet

Material Safety Data Sheet

In Compliance with 29 CFR 1910.1200

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name: Crus-Aid 250

Supplier: Crus-Aid Industries, Inc., P.O. Box 267, Keller, Texas 76244

Synonym: Octadecanoic Acid

Chemical Family: Aliphatic Carboxylic Acid
CAS Reg. No.: 57-11-4
SARA Hazard: None noted (Section 311/312; Title III Section 313 - not listed.

SECTION 2 - INGREDIENTS AND HAZARD CLASSIFICATION

COMPOSITION	%	PEL/TLV	HAZARD
CAS # (57-11-4)	63	None/None	None Noted
CAS # (57-10-3)	28	None/None	None Noted

Section 3 - Health Information

Inhalation: No deaths to rats exposed to concentrated Decanoic Acid vapor for eight hours. Concentrated Decanoic Acid vapors are irritating and can cause coughing.

Ingestion: LD50:>10 G/KG (albino rats) (Stearic and Palmitic Acids)
LD50:3.3 G?KG (rat) (Mixed isomers of Decanoic Acid)

Eye Contact: Stearic-Palmitic Acid mixtures produced only mile conjuncitival erythema in two of six rabbits at the 24 and 48-hour readings. No other signs of irritation were observed. All signs of irritation had subsided completely at the 72-hour reading. Decanoic Acid caused severe corneal burns when applied as a 5% solution (unspecified volume) to rabbit eyes.

Skin Contact: For Stearic-Palmitic Acid mixtures: No signs of irritation or corrosivity at either intact or abraded sites on albino rabbit. Primary irritation index was 0.75 MG of Stearic Acid applied intermittently to human skin over a three-day period resulted in mild irritation. 500 MG of Stearic Acid applied to rabbit skin over s 24-hour period resulted in moderated irritation. For Decanoic Acid: LD50:1.6-5.0 G/KG (rabbit) (Decanoic Acit). A 1% solution of Decanoic Acid in petrolatum caused no irritation after 48-hours of closed patch test and produced no sensitization reactions.

Section 4 - Occupational Exposure Limits

PEL: No OSHA PEL

TLV: No ACGIH TLV

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Section 5 - Emergency First Aid Procedure

Ingestion: Call a Physician or Poison Control Center promptly.

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

Eye Contact: Immediately flush eyes with plenty of cool water for at least 15 minutes. Do not let victim rub eyes. Get medical attention immediately.

Skin Contact: Wash affected area.

Section 6 - Physical Data

Boiling Point:	721 DEG F (383 DEG C) (Approximately)
Melting Point:	57 - 65 DEG C
Vapor Pressure:	10 MM Hg Pressure at 225 DEG C (Approximately)
Specific Gravity:	0.85 at 75/25 DEG C
Solubility in Water:	Insoluble
Appearance and Color:	White, waxy solid with a fatty acid odor.

Section 7 - Fire and Explosion Hazards

Flash Point and Method Used:		385 DEG F C.O.C.
Flammable Limits in Air, % by Vol. Lower:		Not Established.
Flammable Limits in Air, % by Vol. Upper:		Not Established.
NFPA Rating: Health: (1)	**Fire**: (1)	**Reactivity:** (0)
HMIS Rating: Health: (1)	**Fire:** (1)	**Reactivity:** (0)

Special Fire Fighting Procedures and Precautions:
(INDIVIDUALS SHOULD PERFORM ONLY THOSE FIRE PROCEDURES FOR WHICH THEY HAVE BEEN TRAINED.) Water or foam may cause frothing when applied to flammable liquids having flash points above 212 DEG F (100 DEG C). The remark is included only as a precaution and does not mean that water or foam should not or could not be used in fighting fires in such liquids. The frothing may be quite violent and could endanger the life of the firefighter particularly when solid streams are directed into the hot burning liquid. On the other hand, water spray carefully applied has frequently been used with success in extinguishing such fires by causing the frothing to occur only on the surface and this foaming action blankets and extinguishes the fire. (NFPA 324M-1984)

Unusual Fire And Explosion Hazards:
Firefighters should wear self-contained breathing apparatus in the positive-pressure mode with a full facepiece when there is a possibility of exposure to smoke, fumes or hazardous decomposition products. Stearic Acid powder is a flammable dust. Concentrations as low as 0.017 OZ/CU FT in air can burn and if ignited in a confined space can explode.

Section 8 - Reactivity

Stability:	Generally Stable.
Hazarous Polymerizatoiin:	None Likely
Conditions and Materials to Avoid:	Avoid contact with strong oxidizing agents, strong alkalies and Open Flames
Hazardous Decomposition Products:	Decomposition may produce carbon monoxide and carbon dioxide.

Section 9 - Employee Protection

Control Measures:
Handle in the presence of adequate ventilation.

Respiratory Protection:
Recommended exposure limits (i.e., OSHA-PEL and ACGIH-TLV) have not been established for this material. Whether there is a need for respiratory protection under your conditions of handling of this material should be evaluated by a qualified health specialist.

Protective Clothing:
Wear gloves and protective clothing which are impervious to the product for the duration of anticipated exposure if there is potential for prolonged or repeated skin contact.

Eye Protection:
Wear safety glasses meeting the specifications of ANSI Standard Z87.1 where no contact with the eye is anticipated. Chemical safety goggles meeting the specifications of ANSI Standard Z87.1 should be worn whenever there is the possibility of splashing or other contract with the eyes.

Section 10 - Environmental Protection

Environmental Precautions:
Avoid uncontrolled releases of this material. Where spills are possible, a comprehensive spill response plan should be developed and implemented.

Spill or Leak Precautions:
Wear appropriate respiratory protection and protective clothing as described in Section 9. Contain spilled material. Transfer to secure container. Where necessary, collect using absorbent media. In the event of an uncontrolled release of this material, the user should determine if the release is reportable under applicable laws and regulation.

Waste Disposal:
All recovered material should be packaged, labeled, transported, and disposed or reclaimed in conformance with applicable laws and regulations and in conformance with good engineering practices. Avoid landfilling of liquids. reclaim where possible.

Section 11 - Regulation Controls

Department of Transportation:
DOT Classification: Not Regulated
DOT Proper Shipping Name:
Other DOT Information:

Other Regulatory Requirements:
Listed in TSCA Inventory.

CERCLA Hazardous Materials:
None Noted

Section 12 - Precautions: Handling, Storage and Usage

No special precautions necessary.
Keep in closed or covered container and do not store near heat or open flames to preserver the color and odor characteristics of this product.

VERSION CONTROL			
Reason for Change	**Change Made By**	**Job Title**	**Date**
Original Document (author)	Fred Webberking	Reliability CI Manager	01/30/2013