4015. MATERIAL SAFETY DATA SHEET LF01018U [redacted]
Simulated earwax

Degussa Corporation
Performance Products Group

24 Hour Emergency Number: 703-527-3887
24 Hour CHEMTREC Number: 800-424-9300

Approval Date: April 12, 2001 Cust: 41673002 Page: 1
Print Date: March 23, 2002 MSDS Number: DHC1003 01-36

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name : AEROSIL® 200

Supplier/Manufacturer:
Degussa Corporation
379 Interpace Parkway
Building C
P.O. Box 677
Parsippany, NJ 07054-0677
Product Information: 800-334-8772

2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients

	CAS Number	% (Wt./Wt.)
Silicon dioxide, amorphous, fumed, crystalline free	112945-52-5	100

See Section 8 for Exposure Guidelines

OSHA Regulatory Status::
This material is classified as hazardous under OSHA regulations.

3. HAZARDS IDENTIFICATION

*** EMERGENCY OVERVIEW ***:
Dust may be irritating to respiratory tract.

POTENTIAL HEALTH EFFECTS

Eye Contact:
Possibly irritating.

Skin Contact:
May cause drying of the skin.

Inhalation:
Temporary discomfort to upper respiratory tract may occur due to mechanical irritation when exposures are above the occupational exposure limit.

Ingestion:
No hazard expected in normal use.

3. HAZARDS IDENTIFICATION (CONTINUED)

General:
Medical conditions which may be aggravated by exposure to this product include: Conjunctivitis of the eye, dermatitis of the skin, asthma and respiratory diseases.

4. FIRST AID MEASURES

FIRST AID

Eye Contact:
In case of contact, immediately flush eyes with plenty of water. Obtain medical attention if irritation develops.

Skin Contact:
Flush skin with plenty of water. Remove contaminated clothing. Obtain medical attention if irritation develops or persists.

Inhalation:
If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If unconscious, evaluate the need for artificial respiration. Get immediate medical attention.

Ingestion:
Not applicable; not an expected route of exposure.

5. FIRE FIGHTING MEASURES

Flash Point: Not Determined
Flash Point Method: Not determined
Lower Explosive Limit: Not determined
Upper Explosive Limit: Not determined

OSHA Flammability Classification: None
Autoignition Temperature: Not Determined

Other Flammable Properties:
Material will not burn.

Extinguishing Media:
Use water spray or fog, foam, dry chemical or CO_2.

Fire Fighting Procedures:
Fire fighters must wear positive pressure self-contained breathing apparatus and full protective clothing.

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6. ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled:
Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil. Use personal protective equipment as described in Section 8. Shovel spilled material into a suitable container.

7. HANDLING AND STORAGE

Handling:
Wash thoroughly after handling. Use with adequate ventilation. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Take precautionary measures against static discharges.

Storage:
Store in a cool, dry place. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits

	Value	Limit	Reference
Silicon dioxide, amorphous, fumed, crystalline free	6 mg/m3	TWA	OSHA
	10 mg/m3	TWA	ACGIH
	N.E.	STEL	OSHA/ACGIH

Engineering Controls:
Use adequate ventilation.

Respiratory Protection:
A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

Eye Protection:
Wear safety glasses with side shields.

Skin Protection:
Use impermeable gloves.

Other Protective Equipment:
A safety shower and eye wash fountain should be readily available. To identify additional Personal Protective Equipment requirements, it is recommended that a hazard assessment be conducted before using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Vapor Pressure	:	Not available
Vapor Density (Air = 1)	:	Not applicable
Specific Gravity	:	~2.2g/ml
Boiling Point	:	Not available
Melting Point	:	1700°C
pH @ 40.0%	:	3.7-4.7susp
Evaporation Rate	:	Not applicable
Molecular Weight	:	60
Molecular Formula	:	SiO2
Solubility In Water	:	0.15 g/l

Other Properties:
White. Powder. Odorless.

10. STABILITY AND REACTIVITY

Stability:
This product is stable under normal storage conditions.

Hazardous Polymerization:
Will not occur under normal conditions.

Conditions To Avoid:
Operations that create dust. Decomposition temperature: above 2000°C.

Incompatibility With Other Materials:
Not Applicable.

Hazardous Decomposition Products:
No known hazardous decomposition products.

11. TOXICOLOGICAL INFORMATION

Product Toxicological Information:

Oral LD50 (rat): >10000 mg/kg
Dermal LD50 (rabbit)>5000 mg/kg

12. ECOLOGICAL INFORMATION

No product ecological data available

13. DISPOSAL CONSIDERATIONS

Disposal Method:
Waste must be disposed of in accordance with federal, state, provincial and local regulations.

14. TRANSPORT INFORMATION

U.S. DOT Transport Information

Not regulated

15. REGULATORY INFORMATION

This product contains the following non-hazardous components:

No non-hazardous components exist

U.S. Federal Regulations

OSHA:
This document has been prepared in accordance with the MSDS requirements of the OSHA Hazard Communication Standard.

Clean Air Act Section 112:
This product contains the following components present at or above the OSHA de minimus level and listed as Hazardous Air Pollutants:

None

This product contains the following components present at or above the OSHA de minimus level and listed as Extremely Hazardous Air Pollutants:

None

SARA Section 302:
This product contains the following components listed as Extremely Hazardous Substances:

None

SARA Section 311/312:
Hazard Classifications: None

SARA Section 313:
This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

None

TSCA:

15. REGULATORY INFORMATION (CONTINUED)

This product or its components are listed in or exempt from the TSCA inventory requirements.

This product contains the following non-proprietary substances subject to export notification under Section 12(b) of TSCA:

None

Other U.S. Federal Regulation Information:
A new CAS number, 112945-52-5, has been assigned to Amorphous Fumed Silica to distinguish it from crystalline silica. According to the EPA this product meets TSCA requirements and is listed on the TSCA Inventory as Silica, CAS # 7631-86-9.

State Regulations

New Jersey:
This product contains the following non-hazardous components subject to disclosure under New Jersey Right-To-Know legislation:

None

Pennsylvania:
This product contains the following non-hazardous components subject to disclosure under Pennsylvania Right-To-Know legislation:

None

Massachusetts:
This product contains the following substances on the Massachusetts Substance List:

None

California (Proposition 65):
This product contains the following substances known to the State of California to cause cancer:

None

This product contains the following substances known to the State of California to cause adverse reproductive effects:

None

International Regulations
Summary of International Chemical Inventory Status

Canada	On inventory
Europe	On inventory
South Korea	On inventory
Australia	On inventory

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16. OTHER INFORMATION

HMIS Ratings: Health - 1 Flammability - 0 Reactivity - 0
Ratings Key: 4 = Highest hazard, 0 = Lowest hazard,
* = Chronic health hazard, N = No rating for powders
NFPA Ratings: Health - 1 Flammability - 0 Reactivity - 0
Ratings Key: 4 = Highest hazard, 0 = Lowest hazard, N = No rating for powders

Key to abbreviations used:

NA	Not applicable
NAV	Not available
NE	Not established
NJTSR No.	New Jersey Trade Secret Registry Number
®	Registered Trademark.
TM	Trademark.

Revision Summary:
The following MSDS sections were revised since the previous version July 29, 1999:

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[redacted]

MATERIAL SAFETY DATA SHEET
FOR PLASTISOLS

Preparation Date: 10/13/88

MANUFACTURER:

LAKESIDE PLASTICS INC
450 W. 33rd Ave
P.O. Box 2384
Oshkosh, WI 54903

FOR INFORMATION PHONE

(414) 235-3620

This MSDS is for the purpose of providing your company and its employees, with current health and safety information regarding this material. Please forward this information to your company safety director or other individual in charge of compliance with current RIGHT TO KNOW REGULATIONS. This information should be made available to any employee who requests it.

SECTION I: PRODUCT IDENTIFICATION

PRODUCT NUMBER: C-157
PRODUCT NAME: C-157 Clear Plastisol
PRODUCT CLASS: VINYL COMPOUND - PLASTISOL

SECTION II: HAZARDOUS INGREDIENTS

INGREDIENT	WEIGHT PERCENT	OCCUPATIONAL EXPOSURE LIMITS TLV	PEL	VAPOR PRESSURE mmHg @ 20 C

NOT APPLICABLE FOR THIS COMPOUND

SECTION III: PHYSICAL DATA

BOILING RANGE:	None	
VAPOR DENSITY:	Heavier than air: X	Lighter than air:
EVAPORATION RATE:	Faster than Ether:	Slower than Ether: X
% VOLATILE by WEIGHT:	< 0.5 %	
WEIGHT/GALLON:	Heavier than Water	

SECTION IV: FIRE AND EXPLOSION HAZARD DATA

OSHA FLAMMABILITY CLASSIFICATION: Not Regulated
FLASH POINT: None

EXTINGUISHING MEDIA:
Foam: X "Alcohol" Foam: CO_2: X Dry Chemical: X Water Fog:
Other:

UNUSUAL FIRE HAZARDS:
HCl, Carbon Monoxide, and Carbon Dioxide are products of burning this material.
Closed containers may explode when exposed to extreme heat.

SPECIAL FIREFIGHTING PROCEDURES:
A self-contained breathing apparatus should be worn by firefighters.

SECTION V: HEALTH HAZARD DATA

EFFECTS OF OVER EXPOSURE:
No immediate effects. Fumes given off during processing may irritate skin and eyes. By products of degradation are irritants of eyes, skin and lungs.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE:
Some individuals may experience skin sensitization or allergic reactions.

PRIMARY ROUTES OF ENTRY: Dermal: X Inhalation: X Ingestion: X

EMERGENCY AND FIRST AID PROCEDURES:
Eye and skin contact- Remove excess material with cloth or other absorbent. Then flush with copious amounts of water.
Inhalation- Remove to fresh air.

SECTION VI: REACTIVITY DATA

STABILITY Unstable: Stable: X

HAZARDOUS POLYMERIZATION May Occur: Will Not Occur: X

HAZARDOUS DECOMPOSITION PRODUCTS:
Hydrogen Chloride, Carbon Monoxide, and Carbon Dioxide at elevated temperatures.

CONDITIONS TO AVOID: Prolonged exposure to temperatures above 300 F. High heat will cause thermal decomposition.

INCOMPATIBLE MATERIALS TO AVOID:
Oxidizing materials.

SECTION VII: SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Contain spill. Use absorbant solid or collect liquid to return to storage or to approved disposal site. Prevent liquid from entering sewers and watercourses.

WASTE DISPOSAL:
Dispose of in accorance with Federal, State, and Local Regulations.

SECTION VIII: SAFE HANDLING AND USE INFORMATION

RESIRATORY PROTECTION:
Not normally needed with adequate ventilation. Use NIOSH approved equipment if airborne exposure is excessive.

VENTILATION:
Sufficient to remove processing vapors.

PROTECTIVE GLOVES:
Yes, to prevent uneccessary contact. Use vinyl or neoprene gloves.

EYE PROTECTION:
Safety glasses should be worn.

SECTION VIII CONTINUED

OTHER PROTECTIVE EQUIPMENT:

Eye wash should be available. Other protective clothing if skin contact is likely.

HYGENIC PRACTICES:

Wash hands before eating, smoking or using washroom. Avoid breathing processing fumes. Wash clothing, if contaminated, before reuse.

SECTION IX: SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Do not store above 100 F, in direct sun, or near heat source. Avoid eye, skin and clothing contact.

FOR INDUSTRIAL USE ONLY.

OTHER PRECAUTIONS:

Shipping containers should not be pressurized to facilitate emptying. Do not apply flames to or weld empty containers. Dispose of containers according to Federal, State and Local Regulations.

This information relates to the specific material designated and may not be valid for such material used in combination with any other material or in any process. Such information is, to the best of our knowledge and belief, accurate and reliable as of the date compiled, however no representation, warranty or guarantee is made as to its accurracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information, nor do we offer any warranty against patent infringement.

[redacted]

POLYONE CORPORATION

MATERIAL SAFETY DATA SHEET

BROWN PIGMENT

1. PRODUCT AND COMPANY IDENTIFICATION

POLYONE CORPORATION
2700 Papin Street, St. Louis, MO 63103

NON-EMERGENCY TELEPHONE	:	Product Stewardship, (314) 771-1800
Emergency telephone number	:	**CHEMTREC 1-800-424-9300 (24hrs for spill, leak, fire, exposure or accident).**
Product name	:	BROWN PIGMENT
Product code	:	FO00006112PA
Chemical Name	:	Mixture
CAS-No.	:	Mixture
Product Use	:	Industrial Applications

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Components	CAS-No.	Weight %
Carbon black	1333-86-4	0.1 - 1
Titanium dioxide	13463-67-7	5 - 10
Iron oxide	1309-37-1	10 - 30

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

This mixture has not been evaluated as a whole for health effects. Information provided on health effects of this product is based on the individual components. However, some vapors or contaminants may be released upon heating and the end-user (fabricator) must take the necessary precautions (mechanical ventilation, respiratory protection, etc.) to protect employees from exposure. See sections 8 and 11 for special precautions.

POTENTIAL HEALTH EFFECTS

Routes of Exposure: : Inhalation, Skin contact, Ingestion

Acute exposure

Inhalation	:	Inhalation of airborne droplets may cause irritation of the respiratory tract.
Ingestion	:	May be harmful if swallowed.
Eyes	:	May cause eye/skin irritation.
Skin	:	Experience shows no unusual dermatitis hazard from routine handling.

Chronic exposure : Refer to Section 11 for Toxicological Information.

Medical Conditions Aggravated by Exposure:	:	None known.

4. FIRST AID MEASURES

Inhalation	:	Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. When symptoms persist or in all cases of doubt seek medical advice.
Ingestion	:	Do not induce vomiting without medical advice. Seek medical attention if necessary.
Eyes	:	Rinse immediately with plenty of water for at least 15 minutes. If eye irritation persists, seek medical attention.
Skin	:	Wash off with soap and plenty of water. If skin irritation persists seek medical attention.

5. FIRE-FIGHTING MEASURES

Flash point	:	No data available.
Flammable Limits		
Upper explosion limit	:	No data available.
Lower explosion limit	:	No data available.
Autoignition temperature	:	Not applicable.
Suitable extinguishing media	:	Carbon dioxide blanket, dry powder, foam, Water spray.
Special Fire Fighting Procedures	:	Fullface self-contained breathing apparatus (SCBA) used in positive pressure mode should be worn to prevent inhalation of airborne contaminants.
Unusual Fire/Explosion Hazards	:	None

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Wear appropriate personal protection during cleanup, such as impervious gloves, boots and coveralls.
Environmental precautions	:	Should not be released into the environment. The product should not be allowed to enter drains, water courses or the soil.
Methods for cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Package all material in appropriate container for disposal. Refer to Section 13 of this MSDS for proper disposal methods.

7. HANDLING AND STORAGE

Handling	:	Heat only in areas with appropriate exhaust ventilation. Prolonged

heating may result in product degradation.

Storage : Keep containers dry and tightly closed to avoid moisture absorption and contamination. Store in a cool dry place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory protection : Under normal handling conditions a respirator may not be required.

Eye/Face Protection : Safety glasses with side-shields.

Hand protection : Protective gloves.

Skin and body protection : Long sleeved clothing.

Additional Protective Measures : Safety shoes.

General Hygiene Considerations : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Engineering measures : Heat only in areas with appropriate exhaust ventilation. Provide appropriate exhaust ventilation at machinery.

Exposure limit(s)

Components	Value	Exposure time	Exposure type	List:
Carbon black	3.5 mg/m3	Time Weighted Average (TWA):	Total dust. as carbon black	ACGIH
Carbon black	3.5 mg/m3	PEL:	Total dust. as carbon black	OSHA Z1
Iron oxide	5 mg/m3	Time Weighted Average (TWA):	Dust and fume. as Fe	ACGIH
Titanium dioxide	10 mg/m3	Time Weighted Average (TWA):	Dust.	ACGIH
Titanium dioxide	15 mg/m3	PEL:	Total dust.	OSHA Z1

9. PHYSICAL AND CHEMICAL PROPERTIES

Form : Liquid
Appearance : Liquid, Viscous liquid dispersion
Color : BROWN
Odor : Very faint
Melting point/range : Not applicable
Boiling Point: : Not applicable
Water solubility : Immiscible

Evaporation rate : Not established
Specific Gravity : Not determined
Bulk density : Not applicable.
Vapor pressure : Not determined
Vapor density : Heavier than air.
pH : Not determined

10. STABILITY AND REACTIVITY

Stability	:	Stable.
Hazardous Polymerization	:	Will not occur.
Conditions to avoid	:	Keep away from oxidizing agents and open flame. To avoid thermal decomposition, do not overheat.
Incompatible Materials	:	Incompatible with strong acids and oxidizing agents.
Hazardous decomposition products	:	Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), other hazardous materials, and smoke are all possible.

11. TOXICOLOGICAL INFORMATION

This mixture has not been evaluated as a whole for health effects. Exposure effects listed are based on existing health data for the individual components which comprise the mixture.

Toxicity Overview
This product contains the following components which in their pure form have the following characteristics:

CAS-No.	Chemical Name	Effect	Target Organ
1333-86-4	Carbon black	Systemic effects	Eyes, Respiratory system.
13463-67-7	Titanium dioxide	Systemic effects	Respiratory system.
1309-37-1	Iron oxide	Systemic effects	Respiratory system.

LC50 / LD50
This product contains the following components which in their pure form have the following toxicity data:

CAS-No.	Chemical Name	Route	Value	Species
1333-86-4	Carbon black	Oral LD50 Dermal LD50	> 15,400 mg/kg > 3 gm/kg	rat rabbit

Carcinogenicity:
This product contains the following components which in their pure form have the following carcinogenicity data:

CAS-No.	Chemical Name	OSHA	IARC	NTP
1333-86-4	Carbon black	no	2B	no

IARC Carcinogen Classifications:
1 - The component is carcinogenic to humans.
2A - The component is probably carcinogenic to humans.
2B - The component is possibly carcinogenic to humans.

NTP Carcinogen Classifications:
1 - The component is known to be a human carcinogen.
2 - The component is reasonably anticipated to be a human carcinogen.

Additional Health Hazard Information:

Carbon black 1333-86-4 Carcinogenicity: Many inhalation toxicologists believe that the tumor response observed in the referenced rat studies is species specific and does not correlate to human exposure. However, the IARC evaluation in Monograph Volume 65, issued in April 1996 concluded that, "There is sufficient evidence in experimental animals for the carcinogenicity of carbon black". Based on this evaluation, along with their evaluation of inadequate evidence of carcinogenicity in humans, IARC's overall evaluation is that "Carbon Black is possibly carcinogenic to humans (Group 2B). Carbon Black has not been listed as a carcinogen by the National Toxicology Program (NTP) or the Occupational Safety and Health Administration (OSHA). The National Institute of Occupational Safety and Health (NIOSH) criteria document on carbon black recommends that only carbon black with PAH (polynuclear aromatic hydrocarbon) levels greater than 0.1% be considered suspect carcinogens.

12. ECOLOGICAL INFORMATION

Persistence and degradability	:	Not readily biodegradable.
Environmental Toxicity	:	Environmental toxicity has not been established for this mixture as a whole.
Bioaccumulation Potential	:	No data available.
Additional advice	:	No data available.

13. DISPOSAL CONSIDERATIONS

Product	:	Where possible, recycling is preferred to disposal or incineration. The generator of waste material has the responsibility for proper waste classification, transportation and disposal in accordance with applicable federal, state/provincial and local regulations.
Contaminated packaging	:	Recycling is preferred when possible. The generator of waste material has the responsibility for proper waste classification, transportation and disposal in accordance with applicable federal, state/provincial and local regulations.

14. TRANSPORT INFORMATION

U.S. DOT Classification	:	Refer to specific regulation.
ICAO/IATA	:	Refer to specific regulation.
IMO / IMDG	:	Refer to specific regulation.

15. REGULATORY INFORMATION

US Regulations:

OSHA Status	:	Classified as hazardous based on components.
TSCA Status	:	All components of this product are listed on or exempt from the

TSCA Inventory.

US. EPA CERCLA Hazardous Substances (40 CFR 302)

Not applicable

California Proposition 65 : This product does not contain a substance listed by California Prop 65.

SARA Title III Section 302 Extremely Hazardous Substance

Not applicable

SARA Title III Section 313 Toxic Chemicals:

Not applicable

Canadian Regulations:

WHMIS Classification : D2A

WHMIS Ingredient Disclosure List

CAS-No.
1309-37-1

DSL : All components of this product are on the Canadian Domestic Substances List (DSL) or are exempt.

National Inventories:

Australia AICS : Listed.

China IECS : Listed.

Europe EINECS : Not determined.

Japan ENCS : Not determined.

Korea KECI : Not determined.

Philippines PICCS : Listed.

16. OTHER INFORMATION

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.