

MATERIAL SAFETY 3M
 DATA SHEET 3M Center
 St. Paul, Minnesota
 55144-1000
 1-800-364-3577 or (651) 737-6501 (24 hours)

Copyright, 1999, Minnesota Mining and Manufacturing Company.
 All rights reserved. Copying and/or downloading of this
 information for the purpose of properly utilizing 3M products
 is allowed provided that:

- 1) the information is copied in full with no changes unless
 prior agreement is obtained from 3M, and
- 2) neither the copy nor the original is resold or otherwise
 distributed with the intention of earning a profit thereon.

DIVISION: I&C NEW PRODUCTS DEPARTMENT

TRADE NAME:

NEXTEL(tm) 312 CERAMIC FIBER WITH 299 or 399 SIZING

ID NUMBER/U.P.C.:

44-0028-0103-1	-	-	-	98-0400-0028-7	00-51115-02096-4
98-0400-0029-5	00-51115-02097-1	98-0400-0032-9	-	-	-
98-0400-0033-7	-	-	-	98-0400-0034-5	00-51115-02102-2
98-0400-0035-2	00-51115-02103-9	98-0400-0036-0	-	-	-
98-0400-0037-8	00-51115-02105-3	98-0400-0038-6	-	-	-
98-0400-0039-4	00-51115-02107-7	98-0400-0040-2	-	-	-
98-0400-0041-0	00-51115-02109-1	98-0400-0042-8	-	-	-
98-0400-0043-6	00-51115-02111-4	98-0400-0044-4	-	-	-
98-0400-0045-1	00-51115-02113-8	98-0400-0046-9	-	-	-
98-0400-0047-7	00-51115-02115-2	98-0400-0048-5	-	-	-
98-0400-0049-3	00-51115-02117-6	98-0400-0050-1	-	-	-
98-0400-0051-9	00-51115-02119-0	98-0400-0052-7	-	-	-
98-0400-0053-5	00-51115-02121-3	98-0400-0054-3	-	-	-
98-0400-0055-0	00-51115-02123-7	98-0400-0056-8	-	-	-
98-0400-0057-6	00-51115-02125-1	98-0400-0058-4	-	-	-
98-0400-0059-2	00-51115-02127-5	98-0400-0060-0	-	-	-
98-0400-0061-8	00-51115-02129-9	98-0400-0062-6	-	-	-
98-0400-0063-4	-	-	-	98-0400-0064-2	-
98-0400-0065-9	00-51115-02133-6	98-0400-0066-7	-	-	-
98-0400-0067-5	00-51115-02135-0	98-0400-0068-3	-	-	-
98-0400-0069-1	00-51115-02137-4	98-0400-0070-9	-	-	-
98-0400-0071-7	00-51115-02139-8	98-0400-0072-5	-	-	-
98-0400-0073-3	00-51115-02141-1	98-0400-0074-1	-	-	-
98-0400-0075-8	00-51115-02143-5	98-0400-0076-6	00-51115-02144-2		
98-0400-0077-4	-	-	98-0400-0078-2	00-51115-02146-6	
98-0400-0079-0	-	-	98-0400-0080-8	00-51115-02148-0	
98-0400-0081-6	-	-	98-0400-0082-4	00-51115-02150-3	
98-0400-0083-2	-	-	98-0400-0084-0	00-51115-02152-7	
98-0400-0085-7	-	-	98-0400-0086-5	00-51115-02154-1	
98-0400-0087-3	-	-	98-0400-0088-1	00-51115-02156-5	
98-0400-0089-9	-	-	98-0400-0092-3	00-51115-02160-2	
98-0400-0093-1	00-51115-02161-9	98-0400-0094-9	00-51115-02162-6		
98-0400-0095-6	00-51115-02163-3	98-0400-0096-4	00-51115-02164-0		
98-0400-0097-2	00-51115-02165-7	98-0400-0098-0	00-51115-02166-4		
98-0400-0099-8	00-51115-02167-1	98-0400-0100-4	00-51115-02168-8		
98-0400-0101-2	00-51115-02169-5	98-0400-0102-0	00-51115-02170-1		
98-0400-0103-8	00-51115-02171-8	98-0400-0104-6	00-51115-02172-5		
98-0400-0105-3	00-51115-02173-2	98-0400-0106-1	00-51115-02174-9		

 Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

HEADING (continued)

98-0400-0107-9	00-51115-02175-6	98-0400-0108-7	00-51115-02176-3
98-0400-0109-5	00-51115-02177-0	98-0400-0110-3	00-51115-02178-7
98-0400-0111-1	- - -	98-0400-0112-9	00-51115-02180-0
98-0400-0113-7	- - -	98-0400-0114-5	- - -
98-0400-0115-2	- - -	98-0400-0116-0	- - -
98-0400-0117-8	- - -	98-0400-0118-6	00-51115-02186-2
98-0400-0119-4	00-51115-02187-9	98-0400-0120-2	- - -
98-0400-0121-0	00-51115-02189-3	98-0400-0122-8	00-51115-02190-9
98-0400-0123-6	- - -	98-0400-0124-4	- - -
98-0400-0125-1	- - -	98-0400-0126-9	- - -
98-0400-0127-7	- - -	98-0400-0128-5	- - -
98-0400-0129-3	- - -	98-0400-0130-1	- - -
98-0400-0131-9	- - -	98-0400-0132-7	- - -
98-0400-0133-5	- - -	98-0400-0134-3	- - -
98-0400-0138-4	00-51115-02206-7	98-0400-0139-2	00-51115-02207-4
98-0400-0140-0	00-51115-02208-1	98-0400-0141-8	- - -
98-0400-0142-6	00-51115-02210-4	98-0400-0143-4	00-51115-02211-1
98-0400-0144-2	00-51115-02212-8	98-0400-0145-9	00-51115-02213-5
98-0400-0146-7	00-51115-02214-2	98-0400-0147-5	00-51115-02215-9
98-0400-0148-3	00-51115-02216-6	98-0400-0155-8	00-51115-02223-4
98-0400-0156-6	00-51115-02224-1	98-0400-0157-4	00-51115-02225-8
98-0400-0158-2	- - -	98-0400-0159-0	00-51115-02227-2
98-0400-0160-8	00-51115-02228-9	98-0400-0161-6	- - -
98-0400-0162-4	00-51115-02230-2	98-0400-0163-2	00-51115-02231-9
98-0400-0164-0	- - -	98-0400-0165-7	- - -
98-0400-0166-5	00-51115-02234-0	98-0400-0167-3	00-51115-02235-7
98-0400-0183-0	00-51115-02251-7	98-0400-0205-1	00-51115-02418-4
98-0400-0206-9	00-51115-02419-1	98-0400-0207-7	- - -
98-0400-0208-5	00-51115-02421-4	98-0400-0209-3	00-51115-02422-1
98-0400-0210-1	00-51115-02423-8	98-0400-0215-0	00-51115-02428-3
98-0400-0219-2	00-51115-02432-0	98-0400-0222-6	- - -
98-0400-0223-4	- - -	98-0400-0224-2	- - -
98-0400-0256-4	- - -	98-0400-0257-2	- - -
98-0400-0261-4	00-51115-00257-1	98-0400-0294-5	00-51115-00267-0
98-0400-0299-4	00-51115-00271-7	98-0400-0329-9	00-51115-00301-1
98-0400-0351-3	00-51115-00313-4	98-0400-0357-0	00-51115-00318-9
98-0400-0388-5	- - -	98-0400-0389-3	- - -
98-0400-0431-3	- - -	98-0400-0449-5	- - -
98-0400-0450-3	- - -	98-0400-0495-8	00-51115-00691-3
98-0400-0541-9	00-51115-02459-7	98-0400-0563-3	00-51115-02475-7
98-0400-0565-8	- - -	98-0400-0622-7	00-51115-02654-6
98-0400-0641-7	- - -	98-0400-0642-5	- - -
98-0400-0643-3	- - -	98-0400-0644-1	- - -
98-0400-0662-3	00-51115-02677-5	98-0400-0678-9	00-51115-02687-4
98-0400-0679-7	00-51115-02688-1	98-0400-0710-0	00-51115-03261-5
98-0400-0722-5	00-51115-03270-7	98-0400-0759-7	00-51115-03303-2
98-0400-0760-5	00-51115-03304-9	98-0400-0809-0	00-51115-03334-6
98-0400-0925-4	00-51115-03766-5	98-0400-0941-1	00-51115-03773-3
98-0400-0976-7	00-51115-03784-9	98-0400-0987-4	00-51115-03790-0
98-0400-1046-8	00-51115-03830-3	98-0400-1141-7	00-51115-03860-0

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

HEADING (continued)

98-0400-1157-3	00-51115-03874-7	98-0400-1249-8	00-51115-03928-7
98-0400-1266-2	00-51115-03940-9	98-0400-1580-6	00-51115-04399-4
98-0400-1762-0	00-51115-04452-6	98-0400-1763-8	00-51115-04453-3
98-0400-1775-2	00-51115-04459-5	98-0400-1892-5	00-51115-04563-9
98-0400-1947-7	00-51115-04975-0	98-0400-2047-5	00-51115-05033-6
98-0400-2063-2	00-51115-05042-8	98-0400-2088-9	00-51115-07136-2
98-0400-2092-1	- - -	98-0400-2093-9	- - -
98-0400-2094-7	- - -	98-0400-2095-4	- - -
98-0400-2096-2	- - -	98-0400-2097-0	- - -
98-0400-2098-8	- - -	98-0400-2099-6	- - -
98-0400-2192-9	- - -	98-0400-2193-7	- - -
98-0400-2194-5	- - -	98-0400-2198-6	- - -
98-0400-2199-4	- - -	98-0400-2200-0	- - -
98-0400-2201-8	- - -	98-0400-2202-6	- - -
98-0400-2203-4	- - -	98-0400-2204-2	- - -
98-0400-2205-9	- - -	98-0400-2206-7	- - -
98-0400-2211-7	- - -	98-0400-2212-5	- - -
98-0400-2213-3	- - -	98-0400-2236-4	00-51115-07146-1
98-0400-2241-4	00-51115-07151-5	98-0400-2447-7	00-51115-07262-8
98-0400-2467-5	00-51115-07271-0	98-0400-2502-9	00-51115-07410-3
98-0400-2572-2	00-51115-07514-8	98-0400-2611-8	00-51115-07429-5
98-0400-2649-8	00-51115-07562-9	98-0400-2697-7	00-51125-07810-8
98-0400-2769-4	00-51125-07885-6	98-0400-2770-2	00-51125-07886-3
98-0400-2783-5	00-51125-07899-3	98-0400-2834-6	00-51115-08148-4
98-0400-2835-3	00-51115-08149-1	98-0400-2848-6	00-51115-08162-0
98-0400-2895-7	00-51115-08209-2	98-0400-2896-5	00-51115-08210-8
98-0400-2905-4	00-51115-08219-1	98-0400-2911-2	00-51115-08225-2
98-0400-2940-1	00-51115-08249-8	98-0400-2941-9	00-51115-08250-4
98-0400-2985-6	00-51115-08294-8	98-0400-2986-4	00-51115-08295-5
98-0400-2992-2	00-51115-08302-0	98-0400-2993-0	00-51115-08303-7
98-0400-5900-2	00-51115-09648-8	98-0400-5905-1	00-51115-09653-2
98-0400-5906-9	00-51115-09654-9	98-0400-5907-7	00-51115-09655-6
98-0400-5908-5	00-51115-09656-3	98-0400-5909-3	00-51115-09657-0
98-0400-5910-1	00-51115-09658-7	98-0400-5911-9	00-51115-09659-4
98-0400-5912-7	00-51115-09660-0	98-0400-5913-5	00-51115-09661-7
98-0400-5914-3	00-51115-09662-4	98-0400-5915-0	00-51115-09663-1
98-0400-5916-8	00-51115-09664-8	98-0400-5917-6	00-51115-09665-5
98-0400-5957-2	00-51115-09705-8	98-0400-5964-8	00-51115-09712-6
98-0400-5965-5	00-51115-09713-3	98-0400-5966-3	00-51115-09714-0
98-0400-5978-8	00-51115-09725-6		

ISSUED: November 19, 1999
SUPERSEDES: August 19, 1999
DOCUMENT: 10-4844-6

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

1. INGREDIENT	C.A.S. NO.	PERCENT	
ALUMINOBOROSILICATE FIBERS.....	12788-79-3	96.5	- 99.5
ORGANIC SIZING.....	Unknown	0.5	- 3.5

2. PHYSICAL DATA

BOILING POINT:..... N/A
VAPOR PRESSURE:..... N/A
VAPOR DENSITY:..... N/A
EVAPORATION RATE:..... N/A
SOLUBILITY IN WATER:..... 0.5-3.5% BY WEIGHT
SPECIFIC GRAVITY:..... 2.7
PERCENT VOLATILE:..... 0.5-3.5% BY WEIGHT
pH:..... N/A
VISCOSITY:..... SOLID
MELTING POINT:..... > 1800 C

APPEARANCE AND ODOR:

Textile grade fibers which are equal to or greater than 7 microns in diameter, shiny, white, thread, yarn or fabric.

3. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:..... N/A
FLAMMABLE LIMITS - LEL:..... N/A
FLAMMABLE LIMITS - UEL:..... N/A
AUTOIGNITION TEMPERATURE:..... N/D

EXTINGUISHING MEDIA:

Not applicable

SPECIAL FIRE FIGHTING PROCEDURES:

None known.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

None known.

NFPA HAZARD CODES: HEALTH: 0 FIRE: 1 REACTIVITY: 0
UNUSUAL REACTION HAZARD: none

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

4. REACTIVITY DATA

STABILITY: Stable

INCOMPATIBILITY - MATERIALS/CONDITIONS TO AVOID:
None known.

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS:
Carbon monoxide, formic acid and trace amounts of other substances.

5. ENVIRONMENTAL INFORMATION

SPILL RESPONSE:
Observe precautions from other sections.

RECOMMENDED DISPOSAL:
Dispose of waste product in a sanitary landfill. Reclaim if
feasible.

ENVIRONMENTAL DATA:
Not determined.

REGULATORY INFORMATION:
Volatile Organic Compounds: N/D.
VOC Less H2O & Exempt Solvents: N/D.

Since regulations vary, consult applicable regulations or authorities
before disposal. U.S. EPA Hazardous Waste Number = None (Not U.S.
EPA Hazardous).

EPCRA HAZARD CLASS:
FIRE HAZARD: No PRESSURE: No REACTIVITY: No ACUTE: Yes CHRONIC: No

6. SUGGESTED FIRST AID

EYE CONTACT:
Immediately flush eyes with large amounts of water. Get immediate
medical attention.

SKIN CONTACT:
Flush skin with large amounts of water. If irritation persists, get
medical attention.

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

6. SUGGESTED FIRST AID (continued)

INHALATION:

If signs/symptoms occur, remove person to fresh air. If signs/symptoms continue, call a physician.

IF SWALLOWED:

No need for first aid is anticipated.

7. PRECAUTIONARY INFORMATION

EYE PROTECTION:

Avoid eye contact. Wear safety glasses with side shields.

SKIN PROTECTION:

Avoid prolonged or repeated skin contact. Wear appropriate gloves when handling this material. Use one or more of the following personal protection items as necessary to prevent skin contact: coveralls.

RECOMMENDED VENTILATION:

Provide appropriate local exhaust when product is heated. Use in a well-ventilated area. Provide sufficient ventilation to maintain emissions below recommended exposure limits. If exhaust ventilation is not adequate, use appropriate respiratory protection.

RESPIRATORY PROTECTION:

Avoid breathing of airborne material. Avoid breathing of thermal decomposition products. Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: half-mask dust respirator, full-face dust respirator.

PREVENTION OF ACCIDENTAL INGESTION:

Do not ingest.

RECOMMENDED STORAGE:

Keep out of the reach of children.

FIRE AND EXPLOSION AVOIDANCE:

Not applicable.

EXPOSURE LIMITS

INGREDIENT	VALUE	UNIT	TYPE	AUTH	SKIN*
ALUMINOBOROSILICATE FIBERS.....	1.0	FIBER/CC	TWA	OSHA	
		PROPOSED			
		REFRACTORY CERAMIC FIBERS			

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

EXPOSURE LIMITS (continued)

INGREDIENT	VALUE	UNIT	TYPE	AUTH	SKIN*
ALUMINOBOROSILICATE FIBERS.....	1.0	FIBER/CC	TWA	CMRG	
		REFRACTORY CERAMIC FIBERS			
ORGANIC SIZING.....	NONE	NONE	NONE	NONE	

* SKIN NOTATION: Listed substances indicated with 'Y' under SKIN refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

SOURCE OF EXPOSURE LIMIT DATA:

- CMRG: Chemical Manufacturer Recommended Exposure Guidelines
- OSHA: Occupational Safety and Health Administration
- NONE: None Established

8. HEALTH HAZARD DATA

EYE CONTACT:

Mechanical eye irritation: signs/symptoms can include irritation, redness, scratching of the cornea and tearing.

SKIN CONTACT:

Mechanical skin irritation: signs/symptoms can include itching and redness.

INHALATION:

Irritation (upper respiratory): signs/symptoms can include soreness of the nose and throat, coughing and sneezing.

Vapors of heated material may cause respiratory system irritation.

IF SWALLOWED:

Ingestion is not a likely route of exposure to this product.

Irritation of Gastrointestinal Tissues: signs/symptoms can include pain, vomiting, abdominal tenderness, nausea, blood in vomitus, and blood in feces.

OTHER HEALTH HAZARD INFORMATION:

Due to their large size (7-13 microns in diameter), these Nextel (TM) Ceramic Fibers are considered non-respirable and therefore are not expected to pose a cancer risk. Fibers are defined as respirable by WHO convention if the length is larger than 5 microns and the diameter is less than 3 microns with a length to diameter ratio greater than 3:1.

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

SECTION CHANGE DATES

HEADING	SECTION CHANGED SINCE August 19, 1999	ISSUE
INGREDIENTS	SECTION CHANGED SINCE August 19, 1999	ISSUE
REACTIVITY DATA	SECTION CHANGED SINCE August 19, 1999	ISSUE
HEALTH HAZARD DATA	SECTION CHANGED SINCE August 19, 1999	ISSUE

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from 3M.