

"CHRYSOTILE ASBESTOS WILL
NOT AFFECT YOUR HEALTH"

#3

03098

"CHRYSOTILE ASBESTOS WILL NOT AFFECT
YOUR HEALTH - UNLESS BREATHED IN EXCESS
QUANTITIES FOR MANY YEARS"

#4

03099

ASBESTOSIS

BRONCHOGENIC CARCINOMA (LUNG CANCER)

03100

#5

ASBESTOS OPERATIONS HAVING MOST
POTENTIAL FOR HIGH EXPOSURES

ASBESTOS MINES

ASBESTOS MILLS

ASBESTOS CEMENT PLANTS

ASBESTOS TEXTILE OPERATIONS

VINYL-ASBESTOS TILE PLANTS

SPRAY FIREPROOFING & INSULATING

#6

63191

FUNCTIONS OF ASBESTOS IN PLASTICS

REINFORCEMENT

HEAT RESISTANCE

FLOW CONTROL

FILLER

#7

03102

PLASTICS

VINYL

POLYPROPYLENE

POLYESTER

NYLON

MELAMINE

EPOXY

PHENOLIC

PRODUCTS

FLOOR TILE

BRAKE LININGS

CLUTCH FACINGS

ELECTRICAL COMPONENTS

AUTO PARTS

FURNITURE

SEALANTS

COATINGS

ADHESIVES

ASBESTOS - HYDRATED METAL SILICATE

SERPENTINE

CHRYSTILE

AMPHIBOLE

CROCIDOLITE

AMOSITE

ANTHOPHYLLITE

TREMOLITE

ACTINOLITE

<u>TYPE</u>	<u>SOURCE(S)</u>	<u>USE(S)</u>
CHRYBOTILE	U.S., CANADA, So. AFRICA, ETC.	CEMENT PRODUCTS, TILE, PAPER, FRICTION MATERIALS, TEXTILES, PLASTICS, INSULATION
CROCIDOLITE	So. AFRICA	REINFORCING CEMENT & PLASTIC PIPE, INSULATION
AMOSITE	So. AFRICA	INSULATING & PACKING MATERIALS
ANTHOPHYLLITE	FINLAND	FILLER IN PLASTICS

#10

03105

USE OF ASBESTOS IN UNITED STATES

<u>USE</u>	<u>% OF TOTAL</u>
CEMENT PRODUCTS	25
FLOOR TILE	18
PAPER	14
FRICTION & PACK	14
INSULATION & SPRAY PROD.	4
REINFORCED PLASTICS	3
TEXTILES	3
MISCELLANEOUS	19

TOTAL CONSUMPTION, TONS

	<u>1971</u>	<u>1972 (EST)</u>
CHRYBOTILE	760,000	810,000
CROCIDOLITE	7,000	4,500
AMOSITE	15,000	8,000

#10A

03106

CROCIDOLITE

AMOSITE

#11

03107

CHRYSTILE

#12

03108

UCC 014279

THE WILLIAMS - STEIGER OCCUPATIONAL
SAFETY & HEALTH ACT OF 1970.

EFFECTIVE: APRIL 28, 1971

PURPOSE: "TO ASSURE SO FAR AS POSSIBLE EVERY WORKING MAN AND WOMAN IN THE
NATION SAFE AND HEALTHFUL WORKING CONDITIONS AND TO PRESERVE OUR
HUMAN RESOURCES."

#13

03139

DEPT. OF LABOR -

OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA)

DEPT. OF HEALTH, EDUCATION & WELFARE -

NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY & HEALTH (NIOSH)

#14

63110

TARGET INDUSTRIES

LONGSHORING

MEAT AND MEAT PRODUCTS

LUMBER AND WOOD PRODUCTS

ROOFING AND SHEET METAL

MOBILE HOMES AND OTHER TRANSPORTATION EQUIPMENT

#15

08111

TARGET HEALTH HAZARDS

ASBESTOS

COTTON DUST

SILICA

LEAD

CARBON MONOXIDE

#16

03112

ACGIH STANDARD - 12 FIBERS/ML

OSHA EMERGENCY STANDARD — 5 FIBERS/ML

#17

03113

<u>SUBSTANCE</u>	<u>CAN PRODUCE</u>	<u>No. EMPLOYEES AT RISK</u>	<u>INDUSTRIES</u>
ASBESTOS	ASBESTOSIS, CANCER	200,000	INSULATION, SHIP BUILDING, CONSTRUCTION, ETC.
COTTON DUST	BYSSINOSIS	800,000	COTTON PROCESSING- ALL TYPES
SILICA	SILICOSIS	1,100,000	ABRASIVES, MINERAL PROCESSING, SAND- BLASTING, ETC.
LEAD	SEVERE NERVOUS SYSTEM DISABILITIES	1,600,000	AMMUNITION, PAINT, BATTERY, AUTO, ETC.
CARBON MONOXIDE	BRAIN DAMAGE, DEATH	UNCOUNTABLE THOUSANDS	METAL PROCESSING, USERS OF GASOLINE- POWERED EQUIPMENT

FEDERAL REGISTER, VOLUME 37, No. 110 WEDNESDAY JUNE 7, 1972
1910.93A STANDARD FOR EXPOSURE TO ASBESTOS DUST

8-HOUR TIME WEIGHTED AVERAGE (TWA) - 5 FIBERS, LONGER THAN
5 MICROMETERS, PER CUBIC CENTIMETER OF AIR - LOWERED TO
2 FIBERS PER CUBIC CENTIMETER IN 1976

PEAK CONCENTRATION MAXIMUM - 10 FIBERS PER CUBIC CENTIMETER

#19

63115

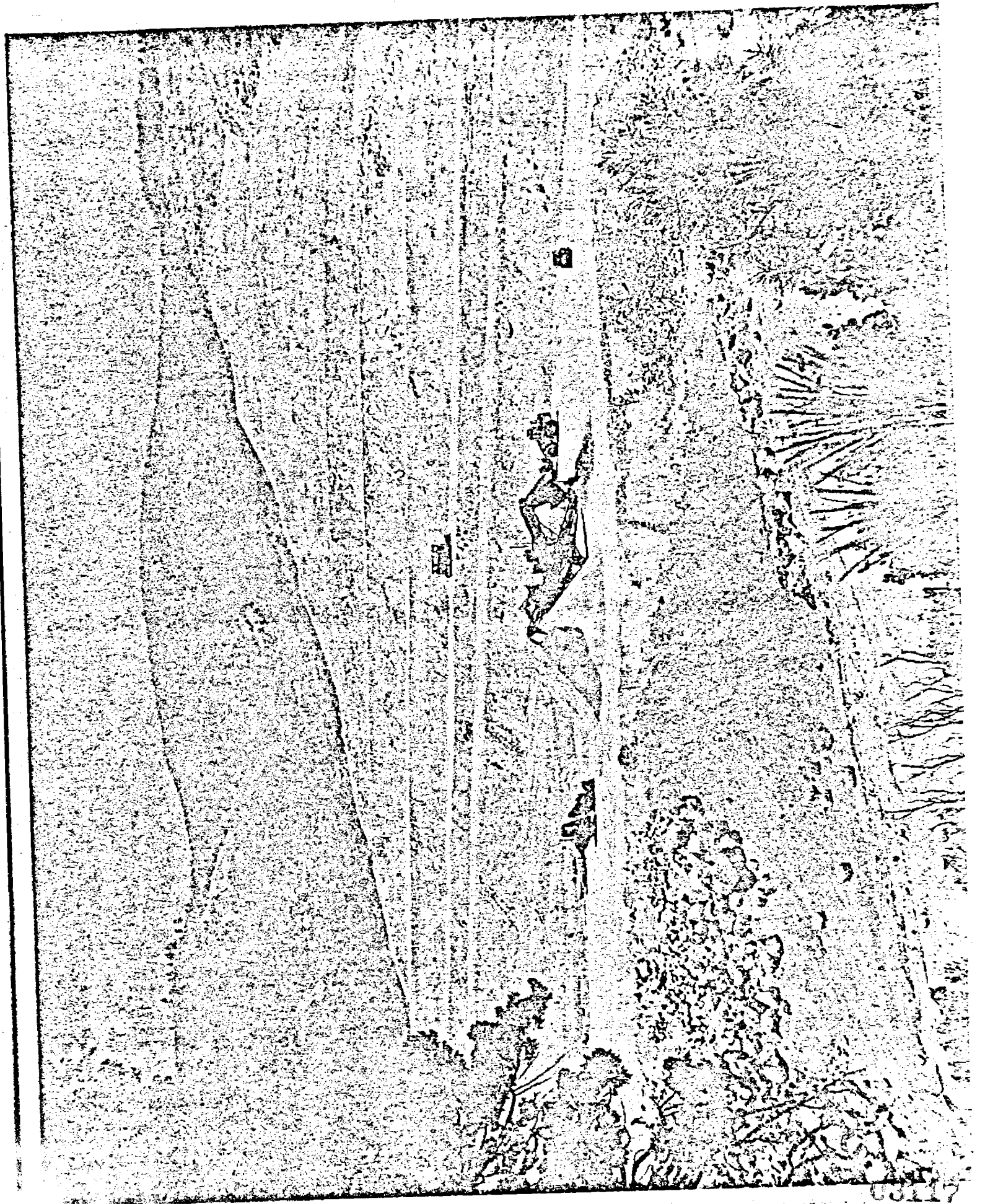
REQUIRED BY OSHA

MONITORING - "EVERY PLACE OF EMPLOYMENT WHERE
ASBESTOS FIBERS ARE RELEASED"

MEDICAL EXAMS - ALL EMPLOYEES IN ANY "OCCUPATION
EXPOSED TO AIRBORNE CONCENTRATIONS
OF ASBESTOS FIBERS"

#20

03116



UCC 014288

NOT REQUIRED UNLESS EXPOSURE LIMITS EXCEEDED

RESPIRATORS

SPECIAL TOOLS

SPECIAL CLOTHING

CHANGE ROOMS

SIGNS

SPECIAL WASTE DISPOSAL

CAUTION LABELS

#22

63118

TYPICAL MATERIALS REQUIRING LABELS*

RAW ASBESTOS FIBER

DRY JOINT CEMENT & SPRAY PRODUCTS

UNSATURATED ROOFING FELT

SOME TEXTILE PRODUCTS

"UNBOUND" DRY PRODUCTS

* IF REASONABLE HANDLING MAKES DUST

TYPICAL MATERIALS ~~NOT~~ REQUIRING LABELS

REINFORCED PLASTICS

ROOFING COMPOUNDS

FLOOR TILE

REINFORCED RUBBER

READY-MIX JOINT CEMENTS

COATINGS & ADHESIVES

AUTO UNDERCOATING

PAINTS

SEALANTS

MINERAL BOARD (CEILING TILES)

LUBRICANTS, GREASES

TYPICAL DUST COUNTS

<u>PLANT/OPERATION</u>	<u>CEILING CONCENTRATIONS</u> <u>FIBERS/CC > 5 MICROMETERS</u>
FLOOR TILE	1-3
CEILING TILE	1
GYP SUM COMPOUNDS	2-9
POLYESTER PRODUCTION	1-3
GRINDING POLYESTER	0-3
PHENOLIC PRODUCTION	2-5
HANDLING PHENOLIC	3-14
GRINDING PHENOLIC	2-4

#25

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ADVANTAGES OF CHRYSOTILE FIBER

POSITIVE SURFACE CHARGE

FLEXIBILITY

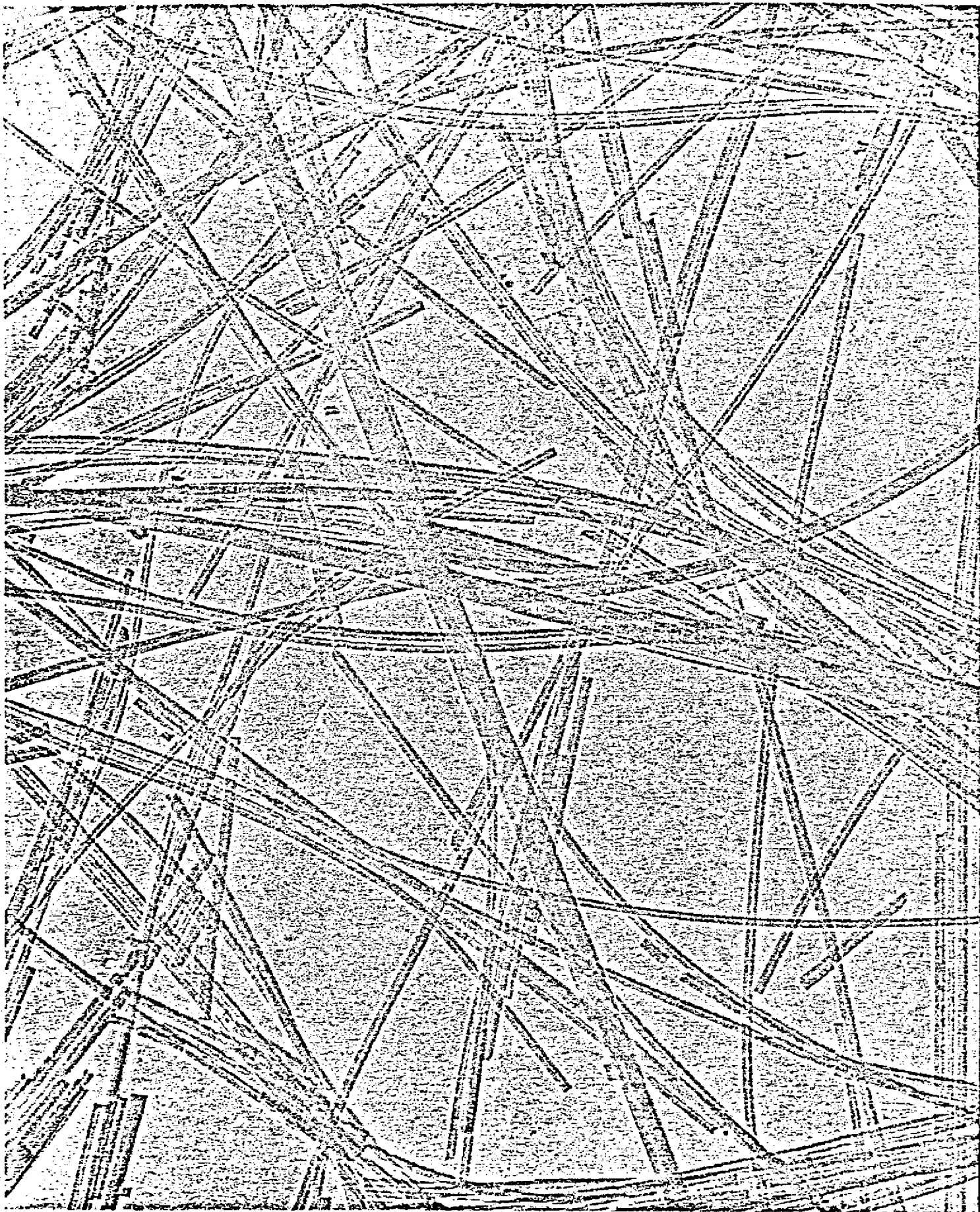
TENSILE STRENGTH

LOW REFRACTIVE INDEX

SOFTNESS

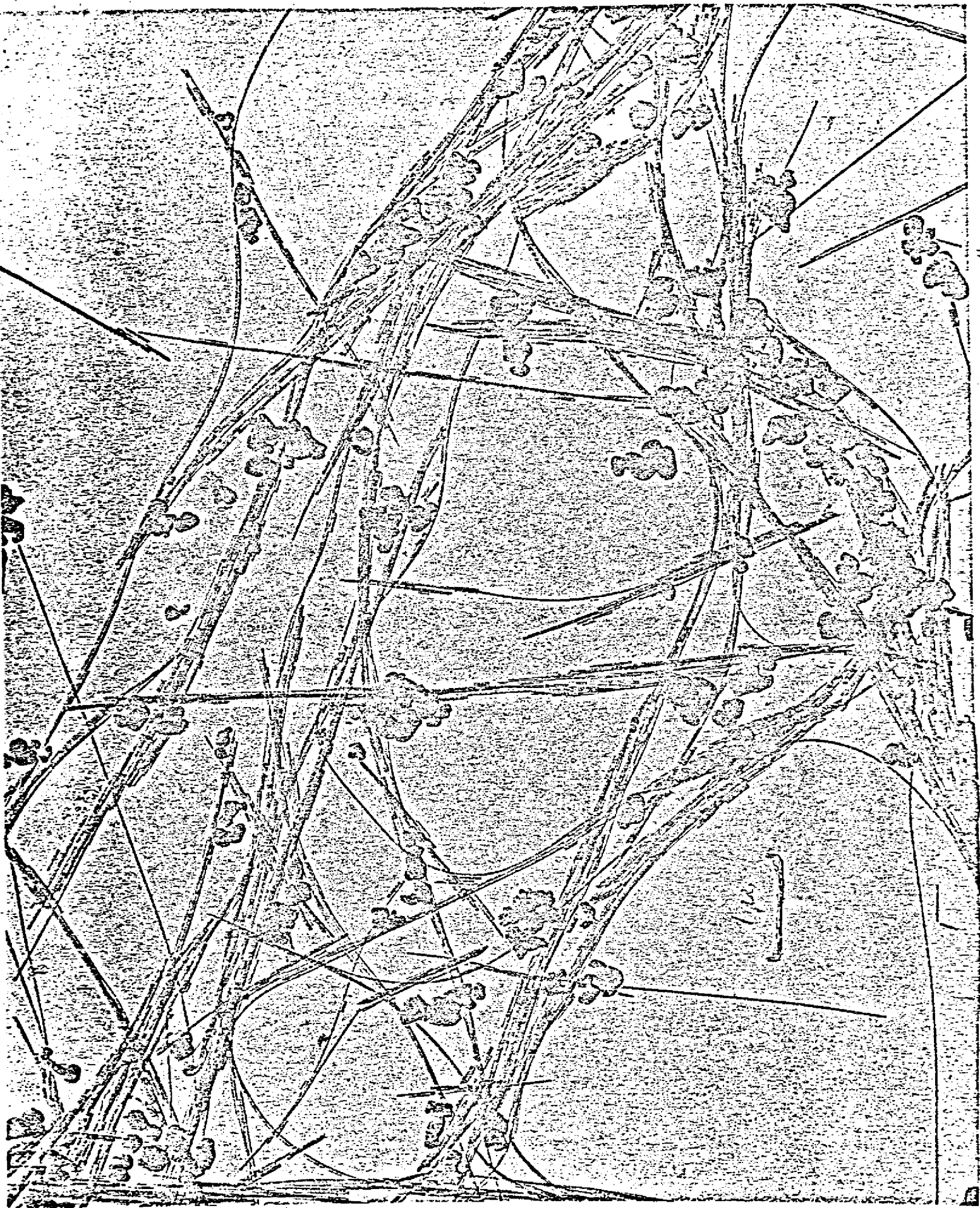
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03123

UCC 014294



CHRYSOTILE ASBESTOS -

- HAS BEEN USED SAFELY FOR YEARS
- IS BEING USED SAFELY TODAY
- WILL CONTINUE TO BE USED SAFELY AND EFFECTIVELY

#29

03125

CHEMICAL & PHYSICAL PROPERTIES OF ASBESTOS TYPES

FORMULA	CHRYSOTILE $Mg_3Si_2O_5(OH)_4$	CROCIDOLITE $Na_2Fe_5Si_8O_{22}(OH)_2$	AMOSITE $(FeMg)_6Si_8O_{22}(OH)_2$
COMPOSITION			
SiO ₂	37-44	49-53	49-53
MgO	39-44	0-3	1-7
FeO	0-6	13-20	34-44
Fe ₂ O ₃	0.1-5	17-20	---
Al ₂ O ₃	0.2-1.5	---	2-9
H ₂ O	12-15	2.5-4.5	2-5
Ca	0-5	---	---
Na ₂ O	---	4-8.5	---
CaO+Na ₂ O	---	---	0.5-2.5
COLOR	GRAY	BLUE	GRAY/BROWN
HARDNESS	2.5-4	4	5.5-6
SPECIFIC GRAVITY	2.4-2.6	3.2-3.3	3.1-3.3
TENSILE, M PSI	80-100	100-300	16-90
SURFACE CHARGE	POSITIVE	NEGATIVE	NEGATIVE