

```

* * * * *
*                               M S D S                               *
*                               *                                     *
* Canadian Centre for Occupational Health and Safety *
* * * * * (February, 2002) *

```

*** IDENTIFICATION ***

```

MSDS RECORD NUMBER      : 2833001
PRODUCT NAME(S)        : Ludox Colloidal Silica
PRODUCT IDENTIFICATION  : MSDS NUMBER: CEC00999
DATE OF MSDS           : 2000-05-25
CURRENCY NOTE          : This MSDS was provided to CCOHS in electronic form on
                        : 2001-08-07

```

*** MANUFACTURER INFORMATION ***

```

MANUFACTURER           : DuPont Canada, Inc
ADDRESS                 : Post Office Box 2200
                        : Streetsville
                        : Mississauga Ontario
                        : Canada L5M 2H3
                        : Telephone: 800-387-2122 (Product Information)
EMERGENCY TELEPHONE NO. : 613-348-3616 (Transport, 24 HOURS)
                        : 613-348-3616 (Medical, 24 HOURS)

```

*** SUPPLIER/DISTRIBUTOR INFORMATION ***

```

SUPPLIER/DISTRIBUTOR   : DuPont Canada, Inc
ADDRESS                 : Post Office Box 2200
                        : Streetsville
                        : Mississauga Ontario
                        : Canada L5M 2H3
                        : Telephone: 800-387-2122 (Product Information)
EMERGENCY TELEPHONE NO. : 613-348-3616 (Transport, 24 HOURS)
                        : 613-348-3616 (Medical, 24 HOURS)

```

*** MATERIAL SAFETY DATA ***

DuPont
Material Safety Data Sheet

Page 1

```

-----
Ludox Colloidal Silica
CEC00999                Revised 25-MAY-2000        Printed 13-JUL-2001
-----

```

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"LUDOX" is a registered trademark of DuPont.

```

Corporate MSDS Number  : DU006700
CAS Name                : SILICA

```

Tradenames and Synonyms

```

SILICON DIOXIDE
AMORPHOUS SILICA
Grades: AM, DF, FM, SM, TMA, ULP,
AS-30, AS-34, AS-40, FM-AS, HS-30, HS-40,
SM-AS, TM-40, TM-50,

```

Company Identification

MANUFACTURER/DISTRIBUTOR

DuPont Canada, Inc.
 P.O. Box 2200
 Streetsville
 Mississauga, Ontario L5M 2H3

PHONE NUMBERS

Product Information : 1-800-387-2122
 Transport Emergency : 1-613-348-3616 (24 HOURS)
 Medical Emergency : 1-613-348-3616 (24 HOURS)

 COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
AMORPHOUS SILICA	7631-86-9	14.5-50 WT%
TITRATABLE ALKALI (as Na ₂ O)	1313-59-3	0.05-0.56 WT%
WATER	7732-18-5	50-86 WT%

 HAZARDS IDENTIFICATION

Potential Health Effects

HUMAN HEALTH EFFECTS:

Overexposure by skin or eye contact may include skin irritation with discomfort or rash; or eye irritation with discomfort, tearing, or blurring of vision. By inhalation, the effects may include temporary lung irritation with

CEC00999

DuPont

Page 2

Material Safety Data Sheet

(HAZARDS IDENTIFICATION - Continued)

cough, discomfort, difficulty breathing and shortness of breath.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

 FIRST AID MEASURES

First Aid

INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

The compound is not likely to be hazardous by skin contact, but cleansing the skin after use is advisable.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of

water for at least 15 minutes. Call a physician.

INGESTION

No specific intervention is indicated as the compound is not likely to be hazardous by ingestion. However, if symptoms occur, consult a physician.

FIRE FIGHTING MEASURES

Flammable Properties

Will not burn.

Extinguishing Media

Use media appropriate for surrounding material.

Fire Fighting Instructions

None.

CEC00999

DuPont
Material Safety Data Sheet

Page 3

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Spill Clean Up

Flush with water to chemical sewer.

HANDLING AND STORAGE

Handling (Personnel)

Avoid contact with eyes, skin, or clothing. Wash thoroughly after handling.

Avoid breathing aerosols and mists (also dust from dried-down product). Wash contaminated clothing before reuse and before "LUDOX" dries.

Storage

Keep container tightly closed.

Store at temperatures above 2 C (35 F) to avoid irreversible precipitation of silica.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use sufficient ventilation to keep employee exposure below recommended limits.

Personal Protective Equipment

Have available and wear as appropriate: chemical splash goggles and rubber gloves. Where there is potential for inhalation exposure to product dust, mist, or aerosols in excess of applicable exposure limits, wear NIOSH approved respiratory protection.

Exposure Guidelines

CEC00999

DuPont

Page 4

Material Safety Data Sheet

Exposure Limits

Ludox Colloidal Silica

PEL (OSHA) : None Established
 TLV (ACGIH) : None Established
 AEL * (DuPont) : 2 mg/m³, 8 hr TWA, as respirable silica dust

Other Applicable Exposure Limits

AMORPHOUS SILICA

PEL (OSHA) : 80 mg/m³ / % SiO₂ - 8 Hr TWA
 TLV (ACGIH) : 10 mg/m³, total dust, 8 Hr. TWA
 AEL * (DuPont) : 3 mg/m³, 8 Hr. TWA, respirable dust

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Boiling Point : 100 C (212 F) @ 760 mm Hg Liquid component is water.
 Vapor Pressure : 24 mm Hg @ 25 C (77 F)
 48 mm Hg @ 38 C (100 F)
 Vapor Density : Vapor is water.
 Melting Point : 0 C (32 F)
 Evaporation Rate : <1 (Butyl Acetate=1.0)
 Solubility in Water : 100 WT%
 pH : 4.0-11.5
 Odor : Odorless.
 Form : Liquid.
 Color : Clear to opalescent
 Specific Gravity : 1.09-1.40

Titratable Alkali (as Na₂O) WT.% = 0 - 0.56

Silica WT.% = 10 - 50.

For additional information specific to the various grades, please see the appropriate PUSH Bulletins.

STABILITY AND REACTIVITY

Chemical Stability

No known hazardous instability.

Incompatibility with Other Materials

Incompatible or can react with water reactive materials.

CEC00999

DuPont

Page 5

Material Safety Data Sheet

(STABILITY AND REACTIVITY - Continued)

Decomposition

No known hazardous decomposition.

Polymerization

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

Animal Data

"LUDOX" COLLOIDAL SILICA

Oral LD50: >10,000 mg/kg in rats

The compound is a slight skin irritant and a mild eye irritant. Toxic effects described in animals from single inhalation exposures include upper respiratory irritation, lung congestion, bronchitis, and emphysema. Repeated inhalation exposures at concentrations of 50 or 150 mg/m³ produced increased lung weights and lung changes. No progressive pulmonary fibrosis was seen, and the observed lung changes were reversible. No adverse effects were observed in this study at 10 mg/m³. By ingestion, effects from single high doses include weight loss and irritation. Repeated ingestion exposures produced nonspecific effects such as weight loss and diarrhea. Effects observed in animals exposed by intratracheal instillation for one to two years included fibrosis of the lungs.

ECOLOGICAL INFORMATION

Ecotoxicological Information

The 48 hour EC50 in Daphnia magna was >5000 mg/L.

The 96 hour LC50 in fathead minnows was >5000 mg/L.

DISPOSAL CONSIDERATIONS

Waste Disposal

Comply with Federal, State, and local regulations.

CEC00999

DuPont
Material Safety Data Sheet

Page 6

TRANSPORTATION INFORMATION

Shipping Information

Not Regulated as a hazardous material by DOT, IMO, or IATA.

Shipping Containers

Tank Cars.
Tank Trucks.

55-gallon PE drums.

55-gallon PE-lined Steel drums.

ISO Tanks.
Tote Bins.

Shipping Information -- Canada

This material is Not Regulated.

REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status : Reported/Included.

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes
Chronic : Yes
Fire : No
Reactivity : No
Pressure : No

HAZARDOUS CHEMICAL LISTS

SARA Extremely
Hazardous Substance - No
CERCLA Hazardous Substance - No
SARA Toxic Chemical - See Components Section

Canadian Regulations

This is not a WHMIS Controlled Product.

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

CEPA Status : DSL: REPORTED/INCLUDED.

CEC00999

DuPont
Material Safety Data Sheet

Page 7

OTHER INFORMATION

NFPA, NPCA-HMIS

NPCA-HMIS Rating
Health : 1 (Chronic Health Effects)
Flammability : 0
Reactivity : 0

Personal Protection rating to be supplied by user depending on use conditions.

Additional Information

For further information see DuPont "'LUDOX' Properties, Uses, Storage, and Handling" Bulletin.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS

CHEMICALS

DuPont Canada Inc.
7070 Mississauga Rd.
Mississauga, Ontario, L5M 2H3
(905) 821-5369.

Indicates updated section.

End of MSDS

©2001 Canadian Centre for Occupational Health & Safety