

**FUSABOND® E589 resin**

Version 2.3

Revision Date 08/12/2011

Ref. 130000034868

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : FUSABOND® E589 resin
MSDS Number : 130000034868

Manufacturer : DuPont
1007 Market Street
Wilmington, DE 19898

Product Information : 1-800-441-7515 (outside the U.S. 1-302-774-1000)
Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency : CHEMTREC: 1-800-424-9300 (outside the U.S. 1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Potential Health Effects

Skin

Maleic anhydride : Causes skin burns. May cause allergic skin reaction.

Eyes

: Resin particles, like other inert materials, are mechanically irritating to eyes.

Inhalation

Maleic anhydride : May cause allergic respiratory reaction. Headache, Nausea, Respiratory tract irritation, Allergy or asthma-like reactions with symptoms of wheezing, chest tightness, difficulty breathing, Fluid in the lungs (pulmonary oedema) with cough, wheezing, abnormal lung sounds, possibly progressing to severe shortness of breath and bluish discoloration of the skin (symptoms might be delayed).

Ingestion

: Is not considered a potential route of exposure.

Carcinogenicity

Material

IARC

NTP

OSHA

Talc (Mg₃H₂(SiO₃)₄)

2B

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
MALEIC ANHYDRIDE MODIFIED POLYOLEFIN BLEND		>99%
Maleic anhydride	108-31-6	<0.1 %

SECTION 4. FIRST AID MEASURES

- Skin contact : In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. The material is not likely to be hazardous by skin contact, but cleansing the skin after use is advisable. Cool skin rapidly with cold water after contact with molten material. Do not attempt to remove material from the skin. Obtain medical treatment for thermal burn.
- Eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.
- Inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
- Ingestion : Not a probable route of exposure. However, in case of accidental ingestion, call a physician.

SECTION 5. FIREFIGHTING MEASURES

- Fire and Explosion Hazard : Material in pellet form may accumulate static charge when poured from one container to another. Failure or malfunction of temperature control systems on processing equipment, such as extruders, may create explosion hazards. Molten polyethylene tends to flow or drip and will propagate fire.
- Suitable extinguishing media : Water, Foam, Dry chemical, Carbon dioxide (CO2)



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Firefighting Instructions : Wear self-contained breathing apparatus (SCBA).
The solid polymer can only be burned with difficulty. Evacuate personnel and keep upwind of fire. Grounding and elimination of the static charge is recommended.

SECTION 6. ACCIDENTAL RELEASE MEASURES

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

Spill Cleanup : Shovel or sweep up.

Accidental Release Measures : Do not discharge to streams, ponds, lakes or sewers.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel) : Before using, read the product bulletin.

Handling (Physical Aspects) : When opening containers, avoid breathing vapours that may be emanating.

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

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : See Bulletin "Proper Use of Local Exhaust Ventilation During Processing of Plastics". When hot processing this material, use local and/or general exhaust ventilation to maintain the concentration of vapors and fumes below exposure limits. Use static controls. Static charges can cause explosions in solvent and dust laden atmospheres.

Personal protective equipment
Respiratory protection : A respiratory protection program that meets country requirements must be followed whenever workplace conditions warrant respirator use. Consult the



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respirator manufacturer to determine the appropriate type of equipment for a given application. Observe respirator use limitations specified by the manufacturer.
Consult the OSHA respiratory protection information located at 29CFR 1910.134.

- Hand protection : Additional protection: Protective gloves
- Eye protection : Wear safety glasses with side shields. Wear tightly fitting chemical splash goggles and face shield when possibility exists for eye and face contact due to spattering or splashing of molten material.
- Skin and body protection : Where there is potential for skin contact, have available and wear as appropriate, impervious gloves, apron, pants, jacket, hood and boots. If there is a potential for contact with hot/molten material wear heat resistant clothing and footwear.

Exposure Guidelines

Exposure Limit Values

Talc (Mg₃H₂(SiO₃)₄)

PEL: (OSHA) 20 millions of particles per cubic foot of air TWA

PEL: (OSHA) 2.4 millions of particles per cubic foot of air TWA

Respirable.
Remarks

The exposure limit is calculated from the equation, 250/(%SiO₂+5), using a value of 100% SiO₂. Lower percentages of SiO₂ will yield higher exposure limits.

PEL: (OSHA) 0.1 mg/m³ TWA Respirable.

Remarks

The exposure limit is calculated from the equation, 10/(%SiO₂+2), using a value of 100% SiO₂. Lower percentages of SiO₂ will yield higher exposure limits.

PEL: (OSHA) 0.3 mg/m³ TWA Total dust.

Remarks

The exposure limit is calculated from the equation, 30/(%SiO₂+2), using a value of 100% SiO₂. Lower values of % SiO₂ will give higher exposure limits.

TLV (ACGIH) 2 mg/m³ TWA Respirable fraction.



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		Remarks	The value is for particulate matter containing no asbestos and <1% crystalline silica.
Kieselguhr, Soda Ash Flux-Calcined			
PEL:	(OSHA)	0.8 mg/m3	TWA
		Remarks	The exposure limit is calculated from the equation, 80/(%SiO2), using a value of 100% SiO2. Lower values of % SiO2 will give higher exposure limits.
PEL:	(OSHA)	20 millions of particles per cubic foot of air	TWA
Dust (inhalable and respirable fraction)			
PEL:	(OSHA)	5 mg/m3	8 hr. TWA Respirable fraction.
		Remarks	All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the Particulates Not Otherwise Regulated (PNOR) limit which is the same as the inert or nuisance dust limit of Table Z-3.
PEL:	(OSHA)	15 mg/m3	8 hr. TWA Total dust.
TLV	(ACGIH)	10 mg/m3	TWA Inhalable particles.
TLV	(ACGIH)	3 mg/m3	TWA Respirable particles.
Maleic anhydride			
PEL:	(OSHA)	0.25 ppm	1 mg/m3
			8 hr. TWA
PEL:	(OSHA)	0.25 ppm	1 mg/m3
			8 hr. TWA
TLV	(ACGIH)	0.1 ppm	TWA
TLV	(ACGIH)	0.01 mg/m3	TWA
AEL *	(DUPONT)	0.1 ppm	8 & 12 hr. TWA

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* 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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: pellets
Color	: clear
Odor	: irritating
Melting point/range	: 120 °C (248 °F)
Specific gravity	: < 1
Water solubility	: negligible

SECTION 10. STABILITY AND REACTIVITY

Stability	: Stable at normal temperatures and storage conditions.
Conditions to avoid	: Temperature > 250 °C (> 482 °F) Abnormally long processing time or high temperatures can produce irritating and toxic fumes. Decomposes on heating.
Incompatibility	: strong oxidants at high temperatures
Hazardous decomposition products	: Decomposition is a function of both processing temperature and time at that temperature. Decomposition can occur below the recommended processing temperature limit. At temperatures above the "conditions to avoid" temperature, thermal decomposition of the resin becomes rapid. Hazardous decomposition products: Carbon dioxide (CO ₂), Carbon monoxide, Hydrocarbons, Acrolein, Styrene
Hazardous reactions	: Polymerization will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

Maleic anhydride	
Dermal LD50	: 2,620 mg/kg , rabbit


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Oral LD50	:	1,000 mg/kg , rat
Inhalation	:	human Nasal irritation
Skin irritation	:	Corrosive
Eye irritation	:	Corrosive
Skin sensitization	:	guinea pig Causes sensitization. rat May cause sensitization by inhalation. human There are rare or inconclusive reports of human skin sensitization.
Carcinogenicity	:	Animal testing did not show any carcinogenic effects.
Mutagenicity	:	Did not cause genetic damage in cultured bacterial cells. Caused genetic damage in cultured mammalian cells. Evidence suggests this substance does not cause genetic damage in animals.
Reproductive toxicity	:	No toxicity to reproduction
Teratogenicity	:	Animal testing showed no developmental toxicity.

SECTION 12. ECOLOGICAL INFORMATION
Aquatic Toxicity
Maleic anhydride

96 h LC50	:	Pimephales promelas (fathead minnow) 83.5 mg/l
96 h LC50	:	Oncorhynchus mykiss (rainbow trout) 75 mg/l
48 h LC50	:	Daphnia magna (Water flea) 330 mg/l

Additional ecological information : No data is available on the product itself. Toxicity is expected to be

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low based on insolubility in water.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal : Preferred options for disposal are recycling, incineration with energy recovery, and landfill. The high fuel value of this product makes incineration very desirable for material that cannot be recycled. Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/provincial, and local regulations.

SECTION 14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. REGULATORY INFORMATION

TSCA Status : In compliance with TSCA Inventory requirements for commercial purposes.

SARA 313 Regulated Chemical(s) : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65 : Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

PA Right to Know Regulated Chemical(s) : Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Talc (Mg₃H₂(SiO₃)₄) , Kieselguhr, Soda Ash Flux-Calcined

NJ Right to Know Regulated Chemical(s) : Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Talc



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(Mg₃H₂(SiO₃)₄) , Kieselguhr, Soda Ash Flux-Calcined

SECTION 16. OTHER INFORMATION

Restrictions for use : Do not use DuPont materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless the material has been provided from DuPont under a written contract that is consistent with DuPont policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your DuPont representative. You may also request a copy of the DuPont POLICY Regarding Medical Applications H-50103-3 and DuPont CAUTION Regarding Medical Applications H-50102-3.

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.

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