

**2-(polyfluoroalkyl)ethyl-1-sulfonyl chloride in toluene**

Version 2.0

Revision Date 01/08/2010

Ref. 13000052170

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 : 2-(polyfluoroalkyl)ethyl-1-sulfonyl chloride in toluene
Tradename/Synonym : 1-Alkanesulfonyl chloride, polyfluoro-

MSDS Number : 13000052170
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

Toluene : May cause skin irritation. Systemic toxicity

Eyes

Toluene : May cause eye irritation. Pain, Blurred vision.

Inhalation

Toluene : May cause irritation of respiratory tract. nervous system effects such as, dizziness, confusion, incoordination, drowsiness, or unconsciousness, Nausea, narcosis.

Ingestion

Toluene : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Symptoms may be delayed., Aspiration hazard if swallowed - can enter lungs and cause damage..

Repeated exposure

Toluene : Adverse effects from repeated exposure may include: Liver effects Kidney effects Hearing disturbances Central nervous system effects Possible risk of harm to the unborn child.

Target Organs

Toluene : Central nervous system Respiratory Tract Liver Kidney

Carcinogenicity

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


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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
1H,1H,2H,2H-PERFLUORO-1-OCTANESULFONYL CHLORIDE	27619-89-2	45 - 50 %
Toluene	108-88-3	25 - 32 %
3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-Heptadecafluorodecanesulfonyl chloride	27619-90-5	10 - 20 %
3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-Heneicosafuoro-1-dodecansulfonyl chloride	27619-91-6	2 - 8 %
3,3,4,4,5,5,6,6,6-Nonafluorohexane-1-sulfonyl chloride	27619-88-1	0 - 3 %
3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-Pentacosafuoro-1-tetradecanesulfonyl chloride	68758-57-6	0 - 3 %

SECTION 4. FIRST AID MEASURES

Skin contact	: Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Consult a physician. Wash contaminated clothing before re-use.
Eye contact	: Immediately flush eye(s) with plenty of water. Call a physician.
Inhalation	: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Ingestion	: Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician.

SECTION 5. FIRE-FIGHTING MEASURES

Flammable Properties	
Flash point	: 4 °C (39 °F) closed cup
Autoignition temperature	: 535 °C (995 °F)
Lower explosion limit	: 1.2 vol%
Upper explosion limit	: 7 vol%
Suitable extinguishing media	: Water spray, Foam, Dry chemical, Carbon dioxide (CO ₂)
Firefighting Instructions	: Wear self-contained breathing apparatus (SCBA). Wear suitable protective equipment. Evacuate personnel and keep upwind of fire.



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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.

- Safeguards (Personnel) : Ensure adequate ventilation. Use personal protective equipment. Evacuate personnel to safe areas. Remove all sources of ignition.
- Spill Cleanup : Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Dispose of in an approved container.
- Accidental Release Measures : Dispose of in accordance with local regulations.

SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Avoid inhalation. Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling. Wash clothing after use.
- Storage : Keep away from heat, sparks and flames. Keep tightly closed. Grounding and elimination of the static charge is recommended. Keep in a well-ventilated place. Store in a clean, dry place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Personal protective equipment
 - Respiratory protection : Use NIOSH approved respiratory protection.
 - Eye protection : Wear safety glasses or coverall chemical splash goggles.
 - Skin and body protection : Where there is potential for skin contact have available and wear as appropriate impervious gloves, apron, pants, and jacket.

Exposure Guidelines

Exposure Limit Values

Toluene

PEL (Permissible Exposure Limit)	(OSHA)	200 ppm	TWA
PEL (Permissible Exposure Limit)	(OSHA)	300 ppm	TLV-C
PEL (Permissible Exposure Limit)	(OSHA)	500 ppm	MAX. CONC
TLV	(ACGIH)	20 ppm	TWA
			Skin designation
AEL *	(DUPONT)	50 ppm	8 & 12 hr. TWA, Skin
TWA	(TN OEL)	100 ppm	375 mg/m3 time weighted average
STEL	(TN OEL)	150 ppm	580 mg/m3 Short term exposure limit



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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	: liquid
Color	: brown
Boiling point/boiling range	: 110.6 °C (231.1 °F)
% Volatile	: 20 - 40 %
Vapour Pressure	: 10 - 22 mm Hg
Specific Gravity	: 1.5 - 1.6
Water solubility	: insoluble

SECTION 10. STABILITY AND REACTIVITY

Stability	: Stable at normal temperatures and storage conditions. Unstable with static charges.
Incompatibility	: Strong bases
Hazardous decomposition products	: Under fire conditions:, Carbon dioxide (CO ₂), Carbon monoxide, Hydrogen fluoride

SECTION 11. TOXICOLOGICAL INFORMATION

1H,1H,2H,2H-PERFLUORO-1-OCTANESULFONYL CHLORIDE

Skin irritation	: Corrositex® Non-corrosive
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Toluene

Dermal LD50	: 12,124 mg/kg, rabbit
Oral LD50	: 636 mg/kg, rat Malaise
Oral LD50	: 5,300 mg/kg, rat
Inhalation 4 h LC50	: 49 mg/l, rat Incoordination Central nervous system effects
Inhalation 4 h LC50	: 28.1 mg/l, rat narcosis
Skin irritation	: Species: rabbit Irritating to skin., Skin irritation


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Eye irritation	:	Species: rabbit Mild eye irritation
Skin sensitization	:	Species: human There are no reports of human skin sensitization.
Repeated dose toxicity	:	Oral, rat mortality, Adverse body weight effects Inhalation Liver effects, Pathologic changes, Respiratory Tract, Adverse body weight effects Inhalation, human Central nervous system effects, Chronic exposure damages the brain and the central nervous system.
Carcinogenicity	:	An increased incidence of tumours was observed in some laboratory animals but not in others., Overall weight of evidence indicates that the substance is not carcinogenic.
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects., Caused genetic damage in animals.
Reproductive toxicity	:	Reduced sperm count
Teratogenicity	:	Has been reported to cause:, Behavioural effects in offspring

SECTION 12. ECOLOGICAL INFORMATION
Aquatic Toxicity
Toluene

96 h LC50	:	Goldfish 13 mg/l
96 h LC50	:	Oncorhynchus mykiss (rainbow trout) 5.8 mg/l
72 h EC50	:	Pseudokirchneriella subcapitata 12.5 mg/l
48 h EC50	:	Daphnia 11.5 mg/l

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal : Dispose of in accordance with local regulations.

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SECTION 14. TRANSPORT INFORMATION**SECTION 15. REGULATORY INFORMATION**

TSCA Status	: Listed.
SARA 313 Regulated Chemical(s)	: Toluene
CERCLA Reportable Quantity	: 3,367 lbs Based on the percentage composition of this chemical in the product.: Toluene
California Prop. 65	: WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Toluene
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): Toluene
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): Toluene

SECTION 16. OTHER INFORMATION

MSDS preparation date : 01/08/2010
Contact person : MSDS Coordinator, DuPont Chemical Solutions Enterprise, Wilmington, DE 19898, (800) 441-7515

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.

Significant change from previous version is denoted with a double bar.



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