



Version 1.0

Safety Data Sheet

According to Regulation (EC) No 1907/2006, Annex II.

Amended by COMMISSION REGULATION (EU) 2020/878.

Amended by COMMISSION DELEGATED REGULATION (EU) 2023/707.

According to REGULATION (EC) No 1272/2008

4-Thiophenyl phenyl diphenyl sulfonium hexafluoroantimonate; PI-SS-059

Issue date: 20-02-2024

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CIRS SDS Record Number: CSSS-TCO-010-158493

Section 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier:

Identification on the label/Trade name: 4-Thiophenyl phenyl diphenyl sulfonium hexafluoroantimonate
Additional identification: Nanoform is NOT covered by this SDS.
Identification of the product: CAS# 71449-78-0 EC# N/A
Index Number: Not available
REACH registration No.: Not available

1.2 Relevant identified uses of the substance or mixture and uses advised against:

1.2.1 Identified uses:

Cationic curing materials, 3D printing, etc.

1.2.2 Uses advised against:

No uses advised against are identified.

Section 2 Hazards identification

2.1 Classification of the substance or mixture:

2.1.1 Classification of the substance:

The substance is classified as following according to REGULATION (EC) No 1272/2008:

REGULATION (EC) No 1272/2008	
Hazard classes/Hazard categories	Hazard statement
Acute Tox. 4	H302
Skin Sens. 1A	H317
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

For full text of H-phrases: see section 2.2.

2.2 Label elements:

Hazard pictogram(s):



Signal word:

Warning

Hazard statement(s):

H302: Harmful if swallowed.

H317: May cause an allergic skin reaction.

H410: Very toxic to aquatic life with long lasting effects.

Precautionary statement(s):

P261: Avoid breathing dust/fume/gas/mist/vapours/spray.

P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P272: Contaminated work clothing should not be allowed out of the workplace.

P273: Avoid release to the environment.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P301 + P312: IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P302 + P352: IF ON SKIN: Wash with plenty of water.

P330: Rinse mouth.

P333 + P313: If skin irritation or rash occurs: Get medical advice/attention.

P362 + P364: Take off contaminated clothing and wash it before reuse.

P391: Collect spillage.

P501: Dispose of contents/container in accordance with local regulations.

Supplemental Hazard information (EU)

Not applicable.

2.3 Other hazards:

The substance is not PBT / vPvB.

The substance is not identified as having endocrine disrupting properties.

Section 3 Composition/information on ingredients

Substance/Mixture:

Substance

Ingredient(s):

Chemical Name	Registration No.	CAS No.	EC No.	Concentration	Specific Concentration limits, M-Factors, Acute Toxicity Estimates (ATE)
4-Thiophenyl phenyl diphenyl sulfonium hexafluoroantimonate	N/A	71449-78-0	N/A	≥99.0%	M=100 M(Chronic)=10

Section 4 First aid measures

4.1 Description of first aid measures:

In all cases of doubt, or when symptoms persist, seek medical attention.

4.1.1 In case of inhalation:

Remove person to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention, if you feel unwell.

4.1.2 In case of skin contact:

Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.

4.1.3 In case of eyes contact:

Rinse cautiously with water for 15 minutes or more. Get medical advice/attention immediately.

4.1.4 In case of ingestion:

Rinse mouth. Do not induce vomiting. Get medical advice/attention immediately.

4.2 Most important symptoms and effects, both acute and delayed:

Harmful if swallowed. May cause an allergic skin reaction.

4.3 Indication of any immediate medical attention and special treatment needed:

If skin irritation or rash occurs, get medical advice/attention.

Section 5 Firefighting measures

5.1 Extinguishing media:

Suitable extinguishing media: Carbon dioxide, dry chemical powder, foam, water fog.

Unsuitable extinguishing media: Water jet.

5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released: Harmful gases (e.g. HF).

5.3 Advice for firefighters:

Eliminate all ignition sources, and use suitable extinguishing media. Spray water on the surrounding equipment for cooling. Extinguish from upwind to prevent poisonous gas from being inhaled. Appropriate protective equipment (gloves, glasses and mask) must be worn.

Section 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

6.1.1 For non-emergency personnel: Wear appropriate protective equipment (gloves and glasses, etc.).

6.1.2 For emergency responders: Wear an appropriate NIOSH/MSHA approved respirator if dust is generated.

6.2 Environmental precautions:

Do not allow spillage out into the environment causing pollution e.g. rivers and waterways.

6.3 Methods and material for containment and cleaning up:

Contain spillage by making on embankment of earth, sand, etc., and collect into container(s) by shoveling or vacuuming.

In case of small spillage, absorb with sand, sawdust, etc.

In case of very small spillage, wipe clean with the rag.

6.4 Reference to other sections:

See Section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

Section 7 Handling and storage

7.1 Precautions for safe handling:

7.1.1 Protective measures: Handle in a well-ventilated area. Wear safety glasses, gloves and face protection, etc. Do not breathe dust. Wash hands and face thoroughly after handling. Rinse mouth.

7.1.2 Advice on general occupational hygiene: Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities:

Keep container tightly closed and store in a well-ventilated place.

7.3 Specific end use(s):

Not applicable.

Section 8 Exposure controls/personal protection

8.1 Control parameters:

8.1.1 Occupational exposure limits: Not available.

8.1.2 Additional exposure limits under the conditions of use: Not available.

8.1.3 DNEL/DMEL and PNEC-Values: Not available.

8.2 Exposure controls:

8.2.1 Appropriate engineering controls: Handle in accordance with good industrial hygiene and safety practice. Wash

hands before breaks and at the end of workday.

8.2.2 Individual protection measures, such as personal protective equipment:

Eye/face protection:	Safety glasses.
Skin protection	
Hand protection:	Impervious gloves.
Body protection:	Protective shoes. Work clothes with long sleeves.
Respiratory protection:	Not required under normal conditions.
Thermal hazards:	Wear suitable protective clothing to prevent heat.

8.2.3 Environmental exposure controls: Avoid discharge into the environment. According to local regulations, Federal and official regulations.

Section 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Physical state:	Solid
	Crystal powder
Colour:	White
Odour:	Slight smell
Odour threshold:	Not available
pH:	Not available
Melting point/freezing point (°C):	122 °C
Boiling point or initial boiling point and boiling range (°C):	Not available
Flash point (°C):	> 300 °C
Evaporation rate:	Not available
Flammability limit - lower (%):	Not available
Flammability (gas, liquid, solid):	Not available
Ignition temperature (°C):	Not available
Lower and upper explosion limit:	Not available
Vapour pressure (25°C):	<= 0.002 Pa
Relative vapour density:	Not available
Relative Density (g/cm³):	1.67 (19°C)
Bulk density (kg/m³):	Not available
Solubility in water (g/l, 20°C):	1.02 E-04 g/L
Solubility in other polar and non-polar solvents (g/l, 20°C):	n-octanol: 0.032 g/L
Partition coefficient n-octanol/water (log Po/w, 20°C):	log Pow: -0.426
Auto-ignition temperature:	Not available
Decomposition temperature:	ca. 346 °C
Kinematic viscosity (mm²/s):	Not available
Particle characteristics:	The percentage of test item having an inhalable particle size of less than 100 µm was determined to be 7.49%.
Explosive properties:	Not available
Oxidising properties:	Not available
Molecular Formula:	C24H19S2.SbF6
Molecular Weight:	607.27

9.2. Other information:

Fat solubility(solvent-oil to be specified)	Not available
etc:	
Surface tension:	Not available
Dissociation constant in water(pKa):	Not available
Oxidation-reduction Potential:	Not available

Section 10 Stability and Reactivity

10.1 Reactivity:	The substance is stable under normal storage and handling conditions.
10.2 Chemical stability:	Stable under normal conditions. Gradual decomposition when exposed to light.
10.3 Possibility of hazardous reactions:	No dangerous reactions known.
10.4 Conditions to avoid:	Incompatible materials. Sunlight.
10.5 Incompatible materials:	Strong oxidising agents, acids, etc.
10.6 Hazardous decomposition products:	Harmful gases (e.g. HF).

Section 11 Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008:

Acute toxicity:

LD50(Oral, Rat): > 300 mg/kg bw female

LD50(Dermal, Rabbit): Not available

LC50(Inhalation, Rat): Not available

Skin corrosion/irritation: Not classified

Serious eye damage/irritation: Not classified

Respiratory or skin sensitization: May cause an allergic skin reaction.

Germ cell mutagenicity: Not classified

Carcinogenicity: Not classified

Reproductive toxicity: Not classified

STOT- single exposure: Not classified

STOT-repeated exposure: Not classified

Aspiration hazard: Not classified

11.2 Information on other hazards

Endocrine disrupting properties The substance is not identified as having endocrine disrupting properties.

Other information Not applicable

Section 12 Ecological information

12.1 Toxicity:

Acute (short-term) toxicity:

LC50(96h, Fish): Not available

EC50(48h, Crustacea): 0.25 mg/L

EC50(72h, Algae/aquatic plants): 0.003 mg/L

Chronic (long-term) toxicity:

NOEC(Fish): Not available

NOEC(Crustacea): Not available

NOEC(Algae/aquatic plants): 0.002 mg/L

12.2 Persistence and degradability: Under test conditions no biodegradation observed.

12.3 Bioaccumulative potential: Not available

12.4 Mobility in soil:	Not available
12.5 Results of PBT and vPvB assessment:	The substance is not PBT / vPvB.
12.6 Endocrine disrupting properties:	The substance is not identified as having endocrine disrupting properties.
12.7 Other adverse effects:	Not available.
12.8 Additional information	Not available.

Section 13 Disposal considerations

13.1 Waste treatment methods:	Dispose of in accordance with all applicable local and national regulations. Use recovery/recycling where feasible, otherwise incineration is the recommended method of disposal. Empty containers may contain hazardous residues. Do not cut, puncture or weld on or near to the container. Labels should not be removed from containers until they have been cleaned. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers.
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Section 14 Transport Information

	Land transport (ADR/RID)	Inland waterways (ADN)	Sea transport (IMDG)	Air transport (ICAO/IATA)
14.1 UN number or ID number	UN3077	UN3077	UN3077	UN3077
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (4-Thiophenyl phenyl diphenyl sulfonium hexafluoroantimonate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (4-Thiophenyl phenyl diphenyl sulfonium hexafluoroantimonate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (4-Thiophenyl phenyl diphenyl sulfonium hexafluoroantimonate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (4-Thiophenyl phenyl diphenyl sulfonium hexafluoroantimonate)
14.3 Transport hazard class(es)	9	9	9	9
14.4 Packing group	III	III	III	III
14.5 Environmental hazards	Yes	Yes	Yes	Yes
14.6 Special precautions for user	See section 2.2	See section 2.2	See section 2.2	See section 2.2
14.7 Maritime transport in bulk according to IMO instruments	IBC08	IBC08	IBC08	IBC08

Section 15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

Relevant information regarding authorization: Not applicable.

Relevant information regarding restriction: Not applicable.

Other EU regulations:

Employment restrictions concerning young person must be observed. For use only by technically qualified individuals.

Other National regulations:

Not applicable

15.2 Chemical Safety Assessment

YES

NO

Section 16 Other information

16.1 Indication of changes:

Version 1.0 Amended by (EU) 2020/878, (EU) 2023/707

16.2 Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulations concerning the International Carriage of Dangerous Goods by Rail

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

IMDG: Code international maritime dangerous goods code

ICAO: International Civil Aviation Organization

IATA: International Air Transport Association

LC50: median lethal concentration

EC50: The effective concentration of substance that causes 50% of the maximum response.

NOEC: No Observed Effect Concentration

DNEL: derived no-effect level

PNEC: predicted no-effect concentration

16.3 Key literature references and sources for data

ECHA Registered substances data

16.4 Classification and procedure used to derive the classification for mixtures according to Regulation (EC)**1272/2008 [CLP]**

Classification according to Regulation (EC) No. 1272/2008		Classification procedure
Acute Tox. 4	H302	On basis of test data
Skin Sens. 1A	H317	On basis of test data
Aquatic Acute 1	H400	On basis of test data
Aquatic Chronic 1	H410	On basis of test data

16.5 Relevant H-statements (number and full text):

H302: Harmful if swallowed.

H317: May cause an allergic skin reaction.

H400: Very toxic to aquatic life.

H410: Very toxic to aquatic life with long lasting effects.

16.6 Training instructions:

Not applicable.

16.7 Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

16.8 Notice to reader:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.