

Safety Data Sheet according to (EC) No 1907/2006

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DFC-4011

1 Identification of Substance/Preparation & Company

Trade Name: DFC-4011 (Stannous Chloride Hemihydrate, ultra pure)

Intended Use: Tin Plating, Fabric Dyeing, Optoelectronics, Glass Manufacture/Processing, General Reagent

Manufacturer:

Dawnmist Fine Chemicals
(A Division of Dawnmist Studio)
PO Box 348
Exeter EX4 2YQ
United Kingdom
+44 1392 493 482

Email address of person responsible for Safety Data Sheet:

tech@dawnmist.org

Emergency Information:

+44 1392 493 482

2 Hazards Identification

R 22-38: Harmful if swallowed. Irritating to skin.

S 26-36/37/38-45: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show label where possible).

Pictogram: Harmful (irritant).

3 Composition/information on ingredients

General Chemical Description:

Stannous chloride hemihydrate, ultra pure.

Declaration of ingredients according to EC/1907/2006:

CAS-No	EC-No	Content	Classification
(*)	EC 231-868-0	> 99.8%, > 99.95% TMB	R:22-38 S:26-36/37/38-45

(*) No CAS number can be found for the hemihydrate form. The EC number covers all hydration levels.

For full text of any R- or S-phrases see section 2 above.

4 First aid measures

Inhalation:

Move person to fresh air. If not breathing give artificial respiration. Consult a physician.

Skin Contact:

Immediately remove contaminated clothes, shoes etc. Wash off with soap and plenty of water. Consult a physician if a visible reaction or pain occurs.

Eye Contact:

Rinse well for at least 15 minutes using water, consult a physician.

Ingestion:

Do **not** induce vomiting. Never give anything by mouth to an unconscious patient; if the patient is conscious, wash mouth out with water. Consult a physician.

5 Fire-fighting measures

Combustion behaviour:

Not combustible in itself, but may form corrosive fumes in a fire.

Special protection for firefighters:

Wear self-contained breathing apparatus if necessary.

Fire-extinguishing media:

Water, AFFF, dry powder or carbon dioxide — according to what other materials are involved in the fire.

6 Accidental release measures

Personal precautions:

Use personal protective equipment. Avoid dust formation where possible. Avoid breathing dust if formed. Work in an adequately ventilated area if there is any risk of dust formation, and in the event of a release of dust, move personnel to fresh air.

Environmental precautions:

Do not allow product to enter drains.

Clean-up methods:

Pick up and place in closed disposal containers without forming dust. A damp cloth can help with pickup but the cloth must also be disposed of as for the product itself. Product in aqueous solution can be neutralized to harmless products by treating with an excess of aqueous sodium bicarbonate: products of reaction are common salt (sodium chloride, aqueous solution) and tin dioxide (hydrated, solid).

7 Handling and Storage

Handling:

Avoid formation of dust and aerosols. Provide appropriate ventilation at any point where dust is formed.

Storage:

Keep container tightly closed and in a dry area. To maintain optimum purity, store under inert gas as it is a reducing agent and will slowly react with oxygen — faster at elevated

temperature. Unlike the more common *dihydrate* form of stannous chloride, DFC-4011 does *not* melt in a warm environment.

8 Exposure controls/personal protection

Respiratory Protection:

Risk assessment should be performed on any process involving this product in the dry powder form and any necessary engineering controls to effect sufficient respiratory protection should be implemented (also see above re face masks). When product is in solution, as it will be in most applications, there is no dust risk.

Hand protection:

Wear gloves meeting EN374.

Eye protection:

Face shield and/or safety glasses.

General hygiene measures:

Follow normal industrial safety and hygiene practices; wash hands before breaks and at end of work in case of trace contamination.

9 Physical & chemical properties

General:

Form Fine powder (may cohere, especially if damp)
Colour White

Physical/Chemical properties:

pH	not relevant as dry powder
Melting Point	246 °C (lit)
Boiling Point	652 °C (lit)
Flash point	not applicable
Ignition temperature	no data available
Lower explosive limit	no data available
Upper explosive limit	no data available
Solubility	Water, many organic solvents (especially alcohols)

10 Stability and reactivity

Conditions to avoid:

Reducing agent — degraded by exposure to oxygen — but otherwise stable in storage.

Materials to avoid:

Strong bases, strong oxidants, extremely strong reductants (e.g. alkali metals), carbides, boron halides.

Hazardous decomposition products:

In fire conditions (temperature exceeding 600°C) can form hydrogen chloride gas.

11 Toxicological Information

Oral toxicity:

LD50 in *rats* — 616 mg/kg (lit); harmful if swallowed: can damage mucosa.

Inhalative toxicity:

Prolonged or repeated exposure may cause allergy in predisposed persons. Acute exposure can be destructive to mucosa of upper respiratory system.

Skin irritation:

Prolonged or repeated exposure may cause allergy or chemical dermatitis in predisposed persons. Systemic toxicity may be theoretically possible if a large enough area of skin is exposed for an extended period. Liable to cause skin irritation if not washed off promptly.

Eye irritation:

Severe irritation, *rabbit* — 4 hours (lit). May damage eye tissue if not washed out promptly.

Other remarks:

Not known or suspected to be carcinogenic; causes reproductive toxicity in *rats*. No data on reproductive toxicity in *humans*.

12 Ecological information

Mobility:

No data available.

Persistence & biodegradability:

No data available.

Bioaccumulative potential:

No data available.

General ecological information:

No data available.

13 Disposal considerations

Product disposal:

Observe local regulations on chemical waste disposal. Incineration in a properly designed chemical incinerator is recommended. Where permitted, solutions can be rendered safe for landfill by treatment with an excess of calcium carbonate or sodium bicarbonate.

Disposal of uncleaned packages:

Treat as for product.

14 Transport information

DFC-4011 does not fall within any category of the UPU 'Dangerous Substances' definitions and may therefore be shipped by normal means (post, courier etc) in reasonable quantities provided that it is properly sealed, dry, in an unbreakable container which is protected against unintentional opening.

DFC-4011 is shipped by the manufacturer in strong HDPE containers with triple redundant seal, well-packed in a sturdy outer box, for unit quantities of 1kg or less.