**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

- **1.1 Product identifier**
  - Trade name: delta-Tris[(1S,2S)-1,2-diphenyl-1,2-ethanediame]cobalt(III) chloride tetrakis(2,3,4,5,6-?pentafluorophenyl)borate trihydrate SKJ-3

- **Item number:** 27-4011
- **CAS Number:** 1867120-15-7

- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
  No further relevant information available.

- **1.3 Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** Strem Chemicals, Inc.
    7 Mulliken Way
    NEWBURYPORT, MA 01950
    USA
    info@strem.com

- **Further information obtainable from:** Technical Department

- **1.4 Emergency telephone number:**
  - EMERGENCY: CHEMTREC: + 1 (800) 424-9300
  - During normal opening times: +1 (978) 499-1600

**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
  - Classification according to Regulation (EC) No 1272/2008
    The substance is not classified according to the CLP regulation.

- **2.2 Label elements**
  - Labelling according to Regulation (EC) No 1272/2008 Void
  - Hazard pictograms Void
  - Signal word Void
  - Hazard statements Void

- **Precautionary statements**
  - P262 Do not get in eyes, on skin, or on clothing.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P403+P233 Store in a well-ventilated place. Keep container tightly closed.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **2.3 Other hazards**
  - Results of PBT and vPvB assessment
    - **PBT:** Not applicable.
    - **vPvB:** Not applicable.
Trade name: delta-Tris[(1S,2S)-1,2-diphenyl-1,2-ethanediamine]cobalt(III) chloride tetrakis(2,3,4,5,6-\(\text{pentafluorophenyl}\))borate trihydrate SKJ-3

SECTION 3: Composition/information on ingredients

- 3.1 Chemical characterisation: Substances
- CAS No. Description
  1867120-15-7 delta-Tris[(1S,2S)-1,2-diphenyl-1,2-ethanediamine]cobalt(III) chloride tetrakis[3,5-bis(trifluoromethyl)phenyl]borate trihydrate SKJ-3

SECTION 4: First aid measures

- 4.1 Description of first aid measures
  - General information: No special measures required.
  - After inhalation: Supply fresh air; consult doctor in case of complaints.
  - After skin contact: Generally the product does not irritate the skin.
  - After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
  - After swallowing: If symptoms persist consult doctor.
- 4.2 Most important symptoms and effects, both acute and delayed: No further relevant information available.
- 4.3 Indication of any immediate medical attention and special treatment needed: No further relevant information available.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media
  - Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
- 5.2 Special hazards arising from the substance or mixture: No further relevant information available.
- 5.3 Advice for firefighters
  - Protective equipment: No special measures required.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures: Not required.
- 6.2 Environmental precautions: Do not allow to enter sewers/surface or ground water.
- 6.3 Methods and material for containment and cleaning up:
  Dispose contaminated material as waste according to item 13.
- 6.4 Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling: No special measures required.
- 7.2 Conditions for safe storage, including any incompatibilities
  - Storage:
    - Requirements to be met by storerooms and receptacles: No special requirements.
    - Information about storage in one common storage facility: Not required.
    - Further information about storage conditions: None.
SECTION 8: Exposure controls/personal protection

7.3 Specific end use(s) No further relevant information available.

8.1 Control parameters
- Ingredients with limit values that require monitoring at the workplace: Not required.
- Additional information: The lists valid during the making were used as basis.

8.2 Exposure controls
- Personal protective equipment:
  - General protective and hygienic measures: The usual precautionary measures are to be adhered to when handling chemicals.
  - Respiratory protection: Not required.
  - Protection of hands:

  Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- Material of gloves
  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- Penetration time of glove material
  The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- Eye protection: Safety glasses

9.1 Information on basic physical and chemical properties
- General Information
  - Appearance:
    - Form: Powder
    - Colour: Orange
  - Odour: Characteristic
  - Odour threshold: Not determined.

- pH-value: Not applicable.

- Change in condition
  - Melting point/freezing point: Undetermined.
  - Initial boiling point and boiling range: Undetermined.

- Flash point: Not applicable.

- Flammability (solid, gas): Product is not flammable.

- Ignition temperature:
  - Decomposition temperature: Not determined.
  - Auto-ignition temperature: Not determined.

- Explosive properties: Product does not present an explosion hazard.
Trade name: delta-Tris[(1S,2S)-1,2-diphenyl-1,2-ethanediamine]cobalt(III) chloride tetrakis(2,3,4,5,6-
?pentafluorophenyl)borate trihydrate SKJ-3

· Explosion limits:
  Lower: Not determined.
  Upper: Not determined.

· Vapour pressure: Not applicable.

· Density:
  Relative density: Not determined.
  Vapour density: Not applicable.
  Evaporation rate: Not applicable.

· Solubility in / Miscibility with water: Insoluble.

· Partition coefficient: n-octanol/water: Not determined.

· Viscosity:
  Dynamic: Not applicable.
  Kinematic: Not applicable.

· Solvent content:
  Organic solvents: 0.0 %
  VOC (EC): 0.00 %

· Solids content: 100.0 %

· 9.2 Other information
  No further relevant information available.

SECTION 10: Stability and reactivity

· 10.1 Reactivity
  No further relevant information available.

· 10.2 Chemical stability

· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

· 10.3 Possibility of hazardous reactions
  No dangerous reactions known.

· 10.4 Conditions to avoid
  No further relevant information available.

· 10.5 Incompatible materials:
  No further relevant information available.

· 10.6 Hazardous decomposition products:
  No dangerous decomposition products known.

SECTION 11: Toxicological information

· 11.1 Information on toxicological effects

· Acute toxicity
  Based on available data, the classification criteria are not met.

· Primary irritant effect:

· Skin corrosion/irritation
  Based on available data, the classification criteria are not met.

· Serious eye damage/irritation
  Based on available data, the classification criteria are not met.

· Respiratory or skin sensitisation
  Based on available data, the classification criteria are not met.

· CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

· Germ cell mutagenicity
  Based on available data, the classification criteria are not met.

· Carcinogenicity
  Based on available data, the classification criteria are not met.

· Reproductive toxicity
  Based on available data, the classification criteria are not met.

· STOT-single exposure
  Based on available data, the classification criteria are not met.

· STOT-repeated exposure
  Based on available data, the classification criteria are not met.
44.1.1 · Aspiration hazard Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· 12.1 Toxicity
· Aquatic toxicity: No further relevant information available.
· 12.2 Persistence and degradability No further relevant information available.
· 12.3 Bioaccumulative potential No further relevant information available.
· 12.4 Mobility in soil No further relevant information available.
· Additional ecological information:
· General notes:
  Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
  Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· 12.5 Results of PBT and vPvB assessment
  · PBT: Not applicable.
  · vPvB: Not applicable.
· 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods
· Recommendation Disposal must be made according to official regulations.
· Uncleaned packaging:
· Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

· 14.1 UN-Number
· ADR, ADN, IMDG, IATA not regulated
· 14.2 UN proper shipping name
· ADR, ADN, IMDG, IATA not regulated
· 14.3 Transport hazard class(es)
· ADR, ADN, IMDG, IATA not regulated
· Class not regulated
· 14.4 Packing group
· ADR, IMDG, IATA not regulated
· 14.5 Environmental hazards:
  Not applicable.
· 14.6 Special precautions for user
  Not applicable.
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
  Not applicable.
· UN "Model Regulation": not regulated
SECTION 15: Regulatory information

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

- Directive 2012/18/EU
- Named dangerous substances - ANNEX I Substance is not listed.

National regulations:

- Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Department issuing SDS: Technical Department.
- Contact: Technical Director
- Abbreviations and acronyms:
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - VOC: Volatile Organic Compounds (USA, EU)
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative