



**DESIGN REPORT OF SAFETY DATA SHEET**

No.: 220100320411411E

Date: Mar.1,2022

|  |   |                 |  |
|--|---|-----------------|--|
| <b>Name of the sample</b>                  | Tc-E Cobalt Octoate Solution  |                 |  |
| <b>Applicant</b>                           | Evergreen Chemicals Co., Ltd.   |                 |  |
| <b>Supplier</b>                            | Evergreen Chemicals Co., Ltd.   |                 |  |
| <b>Composition of the sample</b>           | Cobalt bis(2-ethylhexanoate): 10%; Styrene: 90%   |                 |  |
| <b>Warranty of Design</b>                  | GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS) Ninth revised edition |                 |  |
| Design Result of SDS please see next page. |   |                 |  |
| <b>Designer</b>                            | 孙越越   | <b>Approver</b> | <i>For and on behalf of</i><br><b>CCIC JIANGSU CO., LTD.</b><br>中国检验认证集团江苏有限公司<br>王珍 |



4 授权签字人 Authorized Signature (s)

Notes: This SDS is valid before the implementation of the Tenth revised edition GHS.



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## Section 1 Product and Company Identification

### > Product Identifier

|                   |                              |
|-------------------|------------------------------|
| Product Name      | Tc-E Cobalt Octoate Solution |
| Synonyms          | -                            |
| CAS No.           | Not applicable               |
| EC No.            | Not applicable               |
| Molecular Formula | Not applicable               |

### > Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

|                          |                              |
|--------------------------|------------------------------|
| Relevant Identified Uses | Please consult manufacturer. |
| Uses Advised Against     | Please consult manufacturer. |

### > Details of the Supplier of the Safety Data Sheet

|                     |   |
|---------------------|---|
| Applicant Name      | Evergreen Chemicals Co., Ltd.                             |
| Application Address | Room 2308, Wuzhou International Square, Jiangyin, Jiangsu |
| Applicant Post Code | 214400  |
| Applicant Telephone | +86-17714007018   |
| Applicant Fax       | —   |
| Applicant E-mail    | info@evergreenchemicals.cn                                |
| Supplier Name       | Evergreen Chemicals Co., Ltd.                             |
| Supplier Address    | Room 2308, Wuzhou International Square, Jiangyin, Jiangsu |
| Supplier Post Code  | 214400  |
| Supplier Telephone  | +86-17714007018   |
| Supplier Fax        | —   |
| Supplier E-mail     | info@evergreenchemicals.cn                                |

### > Emergency Phone Number

|                        |                 |
|------------------------|-----------------|
| Emergency Phone Number | +86-17714007018 |
|------------------------|-----------------|

## Section 2 Hazards Identification

Hazard class and label elements of the product according to GHS (the ninth revised edition):

### > GHS Hazard Class

|                   |            |
|-------------------|------------|
| Flammable Liquids | Category 3 |
|-------------------|------------|



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|  |             |
|--|-------------|
| <b>Acute Toxicity – Oral</b>   | Category 5  |
| <b>Skin</b>  | Category 2  |
| <b>Corrosion/Irritation</b>  | Category 2  |
| <b>Sensitization – Skin</b>  | Category 1  |
| <b>Eye Damage/Irritation</b>   | Category 2A |
| <b>Acute Toxicity – Inhalation</b>                                       | Category 4  |
| <b>Reproductive Toxicity</b>   | Category 1  |
| <b>Specific Target Organ Toxicity (Repeated Exposure)</b>                | Category 1  |
| <b>Hazardous To The Aquatic Environment – Short-Term (Acute) Hazard</b>  | Category 2  |
| <b>Hazardous To The Aquatic Environment – Long-Term (Chronic) Hazard</b> | Category 3  |

**> GHS Label Elements**

Pictogram



Signal Word

**Danger**

**> Hazard Statements**

|      |  |
|------|--|
| H226 | Flammable liquid and vapour                                    |
| H303 | May be harmful if swallowed                                    |
| H315 | Causes skin irritation   |
| H317 | May cause an allergic skin reaction                            |
| H319 | Causes serious eye irritation                                  |
| H332 | Harmful if inhaled   |
| H360 | May damage fertility or the unborn child                       |
| H372 | Causes damage to organs through prolonged or repeated exposure |
| H401 | Toxic to aquatic life  |
| H412 | Harmful to aquatic life with long lasting effects              |

**> Precautionary Statements**

Prevention

|      |  |
|------|--|
| P203 | Obtain,read and follow all safety instructions before use. |
|------|--|



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|                       |  |
|-----------------------|--|
| <b>P210</b>           | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.                                   |
| <b>P233</b>           | Keep container tightly closed.   |
| <b>P240</b>           | Ground and bond container and receiving equipment.   |
| <b>P241</b>           | Use explosion-proof [electrical/ventilating/lighting] equipment.   |
| <b>P242</b>           | Use non-sparking tools.  |
| <b>P243</b>           | Take action to prevent static discharges.  |
| <b>P260</b>           | Do not breathe dust/fume/gas/mist/vapours/spray.   |
| <b>P264+P265</b>      | Wash hands and other contact area thoroughly after handling. Do not touch eyes.  |
| <b>P270</b>           | Do not eat, drink or smoke when using this product.  |
| <b>P271</b>           | Use only outdoors or in a well-ventilated area.  |
| <b>P272</b>           | Contaminated work clothing should not be allowed out of the workplace.   |
| <b>P273</b>           | Avoid release to the environment.  |
| <b>P280</b>           | Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.                                    |
| <b>Response</b>       |  |
| <b>P317</b>           | Get medical help.  |
| <b>P318</b>           | IF exposed or concerned, get medical advice.   |
| <b>P319</b>           | Get medical help if you feel unwell.   |
| <b>P321</b>           | Specific treatment (see measures on this label).   |
| <b>P301+P317</b>      | IF SWALLOWED: Get medical help.  |
| <b>P304+P340</b>      | IF INHALED: Remove person to fresh air and keep comfortable for breathing.   |
| <b>P332+P317</b>      | If skin irritation occurs; Get medical help.   |
| <b>P333+P317</b>      | If skin irritation or rash occurs: Get medical help.   |
| <b>P337+P317</b>      | If eye irritation persists: Get medical help.  |
| <b>P362+P364</b>      | Take off contaminated clothing and wash it before reuse.   |
| <b>P370+P378</b>      | In case of fire: Use suitable extinguishing medium to extinguish.  |
| <b>P303+P361+P353</b> | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].               |
| <b>P305+P351+P338</b> | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| <b>Storage</b>        |  |
| <b>P405</b>           | Store locked up.   |
| <b>P403+P235</b>      | Store in a well-ventilated place. Keep cool.   |
| <b>Disposal</b>       |  |
| <b>P501</b>           | Dispose of contents/container in accordance with local/regional/national/ international regulations.                             |

### Section 3 Composition/Information on Ingredients



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| Component                    | CAS No.  | EC No.    | Concentration (weight percent, %) |
|------------------------------|----------|-----------|-----------------------------------|
| Cobalt bis(2-ethylhexanoate) | 136-52-7 | 205-250-6 | 10                                |
| Styrene                      | 100-42-5 | 202-851-5 | 90                                |

## Section 4 First Aid Measures

### > Description of First Aid Measures

|                                   |   |
|-----------------------------------|---|
| <b>General Advice</b>             | Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.   |
| <b>Eye Contact</b>                | Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.  |
| <b>Skin Contact</b>               | Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.  |
| <b>Ingestion</b>                  | Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.   |
| <b>Inhalation</b>                 | Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately. |
| <b>Protecting of First-aiders</b> | Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.  |

### > Most Important Symptoms and Effects, both Acute and Delayed

- 1 Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

### > Indication of Any Immediate Medical Attention and Special Treatment Needed

- 1 Treat symptomatically.
- 2 Symptoms may be delayed.

## Section 5 Fire Fighting Measures

### > Extinguishing Media

|                                       |   |
|---------------------------------------|---|
| <b>Suitable Extinguishing Media</b>   | Dry chemical, carbon dioxide or alcohol-resistant foam.           |
| <b>Unsuitable Extinguishing Media</b> | Do not use a solid water stream as it may scatter or spread fire. |

### > Specific Hazards Arising from the Substance or Mixture

- 1 Will form explosive mixtures with air.
- 2 Fire exposed containers may vent contents through pressure relief valves thereby increasing fire intensity and/or vapour concentration.
- 3 Vapours may travel to source of ignition and flash back.



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- 4 Liquid and vapour are flammable.
- 5 Containers may explode when heated.
- 6 Fire exposed containers may vent contents through pressure relief valves.
- 7 May expansion or decompose explosively when heated or involved in fire.

### > Advice for Firefighters

- 1 As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
- 2 Fight fire from a safe distance, with adequate cover.
- 3 Prevent fire extinguishing water from contaminating surface water or the ground water system.

## Section 6 Accidental Release Measure

### > Personal Precautions, Protective Equipment and Emergency Procedures

- 1 Avoid breathing vapors and contacting with skin and eye.
- 2 Beware of vapours accumulating to form explosive concentrations.
- 3 Vapours can accumulate in low areas.
- 4 Emergency personnel wear positive pressure self-contained breathing apparatus. Wear protective and anti-static clothing. Wear chemical impermeable gloves.
- 5 Ensure adequate ventilation. Remove all sources of ignition.
- 6 Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
- 7 Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

### > Environmental Precautions

- 1 Prevent further leakage or spillage if safe to do so.
- 2 Discharge into the environment must be avoided.

### > Methods and Materials for Containment and Cleaning Up

- 1 Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
- 2 Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.
- 3 Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

## Section 7 Handling and Storage

### > Precautions for Handling

- 1 Avoid inhalation of vapors.
- 2 Use only non-sparking tools.



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- 3 To prevent fire caused by electrostatic discharge steam, equipment on all metal parts should be grounded.
- 4 Use explosion proof equipment.
- 5 Handling is performed in a well ventilated place.
- 6 Wear suitable protective equipment.
- 7 Avoid contact with skin and eyes.
- 8 Keep away from heat/sparks/open flames/ hot surfaces.
- 9 Take precautionary measures against static discharges.

**> Precautions for Storage**

- 1 Keep containers tightly closed.
- 2 Keep containers in a dry, cool and well-ventilated place.
- 3 Keep away from heat/sparks/open flames/ hot surfaces.
- 4 Store away from incompatible materials and foodstuff containers.

**Section 8 Exposure Controls/Personal Protection**

**> Control Parameters**

**Occupational Exposure Limit Values**

| Component           | Country/Region | Limit Value - Eight Hours |                   | Limit Value - Short Term |                   |
|---------------------|----------------|---------------------------|-------------------|--------------------------|-------------------|
|                     |                | ppm                       | mg/m <sup>3</sup> | ppm                      | mg/m <sup>3</sup> |
| Styrene<br>100-42-5 | USA - OSHA     | 100                       | -                 | 200                      | -                 |
|                     | South Korea    | 20                        | 85                | 40                       | 170               |
|                     | Ireland        | 20                        | 85                | 40                       | 170               |
|                     | Germany (AGS)  | 20                        | 86                | 40                       | 172               |
|                     | Denmark        | 25                        | 105               | 25                       | 105               |
|                     | Australia      | 50                        | 213               | 100                      | 426               |

**Biological Limit Values**

No information available

**Monitoring Methods**

- 1 EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
- 2 GBZ/T 160 Determination of toxic substances in workplace air(Series effective standard)and GBZ/T 300 Determination of toxic substances in workplace air(Series standard).

**> Engineering Controls**

- 1 Ensure adequate ventilation, especially in confined areas.
- 2 Ensure that eyewash stations and safety showers are close to the workstation location.
- 3 Use explosion-proof electrical/ventilating/lighting/equipment.



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4 Set up emergency exit and necessary risk-elimination area.

### > Personal Protection Equipment

|                                 |  |
|---------------------------------|--|
| <b>Eye Protection</b>           | Tightly fitting safety goggles (approved by EN 166(EU) or NIOSH (US).  |
| <b>Hand Protection</b>          | Wear protective gloves (such as butyl rubber) , passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.   |
| <b>Respiratory protection</b>   | If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges. |
| <b>Skin and Body Protection</b> | Wear fire/flare resistant/retardant clothing and antistatic boots.   |

### Section 9 Physical and Chemical Properties

|  |  |
|--|--|
| <b>Appearance:</b> Blue purple liquid                                  | <b>Odor:</b> No information available  |
| <b>Odor Threshold:</b> No information available                        | <b>pH:</b> No information available  |
| <b>Melting Point/Freezing Point (°C):</b> No information available     | <b>Initial Boiling Point and Boiling Range (°C):</b> No information available  |
| <b>Flash Point (°C)( Closed Cup):</b> 28.5                             | <b>Evaporation Rate:</b> No information available  |
| <b>Flammability:</b> Not applicable                                    | <b>Upper/lower explosive limits[% (v/v)]:</b> Upper limit: No information available; Lower limit: No information available |
| <b>Vapor Pressure (KPa):</b> No information available                  | <b>Relative Vapour Density(Air=1):</b> No information available  |
| <b>Relative Density(Water=1):</b> No information available             | <b>Solubility:</b> No information available  |
| <b>n-Octanol/Water Partition Coefficient:</b> No information available | <b>Auto-Ignition Temperature(°C):</b> No information available   |
| <b>Decomposition Temperature (°C):</b> No information available        | <b>Kinematic Viscosity (mm<sup>2</sup>/s):</b> No information available  |
| <b>Particle characteristics:</b> Not applicable                        |  |

### Section 10 Stability and Reactivity

|   |  |
|---|--|
| <b>Reactivity</b>                         | Contact with incompatible substances can cause decomposition or other chemical reactions.            |
| <b>Chemical Stability</b>                 | Stable under proper operation and storage conditions.  |
| <b>Possibility of Hazardous Reactions</b> | In contact with halides may cause an active reaction.  |
| <b>Conditions to Avoid</b>                | Incompatible materials, heat, flame and spark.   |
| <b>Incompatible Materials</b>             | Halides, Oxidantss and halogen.  |
| <b>Hazardous Decomposition products</b>   | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |





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## Section 11 Toxicological Information

### > Acute Toxicity

| Component | CAS No.  | LD <sub>50</sub> (Oral) | LD <sub>50</sub> (Dermal) | LC <sub>50</sub> (Inhalation, 4h) |
|-----------|----------|-------------------------|---------------------------|-----------------------------------|
| Styrene   | 100-42-5 | 2650mg/kg(Rat)          | No information available  | 12mg/L(Rat)                       |

### > Skin Corrosion/Irritation

Causes skin irritation(Category 2)

### > Serious Eye Damage/Irritation

Causes serious eye irritation(Category 2A)

### > Skin Sensitization

May cause an allergic skin reaction(Category 1)

### > Respiratory Sensitization

No information available

### > Germ Cell Mutagenicity

No information available

### > Carcinogenicity

| ID | CAS No.  | Component                    | IARC        | NTP        |
|----|----------|------------------------------|-------------|------------|
| 1  | 136-52-7 | Cobalt bis(2-ethylhexanoate) | Category 2B | Not Listed |
| 2  | 100-42-5 | Styrene                      | Category 2B | Not Listed |

### > Reproductive Toxicity

May damage fertility or the unborn child(Category 1)

### > Reproductive Toxicity (Additional)

No information available

### > STOT-Single Exposure

No information available

### > STOT-Repeated Exposure

Causes damage to organs through prolonged or repeated exposure(Category 1)



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> **Aspiration Hazard**

No information available

**Section 12 Ecological Information**

> **Acute Aquatic Toxicity**

| Component | CAS No.  | Fish                                  | Crustaceans                      | Algae                              |
|-----------|----------|---------------------------------------|----------------------------------|------------------------------------|
| Styrene   | 100-42-5 | LC <sub>50</sub> : 25mg/L (96h)(Fish) | EC <sub>50</sub> : 4.7mg/L (48h) | ErC <sub>50</sub> : 0.72mg/L (96h) |

> **Chronic Aquatic Toxicity**

No information available

> **Others**

**Persistence and Degradability** No information available

**Bioaccumulative Potential** No information available

**Mobility in Soil** No information available

**Results of PBT and vPvB Assessment** Cobalt bis(2-ethylhexanoate) does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.  
Styrene does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.

**Section 13 Disposal Considerations**

**Waste Chemicals Contaminated Packaging Disposal Recommendations** Before disposal should refer to the relevant national and local laws and regulation. Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible. Refer to Waste chemicals and Contaminated packaging.

**Section 14 Transport Information**

**Transporting Label**



**Marine pollutant** No

**UN Number** 1993

**UN Proper Shipping Name** FLAMMABLE LIQUID,N.O.S.

**Transport Hazard Class** 3



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Transport Subsidiary  
Hazard Class  
Packing Group

NONE  
III

**Section 15 Regulatory Information**

> International Chemical Inventory

| Component                    | EINECS | TSCA | DSL | IECSC | NZIoC | PICCS | KECI | AICS | ENCS |
|------------------------------|--------|------|-----|-------|-------|-------|------|------|------|
| Cobalt bis(2-ethylhexanoate) | √      | √    | √   | √     | √     | √     | √    | √    | √    |
| Styrene                      | √      | √    | √   | √     | √     | √     | √    | √    | √    |

- [EINECS] European Inventory of Existing Commercial Chemical Substances.
- [TSCA] United States Toxic Substances Control Act Inventory.
- [DSL] Canadian Domestic Substances List.
- [IECSC] China Inventory of Existing Chemical Substances.
- [NZIoC] New Zealand Inventory of Chemicals.
- [PICCS] Philippines Inventory of Chemicals and Chemical Substances.
- [KECI] Existing and Evaluated Chemical Substances.
- [AICS] Australia Inventory of Chemical Substances.
- [ENCS] Existing And New Chemical Substances.

Note

- "√" Indicates that the substance included in the regulations
- "x" That no data or included in the regulations

**Section 16 Additional Information**

Creation Date Mar.1,2022  
Revision Date Mar.1,2022  
Reason for Revision -

> Disclaimer

This Safety Data Sheet (SDS) was prepared according to UN GHS (the 9th revised edition). The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.



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**Terms of the Using of the Report**

1. The report is issued by CCIC according to the information of the chemicals and the information of its shipping provided by the applicant (shipper or his agent).
2. According to the demand of this SDS, CCIC requires the applicant to provide true and exact sample and data.
3. Information from applicant is the key of this SDS, so CCIC will not respond for the wrong of applicant.
4. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested.
5. This report will be effective only after it is signed by the inspector, approver and stamped by CCIC.
6. CCIC guarantees the objectivity and fairness of this report, and carries out confidentiality obligations on business secrets such as business information, technical documents and so on.
7. The partly duplicating of this report is prohibited without the written approver of CCIC.
8. The report is invalid when anything of the following happens-illegal transfer, embezzlement, imposture, modification or tampering in any media form.

