

# SAFETY DATA SHEET

## CIRCOSOL 5100T

000003010780



Version 1.2

Revision Date 2024/09/04

Print Date 2024/09/04

### SECTION 1. IDENTIFICATION

Product name : CIRCOSOL 5100T  
Synonyms : TDAE  
Product code: 104449

#### Manufacturer or supplier's details

HollyFrontier Specialty Products  
1700 South Union Avenue  
Tulsa OK 74107  
United States  
Telephone : Customer Service: (800) 456-4786

#### Emergency telephone number

Emergency telephone number : CHEMTREC: 1-800-424-9300; CCN: 999116  
Poison Control Centre: Consult local telephone directory for emergency number(s).

#### Recommended use of the chemical and restrictions on use

Recommended use : Process Oil  
Prepared by : Product Safety

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a hazardous substance or mixture.

#### GHS label elements

No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

#### Other hazards

None known.

#### IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

#### NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance  
Substance name : TDAE  
Product code: 104449

CAS-No. : 64741-88-4

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### Components

| Chemical name  | CAS-No.    | Concentration (% w/w) |
|--|------------|-----------------------|
| Distillates (petroleum), solvent-refined heavy paraffinic; Baseoil — unspecified | 64741-88-4 | 100                   |

Actual concentration is withheld as a trade secret

### SECTION 4. FIRST AID MEASURES

- If inhaled : Move to fresh air.  
Artificial respiration and/or oxygen may be necessary.  
Seek medical advice.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.  
Wash skin thoroughly with soap and water or use recognized skin cleanser.  
Wash clothing before reuse.  
Seek medical advice.
- In case of eye contact : Remove contact lenses.  
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
Obtain medical attention.
- If swallowed : Rinse mouth with water.  
DO NOT induce vomiting unless directed to do so by a physician or poison control center.  
Never give anything by mouth to an unconscious person.  
Seek medical advice.
- Most important symptoms and effects, both acute and delayed : First aider needs to protect himself.
- Notes to physician : Treat symptomatically.

### SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : Do NOT use water jet.
- Specific hazards during fire-fighting : Cool closed containers exposed to fire with water spray.
- Hazardous combustion products : Carbon oxides (CO, CO<sub>2</sub>), smoke and irritating vapours as products of incomplete combustion.
- Further information : Prevent fire extinguishing water from contaminating surface water or the ground water system.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.  
Ensure adequate ventilation.  
Evacuate personnel to safe areas.

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Material can create slippery conditions.  
Mark the contaminated area with signs and prevent access to unauthorized personnel.  
Only qualified personnel equipped with suitable protective equipment may intervene.

Environmental precautions : Do not allow uncontrolled discharge of product into the environment.

Methods and materials for containment and cleaning up : Prevent further leakage or spillage if safe to do so.  
Remove all sources of ignition.  
Soak up with inert absorbent material.  
Non-sparking tools should be used.  
Ensure adequate ventilation.  
Contact the proper local authorities.

### SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : None known.

Advice on safe handling : For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
Use only with adequate ventilation.  
In case of insufficient ventilation, wear suitable respiratory equipment.  
Avoid contact with skin, eyes and clothing.  
Do not ingest.  
Keep away from heat and sources of ignition.  
Keep container closed when not in use.  
Do not handle at temperatures >40°C, unless wearing appropriate protective equipment.

Conditions for safe storage : Store in original container.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Keep in a dry, cool and well-ventilated place.  
Keep in properly labelled containers.  
To maintain product quality, do not store in heat or direct sunlight.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

| Components  | CAS-No.    | Value type (Form of exposure)      | Control parameters / Permissible concentration | Basis     |
|---|------------|------------------------------------|--|-----------|
| Distillates (petroleum), solvent-refined heavy paraffinic;<br>Baseoil — unspecified | 64741-88-4 | TWA (Mist)                         | 5 mg/m3  | OSHA Z-1  |
|   |            | TWA (Inhalable particulate matter) | 5 mg/m3  | ACGIH     |
|   |            | TWA (Mist)                         | 5 mg/m3  | OSHA P0   |
|   |            | TWA (Mist)                         | 5 mg/m3  | NIOSH REL |

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|                                      | ST (Mist)  | 10 mg/m3 | NIOSH REL |
|--------------------------------------|--|----------|-----------|
| <b>Engineering measures</b>          | : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants.  |          |           |
| <b>Personal protective equipment</b> |  |          |           |
| Respiratory protection               | : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. |          |           |
| Filter type                          | : organic vapour filter  |          |           |
| Hand protection                      |  |          |           |
| Material                             | : neoprene, nitrile, polyvinyl alcohol (PVA), Viton®.  |          |           |
| Remarks                              | : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.  |          |           |
| Eye protection                       | : Wear face-shield and protective suit for abnormal processing problems.   |          |           |
| Skin and body protection             | : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.   |          |           |
| Protective measures                  | : Wash contaminated clothing before re-use.  |          |           |
| Hygiene measures                     | : Remove and wash contaminated clothing and gloves, including the inside, before re-use.<br>Wash face, hands and any exposed skin thoroughly after handling.   |          |           |

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

|                               |   |
|-------------------------------|---|
| Appearance                    | : liquid  |
| Colour                        | : dark green                                    |
| Odour                         | : slight  |
| Odour Threshold               | : No data available                             |
| pH                            | : Not applicable                                |
| Pour point                    | : 32 °C (90 °F)                                 |
| Boiling point/boiling range   | : 397 - 572 °C (747 - 1062 °F)                  |
| Flash point                   | : 235 °C (455 °F)<br>Method: Cleveland open cup |
| Fire Point                    | : No data available                             |
| Evaporation rate              | : No data available                             |
| Flammability                  | : Remarks: No data available                    |
| Auto-Ignition Temperature     | : No data available                             |
| Upper explosion limit / Upper | : No data available                             |

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|  |  |
|--|--|
| flammability limit                               |  |
| Lower explosion limit / Lower flammability limit | : No data available  |
| Vapour pressure                                  | : No data available  |
| Relative vapour density                          | : No data available  |
| Relative density                                 | : 0.93 (61 °F / 16 °C)   |
| Density  | : No data available  |
| Solubility(ies)                                  |  |
| Water solubility                                 | : insoluble  |
| Partition coefficient: n-octanol/water           | : No data available  |
| Decomposition temperature                        | : No data available  |
| Viscosity  |  |
| Viscosity, kinematic                             | : 305 cSt (104 °F / 40 °C)   |
|  | 18 cSt (212 °F / 100 °C)   |
|  | 1413 sus (100 °F / 38 °C)  |
| Explosive properties                             | : Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. |
| Molecular weight                                 | : 501 g/mol  |
| Particle size                                    | : No data available  |

### SECTION 10. STABILITY AND REACTIVITY

|                                    |  |
|------------------------------------|--|
| Reactivity                         | : No dangerous reaction known under conditions of normal use.  |
| Chemical stability                 | : Stable under normal conditions.  |
| Possibility of hazardous reactions | : Hazardous polymerisation does not occur.   |
| Conditions to avoid                | : Heat, flames and sparks.   |
| Incompatible materials             | : Reactive with oxidising agents.  |
| Hazardous decomposition products   | : Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

### SECTION 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

Eye contact  
Ingestion  
Inhalation  
Skin contact

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### Acute toxicity

#### Product:

- Acute oral toxicity : Remarks: No data available
- Acute inhalation toxicity : Remarks: No data available
- Acute dermal toxicity : Remarks: No data available

#### Components:

##### **Distillates (petroleum), solvent-refined heavy paraffinic; Baseoil — unspecified:**

- Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,
- Acute inhalation toxicity : LC50 (Rat): > 5 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour
- Acute dermal toxicity : LD50 (Rabbit): > 3,000 mg/kg,

### Skin corrosion/irritation

#### Product:

- Remarks : Non-irritating to the skin. Heated material can cause thermal burns.

### Serious eye damage/eye irritation

#### Product:

- Remarks : Non-irritating to the eyes. Heated material can cause thermal burns.

### Respiratory or skin sensitisation

#### Product:

- Exposure routes : Skin contact
- Species : Guinea pig
- Result : Not a skin sensitizer.
- Remarks : No evidence of skin sensitization.

### Germ cell mutagenicity

#### Product:

- Genotoxicity in vitro : Remarks: Not considered to be a germ cell mutagen.

### Carcinogenicity

#### Product:

- Remarks : The mineral oils in the product contain < 3% DMSO extract (IP 346). Not considered to be carcinogenic.

### Reproductive toxicity

#### Product:

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Effects on fertility : Remarks: Not considered to be toxic to the reproductive system.

Effects on foetal development : Remarks: Not considered to be teratogenic.

### STOT - single exposure

#### Product:

Remarks : Acute exposure studies show no evidence of systemic toxicity.

### STOT - repeated exposure

#### Product:

Remarks : Repeat dose toxicity data shows no evidence of target organ toxicity.

### Aspiration toxicity

#### Product:

Not expected to be an aspiration hazard.

### Further information

#### Product:

Remarks : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

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## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Product:

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Toxicity to algae/aquatic plants : Remarks: No data available

Toxicity to microorganisms : Remarks: No data available

#### Components:

#### **Distillates (petroleum), solvent-refined heavy paraffinic; Baseoil — unspecified :**

Toxicity to fish : LL50 (Fish): > 1,000 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia (water flea)): > 1,000 mg/l  
Exposure time: 48 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EL50 (Daphnia (water flea)): > 1,000 mg/l  
Exposure time: 21 d

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### Persistence and degradability

#### Product:

Biodegradability : Result: Inherently biodegradable.

### Bioaccumulative potential

No data available

### Mobility in soil

No data available

### Other adverse effects

#### Product:

Additional ecological information : This product has no known ecotoxicological effects.

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.  
Offer surplus and non-recyclable solutions to a licensed disposal company.  
Waste must be classified and labelled prior to recycling or disposal.  
Send to a licensed waste management company.  
Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.

Contaminated packaging : Do not re-use empty containers.

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## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### IATA-DGR

Not regulated as a dangerous good

#### IMDG-Code

Not regulated as a dangerous good

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

### National Regulations

#### 49 CFR

Not regulated as a dangerous good

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## SECTION 15. REGULATORY INFORMATION

### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

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**SARA 311/312 Hazards** : No SARA Hazards

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### Clean Water Act

Not applicable

### US State Regulations

#### Massachusetts Right To Know

Distillates (petroleum), solvent-refined heavy paraffinic; 64741-88-4  
Baseoil — unspecified:

#### Pennsylvania Right To Know

Distillates (petroleum), solvent-refined heavy paraffinic; 64741-88-4  
Baseoil — unspecified

#### New Jersey Right To Know

Distillates (petroleum), solvent-refined heavy paraffinic; 64741-88-4  
Baseoil — unspecified

#### New York City Hazardous Substances

Distillates (petroleum), solvent-refined heavy paraffinic; 64741-88-4  
Baseoil — unspecified

**California Prop. 65** This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

### The components of this product are reported in the following inventories:

TSCA : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

AIIC : On the inventory, or in compliance with the inventory

DSL : On the inventory, or in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

EINECS : On the inventory, or in compliance with the inventory

TCSI : On the inventory, or in compliance with the inventory

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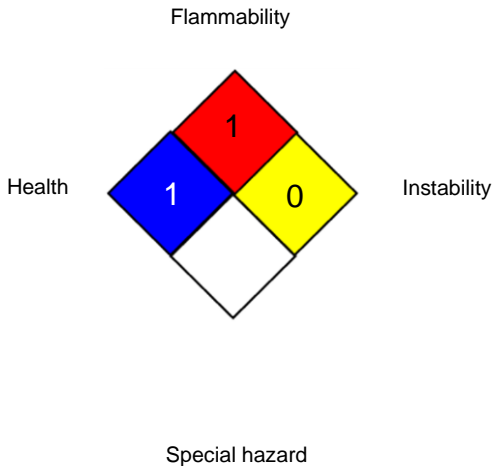
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### SECTION 16. OTHER INFORMATION

#### Further information

##### NFPA 704:



##### HMIS® IV:

|                 |  |   |
|-----------------|--|---|
| HEALTH          |  | 1 |
| FLAMMABILITY    |  | 1 |
| PHYSICAL HAZARD |  | 0 |

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

#### Full text of other abbreviations

|                 |   |   |
|-----------------|---|---|
| ACGIH           | : | USA. ACGIH Threshold Limit Values (TLV)   |
| NIOSH REL       | : | USA. NIOSH Recommended Exposure Limits  |
| OSHA P0         | : | USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)                        |
| OSHA Z-1        | : | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants          |
| ACGIH / TWA     | : | 8-hour, time-weighted average   |
| NIOSH REL / TWA | : | Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek |
| NIOSH REL / ST  | : | STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday    |
| OSHA P0 / TWA   | : | 8-hour time weighted average  |
| OSHA Z-1 / TWA  | : | 8-hour time weighted average  |

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International

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Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECl - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Prepared by : Product Safety

Revision Date : 2024/09/04  
Date format : yyyy/mm/dd

The information is considered as correct, but not exhaustive, and will be used only as a guide, which is based in the current knowledge of the substance or mixture, and is applicable to proper safety precautions for the product.

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.

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