



SAFETY DATA SHEET

PC99

Issuing Date: 16-May-2012

Revision Date: 17-May-2014

Version 3

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name PC99

UN/ID No UN3455

Synonyms p-cresol

Molecular Weight 108.14

Recommended use Chemical intermediate. Solvent mixture.

Manufacturer Sasol Chemicals (USA) LLC
1914 Haden Road, Houston, TX 77015-6498
Telephone: (713) 428-5400

Emergency telephone

| Call Center | Region | Number |
|-------------|---|------------------------------------|
| NCEC | Europe, Israel, Africa, Americas | +44 (0) 2087 628 322 |
| | Middle East, Arabic African Countries (where European languages are spoken) | +44 (0) 1235 239 670 |
| | Middle East/Africa (where Arabic is spoken) | +44 (0) 1235 239 671 |
| | Asia Pacific | +65 3158 1074 |
| | China | +86 10 5100 3039 |
| SCC | Australia | +61 2801 44558 |
| | Southern Africa (Sasol Call Centre) | +27 17 610 4444 +27 800 112 890 |
| Chemtrec® | North America | +1 800 424 9300 |
| | World Wide | +1 703 527 3887 |

2. HAZARDS IDENTIFICATION

GHS - Classification

| | |
|-----------------------------------|--------------|
| Acute oral toxicity | Category 3 |
| Acute dermal toxicity | Category 3 |
| Skin corrosion/irritation | Category 1 b |
| Serious eye damage/eye irritation | Category 1 |
| Acute aquatic toxicity | Category 2 |
| Chronic aquatic toxicity | Category 3 |

GHS Label elements, including precautionary statements



Signal Word: DANGER

Hazard statements

- Toxic if swallowed
- Toxic in contact with skin
- Causes severe skin burns and eye damage
- Toxic to aquatic life
- Harmful to aquatic life with long lasting effects

Physical hazards

- Not classified

Precautionary Statements - EU (§28, 1272/2008)

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection

P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor/ physician

P273 - Avoid release to the environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS-No | Weight % | EC-No |
|---------------|----------|----------|-----------|
| p-Cresol | 106-44-5 | 99 | 203-398-6 |
| m-Cresol | 108-39-4 | 1 | 203-577-9 |

4. FIRST AID MEASURES

General advice

Immediate medical attention is required.

Main symptoms

Salivation. Tremors. Convulsions. Erythema. Burn. Dizziness. Hypoactivity.

Eye contact

Immediate medical attention is required. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.

| | |
|-----------------------------------|--|
| Skin contact | Immediate medical attention is required. Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Apply PEG/EtOH solution liberally to affected area. Allow to remain 15 to 30 seconds, then wash with water. Continue cycle of water - PEG/EtOH solution for at least 15 minutes. (PEG/EtOH solution consists of 2 parts polyethylene glycol 400 to 1 part ethanol. For external use only). Finish decontamination with thorough washing using soap and water. |
| Inhalation | Move to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. |
| Ingestion | Immediate medical attention is required. Do NOT induce vomiting. Rinse mouth. Ingest immediately about 350 ml (5 ml/kg body weight) of activated charcoal slurry. Note: To prepare activated charcoal slurry, mix thoroughly 50 g of activated charcoal in 400 ml (about 2 cups) water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. |
| Notes to physician | Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically. |
| Protection of first-aiders | Use personal protective equipment. Avoid contact with skin, eyes and clothing. |

5. FIRE-FIGHTING MEASURES

Flammable properties

May cause fire.

Suitable Extinguishing Media

Dry chemical, Foam, Water spray, Carbon dioxide (CO₂).

Unsuitable Extinguishing Media

Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

In the event of fire and/or explosion do not breathe fumes. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

Protective equipment and precautions for firefighters

Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Evacuate personnel to safe areas. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Keep people away from and upwind of spill/leak.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Should not be released into the environment. Prevent product from entering drains.

Methods for containment

Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers).

Methods for cleaning up Soak up with inert absorbent material. Take up mechanically and collect in suitable container for disposal. Clean contaminated surface thoroughly. Prevent product from entering drains.

OTHER INFORMATION Refer to protective measures listed in sections 7 and 8.

7. HANDLING AND STORAGE

Advice on safe handling Provide adequate information, instruction and training for operators. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

Technical measures/Storage conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Keep away from open flames, hot surfaces and sources of ignition.

Incompatible products Incompatible with strong acids and bases. Incompatible with oxidizing agents, copper alloys, aluminum.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure guidelines

| Chemical Name | ACGIH TLV | NIOSH REL | OSHA PEL | Ontario TWA | European Union |
|---------------|--|--|-----------------|--------------------|----------------|
| p-Cresol | TWA: 20 mg/m ³ inhalable fraction and vapor S* | IDLH: 250 ppm TWA: 2.3 ppm TWA: 10 mg/m ³ | 5 ppm (cresols) | TWA: 5 ppm Skin | |
| m-Cresol | TWA: 20 mg/m ³ inhalable fraction and vapor S* | IDLH: 250 ppm TWA: 2.3 ppm TWA: 10 mg/m ³ | 5 ppm (cresols) | TWA: 5 ppm Skin | |

| Chemical Name | China | Japan | Korea | Australia | Taiwan |
|---------------|---|--|---|-----------|--------|
| p-Cresol | TWA: 10 mg/m ³ STEL: 20 mg/m ³ Skin | TWA: 5 ppm TWA: 22 mg/m ³ ISHL/ACL: 5 ppm | Skin TWA: 5 ppm TWA: 22 mg/m ³ | | |
| m-Cresol | TWA: 10 mg/m ³ STEL: 20 mg/m ³ Skin | TWA: 5 ppm TWA: 22 mg/m ³ ISHL/ACL: 5 ppm | Skin TWA: 5 ppm TWA: 22 mg/m ³ | | |

| Chemical Name | Mexico | Brazil | Argentina | Venezuela | India |
|---------------|--------|--------|--------------------|-----------|---|
| p-Cresol | | | TWA: 5 ppm Skin | | TWA: 5 ppm TWA: 22 mg/m ³ Skin |
| m-Cresol | | | TWA: 5 ppm Skin | | TWA: 5 ppm TWA: 22 mg/m ³ Skin |

Engineering measures

Handle only in a place equipped with local exhaust (or other appropriate exhaust). Drain down and flush system prior to equipment break-in or maintenance. Carry out filling operations only at stations with exhaust ventilation facilities. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Face-shield.

Skin and body protection

Wear as appropriate: Impervious clothing; Impervious gloves; Boots; Chemical resistant apron.

Hand protection

Fluorinated rubber, Chloroprene, Polyvinylchloride, Break through time, >60 min. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. When using, do not eat, drink or smoke. Wash hands and face before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use. Contaminated work clothing should not be allowed out of the workplace. Provide regular cleaning of equipment, work area and clothing. Keep away from food, drink and animal feeding stuffs.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--|--------------------------------------|
| Physical State @20°C appearance | Solid white to Amber, crystalline |
| Odor | Phenolic |
| Odor Threshold | No information available |
| pH | 5.5 |
| Melting point/range | 34 °C |
| Boiling point/boiling range | 202 °C |
| Flash point | 94 °C |
| Evaporation rate | No information available |
| Flammability Limits in Air | |
| upper | 7.6 |
| lower | 1.1 |
| Oxidizing properties | not applicable |
| Vapor density | 3.72 |
| Specific Gravity | 1.04 |
| Water solubility | 20 g/L @ 25 °C |
| Partition coefficient: | 1.94 |
| Autoignition temperature | 559 °C |
| Viscosity, dynamic | 4 cp @ 50 °C |
| Molecular Weight | 108.14 |

Dust explosion properties

10. STABILITY AND REACTIVITY

| | |
|---|---|
| Stability | Stable under normal conditions. |
| Conditions to avoid | Heat, flames and sparks. |
| Incompatible products | Incompatible with strong acids and bases, Incompatible with oxidizing agents, copper alloys, aluminum. |
| Hazardous decomposition products | Thermal decomposition can lead to release of irritating gases and vapors. Carbon monoxide. Carbon dioxide (CO ₂). |
| Hazardous reactions | None under normal processing. |

11. TOXICOLOGICAL INFORMATION

Product Information

| | |
|---------------|-----------|
| Oral | 207 mg/kg |
| Dermal | 301 mg/kg |

Inhalation**Component Information**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---------------|---------------------|--|-------------------------------------|
| p-Cresol | = 207 mg/kg (Rat) | = 750 mg/kg (Rat) = 130 mg/kg (Rabbit) | > 710 mg/m ³ (Rat) 1 h |
| m-Cresol | = 242 mg/kg (Rat) | = 2050 mg/kg (Rabbit) | > 710 mg/m ³ (Rat) 1 h |

Chronic toxicity**Carcinogenicity**

There are no known carcinogenic chemicals in this product.

IARC: (International Agency for Research on Cancer)

Group 3: Not classifiable as to its carcinogenicity to humans

Irritation

Causes severe irritation and or burns.

Sensitization

None known.

Mutagenic effects

Not classified due to inconclusive data.

Reproductive toxicity

This product does not contain any known or suspected reproductive hazards.

Developmental Toxicity

NOAEL: 175 mg/kg/d.

Target Organ Effects

Pancreas, Central nervous system (CNS), Central Vascular System (CVS), Eyes, Kidney, Liver, Respiratory system, Skin, Central nervous system (CNS), Central Vascular System (CVS), Eyes, Kidney, Liver, Pancreas, Respiratory system, Skin.

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

| Chemical Name | Toxicity to algae | Toxicity to fish | Toxicity to microorganisms | Toxicity to daphnia and other aquatic invertebrates |
|---------------|-------------------|--|--|---|
| p-Cresol | | LC50 96 h: 15.9 - 17 mg/L flow-through (<i>Pimephales promelas</i>) LC50 96 h: = 19 mg/L static (<i>Pimephales promelas</i>) LC50 96 h: = 7.5 mg/L flow-through (<i>Oncorhynchus mykiss</i>) | EC50 = 160 mg/L 24 h EC50 = 2.06 mg/L 5 min EC50 = 2.31 mg/L 15 min EC50 = 2.37 mg/L 30 min | EC50 48 h: = 21.1 mg/L (<i>Daphnia magna</i>) |
| m-Cresol | | LC50 96 h: = 7.6 mg/L static (<i>Salvelinus fontinalis</i>) | EC50 = 6.82 mg/L 5 min EC50 = 7.48 mg/L 15 min EC50 = 7.83 mg/L 30 min | LC50 48 h: = 18.8 mg/L (<i>Daphnia magna</i>) |

Persistence and degradability

Readily biodegradable. The product can be degraded by abiotic (e.g. chemical or photolytic) processes.

Bioaccumulative potential

Not likely to bioaccumulate

Mobility

Not expected to adsorb on soil. The product evaporates slowly.

| Chemical Name | log Pow |
|---------------|---------|
| p-Cresol | 1.94 |
| m-Cresol | 1.96 |

13. DISPOSAL CONSIDERATIONS**Waste from residues / unused products**

Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. The aqueous medium should be given appropriate treatment as waste water in line with local regulations.

Contaminated packaging

Do not re-use empty containers. Dispose of in accordance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal. Can be incinerated, when in compliance with local regulations. Where possible recycling is preferred to disposal or incineration.

14. TRANSPORT INFORMATION**IMDG/IMO**

| | |
|--------------------------------|--|
| Proper Shipping Name | Cresols, solid, molten |
| Hazard class | 6.1 |
| Subsidiary hazard class | 8 |
| UN/ID No | UN3455 |
| Packing group | II |
| EmS No. | F-A, S-B |
| Description | UN3455, Cresols, solid, molten, 6.1, (8), II |

ICAO/IATA

| | |
|--------------------------------|--|
| UN/ID No | UN3455 |
| Proper Shipping Name | Cresols, solid, molten |
| Hazard class | 6.1 |
| Subsidiary hazard class | 8 |
| Packing group | II |
| ERG Code | 6C |
| Description | UN3455, Cresols, solid, molten, 6.1, (8), II |

DOT

| | |
|-----------------------------|--|
| Proper Shipping Name | Cresols, solid, molten |
| Hazard class | 6.1 |
| Subsidiary Class | 8 |
| UN/ID No | UN3455 |
| Packing group | II |
| Description | UN3455, Cresols, solid, molten, 6.1, (8), II |

ADR/RID

| | |
|-----------------------------|--|
| Proper Shipping Name | Cresols, solid, molten |
| Hazard class | 6.1 |
| UN/ID No | UN3455 |
| Packing group | II |
| Classification Code | TC2 |
| Special Provisions | TU15 TE19 |
| Description | UN3455, Cresols, solid, molten, 6.1, (8), II |
| ADR/RID-Labels | 8 |

15. REGULATORY INFORMATION

International Inventories

All of the components in the product are on the following Inventory lists:

| | |
|----------------------|----------|
| TSCA | Complies |
| EINECS/ELINCS | Complies |
| DSL/NDSL | Complies |
| PICCS | Complies |
| ENCS | Complies |
| IECSC | Complies |
| AICS | Complies |
| KECL | Complies |

Legend

TSCA (Toxic Substances Control Act)

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

AICS - Australian Inventory of Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

RESTRICTIONS - REACH TITLE VIII No information available

U.S. FEDERAL REGULATIONS

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

| Chemical Name | CAS-No | Weight % | SARA 313 - Threshold Values % |
|---------------|----------|----------|-------------------------------|
| p-Cresol | 106-44-5 | 99 | 1.0 |
| m-Cresol | 108-39-4 | 1 | 1.0 |

SARA 311/312 Hazard Categories

| | |
|--|-----|
| Acute Health Hazard | yes |
| Chronic Health Hazard | no |
| Fire Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Reactive Hazard | no |

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

| Chemical Name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|---------------|-----------------------------|------------------------|---------------------------|----------------------------|
| p-Cresol | | | | X |
| m-Cresol | | | | X |

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

| Chemical Name | Hazardous Substances RQs | Extremely Hazardous Substances RQs | RQ |
|---------------|--------------------------|------------------------------------|---|
| p-Cresol | 100 lb | | RQ 100 lb final RQ RQ 45.4 kg final RQ |
| m-Cresol | 100 lb | | RQ 100 lb final RQ RQ 45.4 kg final RQ |

U.S. STATE REGULATIONS**U.S. State Right-to-Know Regulations**

| Chemical Name | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---------------|---------------|------------|--------------|----------|--------------|
| p-Cresol | X | X | X | X | |
| m-Cresol | X | X | X | X | |

| Chemical Name | NPRI |
|---------------|------|
| p-Cresol | X |
| m-Cresol | X |

Legend

NPRI - National Pollutant Release Inventory

16. OTHER INFORMATION

| | |
|---------------|---|
| Health Hazard | 3 |
| Fire Hazard | 1 |
| Reactivity | 0 |

Issuing Date: 16-May-2012

Revision Date: 17-May-2014

Disclaimer

The information provided in this Material 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.