



SAFETY DATA SHEET

CA44

Issuing Date: 21-Jun-2012

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Version 2

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

Product name CA44

UN/ID No UN2022

Synonyms Cresylic acid

Molecular Weight No information available

Recommended use Chemical intermediate. Synthesis of polymers. Solvent mixture.

Manufacturer Sasol Chemicals (USA) LLC
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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
Skin sensitization	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
- May cause an allergic skin reaction
- Toxic to aquatic life
- Harmful to aquatic life with long lasting effects

Physical hazards

Flammable liquids Category 4

- Combustible Liquid

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

P403 + P235 - Store in a well-ventilated place. Keep cool

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking

P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction

P273 - Avoid release to the environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %	EC-No
m-Cresol	108-39-4	20-40	203-577-9
3,5-Xylenol	108-68-9	20-40	203-606-5
p-Cresol	106-44-5	10-30	203-398-6
Phenol, 4-ethyl-	123-07-9	1-10	204-598-6
3-ethylphenol	620-17-7	1-10	210-627-3
3,4-Dimethylphenol	95-65-8	1-10	202-439-5
Alkylphenols	26998-80-1	1-10	248-158-1
o-Ethylphenol	90-00-6	1-10	201-958-4
2,3-xylenol	526-75-0	1-10	208-395-3
2,6-xylenol	576-26-1	1-10	209-400-1

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
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	
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	

Chemical Name	China	Japan	Korea	Australia	Taiwan
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		
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		

Chemical Name	Mexico	Brazil	Argentina	Venezuela	India
m-Cresol			TWA: 5 ppm Skin		TWA: 5 ppm TWA: 22 mg/m ³ Skin
p-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	Liquid clear to Amber
Odor	Antiseptic
Odor Threshold	No information available
pH	5.5
Melting point/range	< -20 °C
Boiling point/boiling range	190-220 °C
Flash point	92-94 °C
Evaporation rate	No information available
Flammability Limits in Air	
upper	8
lower	1
Vapor pressure	0.2 mmHg @ 25 °C
Vapor density	~ 4
Specific Gravity	1.03
Water solubility	20 g/L @ 25 °C
Partition coefficient:	2
Autoignition temperature	559 °C
Viscosity, dynamic	5 cp @ 50 °C
Molecular Weight	No information available

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

Acute toxicity 18% of the mixture consists of ingredient(s) of unknown toxicity.

Oral	299 mg/kg
Dermal	300 mg/kg
Inhalation	
gas	NA mg/l
Mist	NA mg/l
vapor	NA mg/l

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
m-Cresol	= 242 mg/kg (Rat)	= 2050 mg/kg (Rabbit)	> 710 mg/m ³ (Rat) 1 h
3,5-Xylenol	= 608 mg/kg (Rat)	> 800 mg/kg (Rat)	
p-Cresol	= 207 mg/kg (Rat)	= 750 mg/kg (Rat) = 130 mg/kg (Rabbit)	> 710 mg/m ³ (Rat) 1 h
3,4-Dimethylphenol	= 727 mg/kg (Rat)		
2,3-xylenol	= 562000 mg/m ³ (Rat)	= 1040000 mg/m ³ (Rabbit)	
2,6-xylenol	= 296 mg/kg (Rat)	= 1000 mg/kg (Rabbit) = 2325 mg/kg (Rat)	

Chronic toxicity

Carcinogenicity

There are no known carcinogenic chemicals in this product.

Irritation

Causes severe irritation and or burns.

Sensitization

May cause sensitization by skin contact.

Mutagenic effects

Not classified due to inconclusive data.

Reproductive toxicity

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

Developmental Toxicity

None known.

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

2% of the mixture consists of component(s) of unknown hazards to the aquatic environment.

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
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>)

3,5-Xylenol		LC50 96 h: = 13 mg/L (<i>Oncorhynchus mykiss</i>) LC50 96 h: = 22 mg/L static (<i>Carassius auratus</i>)	EC50 = 12.5 mg/L 15 min EC50 = 12.5 mg/L 30 min EC50 = 12.5 mg/L 5 min	EC50 48 h: = 24 mg/L (<i>Daphnia magna</i>)
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>)
Phenol, 4-ethyl-	EC50 48 h: = 168 mg/L (<i>Tetrahymena pyriformis</i>)	LC50 96 h: = 10.4 mg/L flow-through (<i>Pimephales promelas</i>)		
2,6-xylenol		LC50 96 h: = 27 mg/L flow-through (<i>Pimephales promelas</i>)		EC50 48 h: = 11.2 mg/L (<i>Daphnia magna</i>) EC50 48 h: = 11.2 mg/L Static (<i>Daphnia magna</i>)

Persistence and degradability

Inherently biodegradable.

Bioaccumulative potential

Not likely to bioaccumulate

Mobility

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

Chemical Name	log Pow
m-Cresol	1.96
3,5-Xylenol	2.06
p-Cresol	1.94
Phenol, 4-ethyl-	2.58
2,6-xylenol	2.36

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	Cresylic Acid
Hazard class	6.1
Subsidiary hazard class	8
UN/ID No	UN2022
Packing group	II
Description	UN2022, Cresylic Acid, 6.1, (8), II

ICAO/IATA

UN/ID No	UN2022
Proper Shipping Name	Cresylic Acid
Hazard class	6.1
Subsidiary hazard class	8
Packing group	II
Description	UN2022, Cresylic Acid, 6.1, (8), II

DOT

Proper Shipping Name	Cresylic Acid
Hazard class	6.1
Subsidiary Class	8
UN/ID No	UN2022
Packing group	II
Description	UN2022, Cresylic Acid, 6.1, (8), II

ADR/RID

Proper Shipping Name	Cresylic Acid
Hazard class	6.1
UN/ID No	UN2022
Packing group	II
Description	UN2022, Cresylic Acid, 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	-
PICCS	-
ENCS	Complies
IECSC	Complies
AICS	Complies
KECL	-

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 %
m-Cresol	108-39-4	20-40	1.0
p-Cresol	106-44-5	10-30	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	yes
Chronic Health Hazard	no
Fire Hazard	yes
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
m-Cresol				X
p-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
m-Cresol	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ
3,5-Xylenol	Xylenols		1000 lb
p-Cresol	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ
3,4-Dimethylphenol	Xylenols		1000 lb
2,3-xylenol	Xylenols		1000 lb
2,6-xylenol	Xylenols		1000 lb

U.S. STATE REGULATIONS

U.S. State Right-to-Know Regulations

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

Chemical Name	NPRI
m-Cresol	X
p-Cresol	X

Legend

NPRI - National Pollutant Release Inventory

16. OTHER INFORMATION



Health Hazard	3
Fire Hazard	2
Reactivity	0

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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.