AR-196 Concrete Resin Catalyst

SECTION 1. IDENTIFICATION

Product Identifier	AR-196 Concrete Resin Catalyst
Other Means of Identification	Cumene hydroperoxide
Other Identification	Organic Peroxide Liquid Mixture
Product Family	Organic Peroxide
Recommended Use	Polymerization initiator.
Restrictions on Use	None known.
Manufacturer/Supplier Identifier	The Stebbins Engineering and Manufacturing Company, 363 Eastern Boulevard, Watertown, NY, 13601, (315) 782-3000, www.stebbinseng.com
Emergency Phone No.	Chemtrec - Within North America, 1-800-424-9300, 24 hours Stebbins 24 Hour Contact-, 1-315-788-6624
SDS No.	053

SECTION 2. HAZARD IDENTIFICATION

Classification

Organic peroxide - Type F; Acute toxicity (Oral) - Category 4; Acute toxicity (Dermal) - Category 4; Acute toxicity (Inhalation) - Category 4; Skin corrosion - Category 1B; Serious eye damage - Category 1; Specific target organ toxicity (repeated exposure) - Category 2; Aspiration hazard - Category 1; Aquatic hazard (Acute) - Category 2; Aquatic hazard (Chronic) - Category 2

Label Elements



Signal Word:
Danger

Hazard Statement(s):
Organic peroxide, Type F
H242 Heating may cause a fire.
H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.
H304 May be fatal if swallowed and enters airways.
H314 Causes severe skin burns and eye damage.
H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.

Precautionary Statement(s):

Prevention:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
Keep away from dirt, rust, chemicals in particular.
P234 Keep only in original container.
P260 Do not breathe mist, vapours, spray.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P264 Wash hands and skin thoroughly after handling.
P281 Wear personal protective equipment/face protection.

Response:
P301 + P312 IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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 CENTRE or doctor.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use water spray or fog, appropriate foam, dry chemical powder, carbon dioxide to extinguish.
P381 In case of leakage, eliminate all ignition sources.
P390 Absorb spillage to prevent material damage.
P391 Collect spillage.

Storage:
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P410 Protect from sunlight.
P420 Store away from other materials.

Disposal:
P501 Dispose of contents and container in accordance with local, regional, national and international regulations.

Other Hazards

Incompatible with many common chemicals.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers	Other Names
Cumyl hydroperoxide	80-15-9	80 - 90 %	CHP	Cumene hydroperoxide
2-Phenylisopropanol	617-94-7	5 - 10 %	C9-H12-O	1-Hydroxycumene
Cumene	98-82-8	3 - 7%	C9H12	Cumol
Acetophenone	98-86-2	3 - 7%	ACP	Aromatic ketone

Notes

**This ingredient is a component of the complex mixture.
Concentrations are expressed in % weight/weight.

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Immediately call a Poison Centre or doctor. Move to fresh air. If breathing has stopped, trained personnel should begin rescue breathing. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor.

Skin Contact

Immediately rinse with lukewarm, gently flowing water for 15-20 minutes. If on clothing: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Clean clothing, shoes and leather goods. Get medical advice or attention if you feel unwell or are concerned.

Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. Remove contact lenses, if present and easy to do. Immediately call a Poison Centre or doctor.

Ingestion

Do not induce vomiting. Immediately call a Poison Centre or doctor. Rinse mouth with water. If vomiting occurs naturally, lie on your side in the recovery position. Rinse mouth with water again. Never give anything by mouth if person is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting.

Most Important Symptoms and Effects, Acute and Delayed

If in eyes: may cause serious eye damage. May irritate or burn the eyes. Permanent damage including blindness may result. If swallowed: can burn the lips, tongue, throat and stomach. If on skin: may cause moderate to severe irritation.

Immediate Medical Attention and Special Treatment

Target Organs

Eyes, digestive system, lungs.

Medical Conditions Aggravated by Exposure

Skin conditions, respiratory conditions, nervous system conditions.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog.

Unsuitable Extinguishing Media

Halons.

Specific Hazards Arising from the Product

Organic peroxide. Heating may cause a fire or explosion.
Very toxic carbon monoxide, carbon dioxide; acetophenone; 2-phenylisopropanol; methane.

Special Protective Equipment and Precautions for Fire-fighters

Before entry, especially into confined areas, use an appropriate monitor to check for: toxic gases or vapours, flammable or explosive atmosphere. Cool storage container with water, if exposed to fire. Dike and recover contaminated water for appropriate disposal.
Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Do not touch damaged containers or spilled product unless wearing appropriate protective equipment. Use the personal protective equipment recommended in Section 8 of this safety data sheet. Eliminate all ignition sources. Use grounded,

explosion-proof equipment. Remove or isolate incompatible materials as well as other hazardous materials. Before entry, especially into confined areas, check atmosphere with an appropriate monitor.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway.

Methods and Materials for Containment and Cleaning Up

Contain and soak up spill with absorbent that does not react with spilled product. Collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Do NOT use combustible materials such as sawdust. Dike spilled product to prevent runoff. Place used absorbent into suitable, covered, labelled containers for disposal. Review Section 13 (Disposal Considerations) of this safety data sheet.

Other Information

Report spills to local health, safety and environmental authorities, as required.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

No sparking tools should be used.
Keep away from open flames, hot surfaces and sources of ignition. Do not breathe in this product. Do not get in eyes, on skin or on clothing. Do not swallow. Only use where there is adequate ventilation. It is good practice to: avoid breathing product; avoid skin and eye contact and wash hands after handling.

Conditions for Safe Storage

Store in an area that is: cool, temperature-controlled, well-ventilated, out of direct sunlight and away from heat and ignition sources. Store in the original, labelled, shipping container. Store at temperatures not exceeding: 104°F (40°C) and below -22 °F (-30 °C).

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

	ACGIH TLV®		OSHA PEL		AIHA WEEL	
Chemical Name	**TWA**	**STEL**	**TWA**	**Ceiling**	**8-hr TWA**	**TWA**
Cumyl hydroperoxide	5 ppm		245 mg/m3		10 ppm	1 ppm

Cumyl hydroperoxide: AIHA WEEL/TWA: 6mg/m³

Cumene: OSHA TLV/TWA: 245 mg/m³, ACGIH TLV/TWA: 50 ppm, NIOSH REL/TWA: 245 mg/m³, NIOSH IDLH: 900 ppm

Acetophenone: ACGIH TLV/TWA: 10 ppm, AIHA WEEL/TWA: 50 mg/m³

Appropriate Engineering Controls

Use local exhaust ventilation, if general ventilation is not adequate to control amount in the air. Use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems in areas where this product is used and stored.

Individual Protection Measures

Eye/Face Protection

Wear approved safety glasses.

Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots.

Respiratory Protection

Wear a NIOSH approved air-purifying respirator with an organic vapour cartridge.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Clear yellow liquid. Particle Size: Not applicable
Odour	Aromatic
Odour Threshold	Not available
pH	Not available
Melting Point/Freezing Point	-22 ºF (-30 ºC) (melting); -22 ºF (-30 ºC) (freezing)
Boiling point/Initial boiling point	Not available
Boiling Range	Not applicable
Flash Point	> 158 ºF (70 ºC)
Evaporation Rate	Not available
Flammability (solid, gas)	Not applicable (liquid).
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	3.0 mm Hg (0.4 kPa) at 68 ºF (20 ºC)
Vapour Density (air = 1)	Not available
Relative Density (water = 1)	1.03 - 1.07 at 68 ºF (20 ºC)
Solubility	Soluble in water; Not available (in other liquids)
Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	Not applicable
Decomposition Temperature	158 ºF (70 ºC)
Viscosity	10.9 centistokes (kinematic); Not available (dynamic)

Other Information

Physical State	Liquid
Molecular Formula	Not applicable
Molecular Weight	Not applicable
Bulk Density	~ 66 lb/ft3 (1060 kg/m3)
Surface Tension	Not available
Critical Temperature	Not available
Electrical Conductivity	Not available
Vapour Pressure at 50 deg C	Not available
Saturated Vapour Concentration	Not available
Other Physical Property 1	Active Oxygen Content: 9.1-9.5%
Other Physical Property 2	Peroxide Content: 87-90%

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Product is stable under normal conditions.
Organic peroxide. Heating may cause a fire or explosion.

Chemical Stability

Stable under recommended storage conditions. See Storage, Section 7.

Unstable under certain conditions - see Conditions to Avoid.

Possibility of Hazardous Reactions

Self-reactive in the presence of heat.
Self-Accelerating decomposition temperature (SADT) 158° F(70 °C)
May cause a fire or explosion.

Conditions to Avoid

Open flames, sparks, static discharge, heat and other ignition sources. Freezing. Incompatible materials. Temperatures below -13.0 ºF (-25.0 ºC) and above 158.0 ºF (70.0 ºC)

Incompatible Materials

Metals (e.g. aluminum), reducing agents (e.g. hydroquinone), strong bases (e.g. sodium hydroxide), strong acids (e.g. hydrochloric acid), peroxide accelerators.

Hazardous Decomposition Products

Acetophenone; 2-phenylisopropanol. methane.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxic if swallowed or if inhaled. Skin absoption. Eye Contact.

Likely Routes of Exposure

Skin contact; eye contact; inhalation.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Cumyl hydroperoxide	3.35 mg/L (rat) (4-hour exposure) (vapour)	411.56 mg/kg	1.23 mg/kg

LC50 (Inhalation)

Inhalation LC50: 1370 mg/m³

LD50 (Oral)

Oral LD50: 382 mg/kg (rat)

LD50 (Dermal)

LD50: 1,200 - 1,520 mg/kg

Skin Corrosion/Irritation

Contact can cause pain, redness, burns, and blistering. Permanent scarring can result.

Serious Eye Damage/Irritation

Human experience and animal tests show serious eye irritation.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

May cause nose and throat irritation. Symptoms may include headache, nausea, dizziness, drowsiness and confusion. At high concentrations may cause lung injury.

Skin Absorption

May cause Symptoms may include redness, rash, swelling and itching.

Ingestion

May cause severe irritation or burns to the mouth, throat and stomach.

Aspiration Hazard

May be drawn into the lungs (aspirated) if swallowed or vomited. Can cause lung damage if aspirated based on human experience.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

If inhaled: may cause irritation of the respiratory system. Respiratory tract injury has been observed. Following skin contact: symptoms can include redness, rash, swelling and itching.
May cause damage to organs through prolonged or repeated exposure.

Respiratory and/or Skin Sensitization

Not known to be a respiratory sensitizer.

Not known to be a skin sensitizer.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Cumyl hydroperoxide	Group 2B		Reasonably anticipated	Not Listed

IARC. (Cumene) Group 2B – Possibly carcinogenic to humans.
NTP. (Cumene) Reasonably anticipated human carcinogen.
OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
California Prop. 65
WARNING! This product contains a chemical known in the State of California to cause cancer.
C.A.S.# 98-82-8 (Cumene)

Key to Abbreviations

IARC = International Agency for Research on Cancer.
Group 2B = Possibly carcinogenic to humans.

NTP = National Toxicology Program.
Reasonably anticipated = Reasonably anticipated human carcinogen.

OSHA = US Occupational Safety and Health Administration.

Reproductive Toxicity

Development of Offspring

Studies in people and animals show effects on the unborn child.

Sexual Function and Fertility

Not known to cause effects on sexual function or fertility.

Effects on or via Lactation

Not known to cause effects on or via lactation.

Germ Cell Mutagenicity

Not known to be a mutagen.

SECTION 12. ECOLOGICAL INFORMATION

This material should be considered an environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long-lasting effects.

Ecotoxicity

LC50 Fish: Oncorhyncus mykiss: 3.9 mg/l, 96 hours
EC50 Crustacea: Daphnia magna: 18.84 mg/l, 48 hours
EC50 Algae: 3.1 mg/l, 72 hours
NOEC Bacteria: 50 mg/l

Acute Aquatic Toxicity

Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Aquatic Plants	ErC50 Algae
Cumyl hydroperoxide	3.9 mg/L (Oncorhynchus mykiss (rainbow trout); 96-hour; fresh water; semi-static)	18.84 mg/L (Daphnia pulex (water flea); 48-hour; static)		3.1 mg/L (Selenastrum capricornutum (algae); 72-hour; static)

Chronic Aquatic Toxicity

Chemical Name	NOEC Fish	EC50 Fish	NOEC Crustacea	EC50 Crustacea
Cumyl hydroperoxide	0.117 mg/L (Daphnia magna (water flea); 21-day; semi-static)			

Persistence and Degradability

Biodegradability: Not Readily.

Bioaccumulative Potential

Bio-concentration factor (BCF): <1

N-Octanol/Water Partition Coefficient (Log Kow): 39.8 (68 °F / 20 °C).

Mobility in Soil

No information was located.

Other Adverse Effects

Results of PBT and vPvB assessment: not classified as PBT or vPvB.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Contact local environmental authorities for approved disposal or recycling methods in your jurisdiction. This product and its container must be disposed of as hazardous waste. Do NOT dump into any sewers, on the ground or into any body of water. Empty containers retain product residue. Follow label warnings even if container appears to be empty. The container for this product can present explosion or fire hazards, even when emptied. Do not cut, puncture, or weld on or near this container. Treat waste in an approved waste disposal facility.

SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
US DOT	UN3109	Organic peroxide type F, liquid (Cumyl hydroperoxide, < 90%)	5.2, 8	Not assigned by regulation
IMO (Marine)	UN3109	Organic peroxide type F, liquid (Cumyl hydroperoxide, < 90%)	5.2, 8	Not assigned by regulation
IATA (Air)	UN3109	Organic peroxide type F, liquid (Cumyl hydroperoxide, < 90%)	5.2, 8, keep away from heat	Not assigned by regulation
Canadian TDG	UN3109	Organic peroxide type F, liquid (Cumyl hydroperoxide, < 90%)	5.2, 8	Not assigned by regulation

Environmental Hazards Marine Pollutant (Cumyl hydroperoxide)

Special Precautions Please note: Reportable Quantity:
Ingredients: Cumyl hydroperoxide
C.A.S.# 80-15-9
Component RQ (lbs) 10 lbs
Calculated product RQ (lbs) 11 lbs

This product contains the following substance(s) which are environmentally hazardous per 49 CFR 172.101, Appendix A:
(Cumyl hydroperoxide)

IATA-DGR: Organic Peroxides, Keep Away From Heat

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

HMIS classifications:
Health 3 *
Flammability 2
Physical Hazard 1

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic.

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by the Controlled Products Regulations.

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL/NDSL.

CEPA - National Pollutant Release Inventory (NPRI)

Part 1A. (Cumene) Part 1A. (Acetophenone) Part 1A.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are listed on the TSCA Inventory.

Additional USA Regulatory Lists

Pennsylvania Right To Know. (2-Phenylisopropanol). (Cumyl hydroperoxide). (Acetophenone). (Cumene)

Massachusetts Right To Know. (Cumyl hydroperoxide). (Acetophenone). (Cumene)

California Proposition 65. (Cumene) WARNING: This product can expose you to chemicals, which are known to the State of California to cause cancer.

CERCLA. (Cumyl hydroperoxide) RQ: 10 lb.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986)

SARA Title III - Section 302: This material does not contain any components with a section 302 EHS TPQ.

SARA 304: Emergency release notification This material does not contain any components with a section 304 EHS RQ.

SARA Title III - Section 311/312: Acute Health Hazard. Reactivity Hazard

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

Custom Regulatory 1

CH INV: YES. The mixture contains substances listed on the Swiss Inventory
TSCA: YES. All chemical substances in this product are either listed on the TSCA Inventory or in compliance with a TSCA Inventory exemption.
DSL: YES. All components of this product are on the Canadian DSL.
AICS: YES. On the inventory, or in compliance with the inventory
NZIoC: YES. On the inventory, or in compliance with the inventory
ENCS: YES. On the inventory, or in compliance with the inventory

ISHL: YES. On the inventory, or in compliance with the inventory
KECI: YES. On the inventory, or in compliance with the inventory
PICCS: YES. On the inventory, or in compliance with the inventory
IECSC: YES. On the inventory, or in compliance with the inventory

CH INV Switzerland. New notified substances and declared preparations
TSCA United States TSCA Inventory
DSL Canadian Domestic Substances List (DSL)
AICS Australia Inventory of Chemical Substances (AICS)
NZIoC New Zealand. Inventory of Chemical Substances
ENCS Japan. ENCS - Existing and New Chemical Substances Inventory
ISHL Japan. ISHL - Inventory of Chemical Substances
KECI Korea. Korean Existing Chemicals Inventory (KECI)
PICCS Philippines Inventory of Chemicals and Chemical Substances (PICCS)
IECSC China. Inventory of Existing Chemical Substances in China (IECSC)

SECTION 16. OTHER INFORMATION

NFPA Rating	**Health - 3** **Flammability - 2** **Instability - 1**
	Based on Cumyl hydroperoxide
SDS Prepared By	B.E.R.
Phone No.	(315) 782-3000
Date of Preparation	December 10, 2015
Date of Last Revision	June 30, 2023
Revision Indicators	Revision 9 Updated: . Toxicological, Ecological, and Exposure Controls/Personal Protection Information C.A.S.# SECTION 15. REGULATORY INFORMATION reviewed and approved
Key to Abbreviations	ACGIH® = American Conference of Governmental Industrial Hygienists HSDB® = Hazardous Substances Data Bank IARC = International Agency for Research on Cancer NFPA = National Fire Protection Association NIOSH = National Institute for Occupational Safety and Health NTP = National Toxicology Program OSHA = US Occupational Safety and Health Administration RTECS® = Registry of Toxic Effects of Chemical Substances
References	CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). HSDB® database. US National Library of Medicine. Available from Canadian Centre for Occupational Health and Safety (CCOHS). NIOSH Pocket Guide database. National Institute for Occupational Safety and Health. Available from Canadian Centre for Occupational Health and Safety (CCOHS). Registry of Toxic Effects of Chemical Substances (RTECS®) database. Dassault Systèmes/BIOVIA (“BIOVIA”). Available from Canadian Centre for Occupational Health and Safety (CCOHS).
Disclaimer	NOTE: The information contained herein is, to the best of our knowledge, accurate and reliable. However, no warranty is expressed or implied regarding the accuracy of this information, or the results to be obtained from the use thereof.