



SAFETY DATA SHEET

in accordance with REACH (1907/2006/EC, as amended by 2015/830/EU) 29 CFR 1910.1200 and WHMIS 2015

Revision date: 28 March 2018

Initial date of issue: 28 March 2018

SDS No. 458-3

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

ARC CHP

1.2. Relevant identified uses of the substance or mixture and uses advised against

A cumene hydrogen peroxide catalyst to be used with ARC S7, S7 AR, NVE, NVE VC, T7 AR and T7 AR VC.

1.3. Details of the supplier of the safety data sheet

Company:

A.W. CHESTERTON COMPANY
860 Salem Street
Groveland, MA 01834-1507, USA
Tel. +1 978-469-6446 Fax: +1 978-469-6785
(Mon. - Fri. 8:30 - 5:00 PM EST)
SDS requests: www.chesterton.com
E-mail (SDS questions): ProductMSDSs@chesterton.com
E-mail: customer.service@chesterton.com

Supplier:

Canada: A.W. Chesterton Company Ltd., 889 Fraser Drive,
Unit 105, Burlington, Ontario L7L 4X8 – Tel. 905-335-5055
EU: Chesterton International GmbH, Am Lenzenfleck 23,
D85737 Ismaning, Germany – Tel. +49-89-996-5460

1.4. Emergency telephone number

24 hours per day, 7 days per week
Call Infotrac: 1-800-535-5053
Outside N. America: +1 352-323-3500 (collect)
NSW Poisons Information Centre (Australia): 13 11 26

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

Organic peroxide, Type F, H242
Acute toxicity, Category 4, H302, H311
Acute toxicity, Category 3, H331
Skin corrosion, Category 1B, H314
Specific target organ toxicity – repeated exposure, Category 2, H373
Hazardous to the aquatic environment, Chronic, Category 2, H411

2.1.2. Classification according to 29 CFR 1910.1200 / WHMIS 2015

Same as section 2.1.1.

2.1.3. Australian statement of hazardous nature

Hazardous according to criteria of Safe Work Australia.

2.1.4. Additional information

For full text of H-statements: see SECTIONS 2.2 and 16.

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]****Hazard pictograms:****Signal word:**

Danger

Hazard statements:

H242 Heating may cause a fire.
 H302/312 Harmful if swallowed or in contact with skin.
 H314 Causes severe skin burns and eye damage.
 H331 Toxic if inhaled.
 H373 May cause damage to organs through prolonged or repeated exposure.
 H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P234 Keep only in original packaging.
 P260 Do not breathe mist/vapours/spray.
 P273 Avoid release to the environment.
 P280 Wear protective gloves, protective clothing and eye/face protection.
 P301/330/331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
 P303/361/353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
 P304/340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P305/351/338 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.
 P391 Collect spillage.
 P403/235 Store in a well-ventilated place. Keep cool.
 P420 Store separately.

Supplemental information: None**2.2.2. Labeling according to 29 CFR 1910.1200 / WHMIS 2015****Hazard pictograms:****Signal word:**

Danger

Hazard statements:

Same as section 2.2.1.

Precautionary statements:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P234 Keep only in original packaging.
 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.
 P273 Avoid release to the environment.
 P280 Wear protective gloves, protective clothing and eye/face protection.
 P301/330/331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
 P303/361/353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
 P304/340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P305/351/338 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.
 P363 Wash contaminated clothing before reuse.
 P391 Collect spillage.
 P403/235 Store in a well-ventilated place. Keep cool.
 P405 Store locked up.
 P410 Protect from sunlight.
 P420 Store separately.
 P501 Dispose of contents/container to an approved waste disposal plant.

Supplemental information: None

2.3. Other hazards

None known

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.2. Mixtures**

Hazardous Ingredients ¹	% Wt.	CAS No./ EC No.	REACH Reg. No.	CLP/GHS Classification
Cumene hydroperoxide	87-90	80-15-9 201-254-7	01-211947 5796-19	Org. Perox. E, H242 Acute Tox. 3, H331 Acute Tox. 4, H302, H312 Skin Corr. 1B, H314 STOT RE 2, H373 Aquatic Chronic 2, H411
2-Phenylpropan-2-ol	5-10	617-94-7 210-539-5	NA	Acute Tox. 4, H302 Eye Irrit. 2, H315 Skin Irrit. 2, H319
Cumene	1-5	98-82-8 202-704-5	NA	Flam. Liq. 3, H226 Asp. Tox. 1, H304 STOT SE 3, H335 Aquatic Chronic 2, H411
Acetophenone	1-2	98-86-2 202-208-7	NA	Acute Tox. 4, H302 Eye Irrit. 2, H319

¹ Classified according to: • 29 CFR 1910.1200, 1915, 1916, 1917, Mass. Right-to-Know Law (ch. 40, M.G.L..O. 111F), California Proposition 65
• 1272/2008/EC, GHS, REACH
• WHMIS 2015
• Safe Work Australia

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures**

Inhalation: Remove to fresh air. If not breathing, administer artificial respiration. Contact physician immediately.

Skin contact: Flood area with water while removing contaminated clothing. Contact physician.

Eye contact: Flush eyes for at least 15 minutes with large amounts of water. Remove contact lenses, if present and easy to do. Continue rinsing. Contact physician immediately.

Ingestion: Do not induce vomiting. If conscious, dilute stomach contents with one glass of water. Contact physician immediately.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. Avoid contact with the product while providing aid to the victim. Do not breathe mist/vapours. See section 8 for recommendations on personal protective equipment.

4.2. Most important symptoms and effects, both acute and delayed

Corrosive to eyes, skin and mucous membranes, which can result in strong irritation, burning and tissue damage. Toxic in contact with skin or if inhaled. Excessive inhalation of vapors can cause headache, severe eye and respiratory tract irritation, coughing and difficulty breathing. Harmful if swallowed. May cause damage to lungs through prolonged or repeated inhalation exposure.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptoms.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media**

Suitable extinguishing media: Carbon dioxide, dry chemical, alcohol-resistant foam, water fog

Unsuitable extinguishing media: Halons

5.2. Special hazards arising from the substance or mixture

Exposures of containers to fire results in rapid product decomposition, container pressure buildup and failure, followed by vigorous burning with flare effect. Cleanup should not be attempted until all of the product has completely cooled. Hazardous combustion products: oxides of Carbon.

5.3. Advice for firefighters

Cool exposed containers with water. Recommend Firefighters wear self-contained breathing apparatus. Fight fires from a safe distance from a protected location.

Flammability Classification: –

HAZCHEM Emergency Action Code: 2 Y

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate area. Provide adequate ventilation. Utilize exposure controls and personal protection as specified in Section 8.

6.2. Environmental Precautions

Keep out of sewers, streams and waterways.

6.3. Methods and material for containment and cleaning up

Keep away from sources of ignition - No smoking. If removal of ignition sources is not possible, then flush material away with water. Pick up with absorbent material (sand, sawdust, clay, etc.) and place in a suitable container for disposal.

6.4. Reference to other sections

Refer to section 13 for disposal advice.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

Contact with incompatible materials or temperatures of 70°C (158°F) may result in a self-accelerating decomposition reaction with release of vapors which may autoignite. Keep away from sources of ignition - No smoking. Use non-sparking tools. Vapors are heavier than air and will collect in low areas. Do not breathe vapours/spray. Remove contaminated clothing immediately. Wash contaminated clothing before reuse. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Store below 40°C (104°F) to maintain stability and active oxygen content. Protect from sunlight. Store in a well-ventilated place. Keep container tightly closed. Store separately. Do not store near food or feed. Keep from freezing. Keep only in original container.

7.3. Specific end use(s)

If product is sprayed, utilize an approved air-supplied respirator.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****Occupational exposure limit values**

Ingredients	OSHA PEL ¹		ACGIH TLV ²		UK WEL ³		AUSTRALIA ES ⁴	
	ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
Cumene hydroperoxide	–	–	–	–	–	–	–	–
2-Phenylpropan-2-ol	–	–	–	–	–	–	–	–
Cumene	50	245	50	–	25 (skin) STEL: 50	125 STEL: 250	25 STEL: 75	125 375
Acetophenone	–	–	10	–	–	–	–	–

¹ United States Occupational Health & Safety Administration permissible exposure limits

² American Conference of Governmental Industrial Hygienists threshold limit values

³ EH40 Workplace exposure limits, Health & Safety Executive

⁴ Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003]

Derived No Effect Level (DNEL) according to Regulation (EC) No 1907/2006:**Workers**

Substance	Route of exposure	Potential health effects	DNEL
Cumene hydroperoxide	Inhalation	Chronic effects, systemic	6 mg/m ³

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No 1907/2006:

Substance	Environmental protection target	PNEC
Cumene hydroperoxide	Fresh water	0.0031 mg/l
	Freshwater sediments	0.023 mg/kg
	Marine water	0.00031 mg/l
	Marine sediments	0.0023 mg/kg
	Water, intermittent release	0.031 mg/l
	Microorganisms in sewage treatment	0.35 mg/l
	Soil (agricultural)	0.0029 mg/kg

8.2. Exposure controls**8.2.1. Engineering measures**

Use only in well-ventilated areas. If exposure limits are exceeded, provide adequate explosion-proof ventilation.

8.2.2. Individual protection measures

Respiratory protection: If exposure limits are exceeded, use an approved organic vapor respirator (EN filter type A). Significant exposure or emergency use require a self-contained breathing apparatus.

Protective gloves: Chemical resistant gloves (e.g. Viton*, neoprene, nitrile). *DuPont's registered trademark.

Cumene hydroperoxide:

Contact type	Glove material	Layer thickness	Breakthrough time *
Full	Viton	0.7 mm	>480 min.
Splash	Nitrile rubber	0.4 mm	>10 min.

*Determined according to EN374 standard.

Eye and face protection: Safety goggles.

Other: Impervious clothing as necessary to prevent skin contact. Remove contaminated clothing and wash before reuse.

8.2.3. Environmental exposure controls

Refer to sections 10.3 and 10.5.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Physical state	liquid	Odour	aromatic
Colour	colorless	Odour threshold	not determined
Initial boiling point	not determined	Vapour pressure @ 20°C	3 mm Hg
Melting point	-30°C (-22°F)	% Aromatics by weight	14% max.
% Volatile (by volume)	not determined	pH	not applicable
Flash point	100°C (212°F)	Relative density	1.05 kg/l
Method	Tag Closed Cup	Weight per volume	8.7 lbs/gal.
Viscosity	10.9 cps @25°C	Coefficient (water/oil)	< 1
Autoignition temperature	not determined	Vapour density (air=1)	> 1
Decomposition temperature	70°C (158°F)*	Rate of evaporation (ether=1)	< 1
Upper/lower flammability or explosive limits	not determined	Solubility in water	miscible
Flammability (solid, gas)	not applicable	Oxidising properties	not determined
Explosive properties	not determined		

9.2. Other information

*Self-accelerating decomposition temperature (SADT)

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

Refer to sections 10.3 and 10.5.

10.2. Chemical stability

Stable when kept in original, closed container, out of direct sunlight at temperatures below 40°C (104°F).

10.3. Possibility of hazardous reactions

No dangerous reactions known under conditions of normal use.

10.4. Conditions to avoid

Open flames, heat, sparks and red hot surfaces. Exposures of containers to fire results in rapid product decomposition, container pressure buildup and failure, followed by vigorous burning with flare effect.

10.5. Incompatible materials

Rust, iron, copper, acids, alkalis, reducing agents, heavy metal compounds, polymerization initiators

10.6. Hazardous decomposition products

Acetophenone, 2-Phenylpropan-2-ol, Methane

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Information on toxicological effects**

Primary route of exposure under normal use: Inhalation, skin and eye contact. Personnel with pre-existing eye, skin and respiratory disorders may be aggravated by exposure.

Acute toxicity -**Oral:**

Harmful if swallowed.

ATE-mix = 412.51 mg/kg

Substance	Test	Result
Cumene hydroperoxide	LD50 oral, rat	382 mg/kg
2-Phenylpropan-2-ol	LD50 oral, rat	1300 mg/kg
Cumene	LD50 oral, rat	2910 mg/kg
Acetophenone	LD50, oral, rat	815 mg/kg

Dermal:

Harmful in contact with skin.

ATE-mix = 1228 mg/kg

Substance	Test	Result
Cumene hydroperoxide	LD50 dermal, rat	1200-1520 mg/kg
2-Phenylpropan-2-ol	LD50 dermal, rabbit	4300 mg/kg
Cumene	LD50 dermal, rabbit	12300 mg/kg
Acetophenone	LD50 dermal, rabbit	3041 ca. 16000 mg/kg

Inhalation:

Toxic if inhaled (mist). Excessive inhalation of vapors can cause headache, severe eye and respiratory tract irritation, coughing and difficulty breathing.

ATE-mix = 0.56 mg/l (mist).

Substance	Test	Result
Cumene hydroperoxide	LC50, rat, 4 h	220 ppm (mist) cATpE: 0.5 mg/l (mist)
Cumene	LC50 mouse, 7 h	2000 ppm
Acetophenone	LC, rat, 8 h	> 210 ppm

Skin corrosion/irritation:

Causes burns.

Serious eye damage/irritation:

Risk of serious damage to eyes.

Respiratory or skin sensitisation:	Cumene hydroperoxide, Cumene, Acetophenone: based on available data, the classification criteria are not met.
Germ cell mutagenicity:	Cumene hydroperoxide, Cumene, Acetophenone: based on available data, the classification criteria are not met.
Carcinogenicity:	Cumene is considered a potential carcinogen by the International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP).
Reproductive toxicity:	Cumene hydroperoxide, Cumene, Acetophenone: based on available data, the classification criteria are not met.
STOT – single exposure:	Not expected to cause toxicity.
STOT – repeated exposure:	May cause damage to lungs through prolonged or repeated inhalation exposure.
Aspiration hazard:	Based on available data, the classification criteria are not met.
Other information:	None

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicological data have not been determined specifically for this product. The information given below is based on a knowledge of the components and the ecotoxicology of similar substances.

12.1. Toxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability

Cumene, 2-Phenylpropan-2-ol, Acetophenone readily biodegradable. Cumene hydroperoxide: expected to readily chemically degrade in soil and water.

12.3. Bioaccumulative potential

Cumene hydroperoxide, 2-Phenylpropan-2-ol, Cumene, Acetophenone: low potential for bioaccumulation.

12.4. Mobility in soil

Liquid. Slightly soluble in water. In determining environmental mobility, consider the product's physical and chemical properties (see Section 9). Cumene, Cumene hydroperoxide: expected to exhibit low to slight mobility in soil. 2-Phenylpropan-2-ol: expected to have moderate to very high mobility in soils. Acetophenone expected to have very high mobility in soils.

12.5. Results of PBT and vPvB assessment

Not available

12.6. Other adverse effects

None known

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Combine resin and curative. The final cured material is considered nonhazardous. Unreacted components are a special waste (classified as hazardous according to 2008/98/EC). Incinerate waste product when in liquid form with a properly licensed facility. Dilution followed by incineration is the preferred method. Dilution ratio of 10:1 in a clean, compatible solvent (e.g., #2 fuel oil, mineral oil) will reduce reactivity hazard during incineration and transportation.

SECTION 14: TRANSPORT INFORMATION

14.1. UN number

ADR/RID/ADN/IMDG/ICAO:	UN3109
TDG:	UN3109
US DOT:	UN3109

14.2. UN proper shipping name

ADR/RID/ADN/IMDG/ICAO:	ORGANIC PEROXIDE TYPE F, LIQUID (CUMYL HYDROPEROXIDE 88%)
TDG:	ORGANIC PEROXIDE TYPE F, LIQUID (CUMYL HYDROPEROXIDE 88%)
US DOT:	ORGANIC PEROXIDE TYPE F, LIQUID (CUMYL HYDROPEROXIDE 88%)

14.3. Transport hazard class(es)

ADR/RID/ADN/IMDG/ICAO:	5.2 (8)
TDG:	5.2 (8)
US DOT:	5.2 (8)

14.4. Packing group

ADR/RID/ADN/IMDG/ICAO:	II
TDG:	II

US DOT:	II
14.5. Environmental hazards	MARINE POLLUTANT
14.6. Special precautions for user	PROTECT FROM SOURCES OF HEAT
14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	NOT APPLICABLE
14.8. Other information	<p>US DOT: ERG NO. 145</p> <p>IMDG: EmS F-J, S-R, "Separated from" acids and alkalis</p> <p>ADR: Classification code P1 , Tunnel restriction code (D)</p>

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU regulations

Authorisations under Title VII: Not applicable

Restrictions under Title VIII: Not applicable

Other EU regulations: Directive 94/33/EC on the protection of young people at work

15.1.2. National regulations

US EPA SARA TITLE III		
312 Hazards:	313 Chemicals:	
See section 2	Cumene hydroperoxide	80-15-9 80-90%
	Cumene	98-82-8 1-5%
	Acetophenone	98-86-2 1-2%

Other national regulations: National implementation of the EC Directive referred to in section 15.1.1.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms:	<p>ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways</p> <p>ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road</p> <p>ATE: Acute Toxicity Estimate</p> <p>BCF: Bioconcentration Factor</p> <p>cATpE: Converted Acute Toxicity point Estimate</p> <p>CLP: Classification Labelling Packaging Regulation (1272/2008/EC)</p> <p>ES: Exposure Standard</p> <p>GHS: Globally Harmonized System</p> <p>ICAO: International Civil Aviation Organization</p> <p>IMDG: International Maritime Dangerous Goods</p> <p>LC50: Lethal Concentration to 50 % of a test population</p> <p>LD50: Lethal Dose to 50% of a test population</p> <p>LOEL: Lowest Observed Effect Level</p> <p>N/A: Not Applicable</p> <p>NA: Not Available</p> <p>NOEC: No Observed Effect Concentration</p> <p>NOEL: No Observed Effect Level</p> <p>OECD: Organization for Economic Co-operation and Development</p> <p>PBT: Persistent, Bioaccumulative and Toxic substance</p> <p>(Q)SAR: Quantitative Structure-Activity Relationship</p> <p>REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (1907/2006/EC)</p> <p>REL: Recommended Exposure Limit</p> <p>RID: Regulations concerning the International Carriage of Dangerous Goods by Rail</p> <p>SDS: Safety Data Sheet</p> <p>STEL: Short Term Exposure Limit</p> <p>STOT RE: Specific Target Organ Toxicity, Repeated Exposure</p> <p>STOT SE: Specific Target Organ Toxicity, Single Exposure</p> <p>TDG: Transportation of Dangerous Goods (Canada)</p> <p>TWA: Time Weighted Average</p> <p>US DOT: United States Department of Transportation</p> <p>vPvB: very Persistent and very Bioaccumulative substance</p> <p>WEL: Workplace Exposure Limit</p> <p>WHMIS: Workplace Hazardous Materials Information System</p> <p>Other abbreviations and acronyms can be looked up at www.wikipedia.org.</p>
Key literature references and sources for data:	<p>Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST)</p> <p>Chemical Classification and Information Database (CCID)</p> <p>European Chemicals Agency (ECHA) - Information on Chemicals</p> <p>Hazardous Chemical Information System (HCIS)</p> <p>National Institute of Technology and Evaluation (NITE)</p> <p>Swedish Chemicals Agency (KEMI)</p> <p>U.S. National Library of Medicine Toxicology Data Network (TOXNET)</p>

Procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008 [CLP]:

Classification	Classification procedure
Org. Perox, F - Highly flammable, H242	Bridging principle "Dilution"
Acute Tox. 4, H302/312	Calculation method
Acute Tox. 3, H331	Calculation method
Skin Corr. 1B, H314	Calculation method
STOT RE 2, H373	Bridging principle "Dilution"
Aquatic Chronic 2, H411	Calculation method

Relevant H-statements: H226: Flammable liquid and vapour.
H242: Heating may cause a fire.
H302: Harmful if swallowed.
H304: May be fatal if swallowed and enters airways.
H312: Harmful in contact with skin.
H314: Causes severe skin burns and eye damage.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H331: Toxic if inhaled.
H335: May cause respiratory irritation.
H373: May cause damage to organs through prolonged or repeated exposure.
H411: Toxic to aquatic life with long lasting effects.

Hazard pictogram names: Flame, skull and crossbones, corrosion, health hazard, environment

Changes to the SDS in this revision: Sections 1.2, 1.3, 1.4, 2.1, 2.2, 3, 4.1, 5.2, 5.3, 8.1, 8.2.2, 9.1, 11, 15.1.2, 16.

Revision date: 28 March 2018

Further information: None

This information is based solely on data provided by suppliers of the materials used, not on the mixture itself. No warranty is expressed or implied regarding the suitability of the product for the user's particular purpose. The user must make their own determination as to suitability.