SAFETY DATA SHEET

in accordance with 1907/2006/EC (REACH, as amended by 453/2010/EC) and 29 CFR 1910.1200

Revision date: 28 July 2015 **Initial date of issue:** 28 July 2015 **SDS No.** 458-2

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, 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:

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)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

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

Org. Perox. F, H242
Acute Tox. 3, H331, H311
Acute Tox. 4, H302
Skin Corr. 1B, H314
STOT RE 2, H373
Aquatic Chronic 2, H411

2.1.2. Classification according to 29 CFR 1910.1200 / WHMIS 2015

Flam. Liq. 4, H227
Org. Perox. F, H242
Acute Tox. 3, H331, H311
Acute Tox. 4, H302
Skin Corr. 1B, H314
STOT RE 2, H373
Aquatic Chronic 2, H411

2.1.3. Classification according to WHMIS 1988

B3: Combustible liquids; C: Oxidizing materials; E: Corrosive materials; D1A: Very toxic materials causing immediate and serious effects

2.1.4. Australian statement of hazardous nature

Hazardous according to criteria of Safe Work Australia.

2.1.5. 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.
H311/331	Toxic in contact with skin or if inhaled.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
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.
P220	Keep/Store away from rust, iron, copper, acids, alkalis, combustible materials.
P234	Keep only in original container.
P260	Do not breathe vapours/spray.
P280	Wear protective gloves, protective clothing and eye/face protection.
P303/361/353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305/351/338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304/340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310	Immediately call a POISON CENTER or doctor/physician.
P403/235	Store in a well-ventilated place. Keep cool.

Supplemental information: None

2.2.2. Labelling according to 29 CFR 1910.1200 / WHMIS 2015

Hazard pictograms:

Signal word: Danger

Hazard statements:

H227	Combustible liquid.
H242	Heating may cause a fire.
H311/331	Toxic in contact with skin or if inhaled.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H311/331	Toxic in contact with skin or if inhaled.

Precautionary statements: Same as section 2.2.1.

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	80-90	80-15-9 201-254-7	NA	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, REACH
* WHMIS 2015
* Safe Work Australia [NOHSC: 1008 (2004)]

[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, REACH
* WHMIS 2015
* Safe Work Australia [NOHSC: 1008 (2004)]

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.

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: FIRE-FIGHTING 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.

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 away from other materials. 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].

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	> 30 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	92°C (197°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 = 408 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: Toxic in contact with skin.

ATE-mix = 550 mg/kg

Substance	Test	Result
Cumene hydroperoxide	LD50 dermal, rat	500-1520 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 by inhalation. Excessive inhalation of vapors can cause headache, severe eye and respiratory tract irritation, coughing and difficulty breathing.

Substance	Test	Result
Cumene hydroperoxide	LC50, rat, 4 4 h	220 ppm
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: As per 29 CFR 1910.1200 (Hazard Communication), this product contains no carcinogens as listed by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), the Occupational Safety and Health Administration (OSHA) or Regulation (EC) No 1272/2008.

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.

European List of Wastes code: 08 04 09

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

US DOT: ERG NO. 145
IMDG: EmS F-J, S-R, "Separated from" acids and alkalis
ADR: Classification code P1 , Tunnel restriction code (D)

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:**		
Immediate	Cumene hydroperoxide 80-90%	80-15-9	
Fire	Cumene	98-82-8	1-5%
Delayed	Acetophenone	98-86-2	1-2%
Reactive			

Hazardous Materials Identification System (HMIS)

4 = Severe Hazard
3 = Serious Hazard
2 = Moderate Hazard
1 = Slight Hazard
0 = Minimal Hazard
* = See Section 8

HEALTH	**3**
FLAMMABILITY	**2**
PHYSICAL HAZARD	**1**
Personal Protection	*****

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:

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE: Acute Toxicity Estimate
BCF: Bioconcentration Factor
CLP: Classification Labelling Packaging Regulation (1272/2008/EC)
ES: Exposure Standard
GHS: Globally Harmonized System
ICAO: International Civil Aviation Organization
IMDG: International Maritime Dangerous Goods
LC50: Lethal Concentration to 50 % of a test population
LD50: Lethal Dose to 50% of a test population
LOEL: Lowest Observed Effect Level
N/A: Not Applicable
NA: Not Available
NOAEL: No Observed Adverse Effect Level
NOEL: No Observed Effect Level
OECD: Organization for Economic Co-operation and Development
PBT: Persistent, Bioaccumulative and Toxic substance
(Q)SAR: Quantitative Structure-Activity Relationship
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (1907/2006/EC)
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit
STOT RE: Specific Target Organ Toxicity, Repeated Exposure
STOT SE: Specific Target Organ Toxicity, Single Exposure
TDG: Transportation of Dangerous Goods (Canada)
US DOT: United States Department of Transportation
vPvB: very Persistent and very Bioaccumulative substance
WEL: Workplace Exposure Limit
WHMIS: Workplace Hazardous Materials Information System
Other abbreviations and acronyms can be looked up at www.wikipedia.org.

Key literature references and sources for data:

Commission de la santé et de la sécurité du travail (CSST)
Chemical Classification and Information Database (CCID)
European Chemicals Agency (ECHA) - Information on Chemicals
Hazardous Substances Information System (HSIS)
National Institute of Technology and Evaluation (NITE)
Swedish Chemicals Agency (KEMI)
U.S. National Library of Medicine Toxicology Data Network (TOXNET)

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

Classification	Classification procedure
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, 2.2, 3, 7.1, 15.1.2.

Revision date: 28 July 2015

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.