



## 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:** 31 July 2019

**Initial date of issue:** 27 September 2010

**SDS No.** 436PA-5

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

#### 1.1. Product identifier

ARC NVE PRIMER (Part A)

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

Resin for ARC CHP and when mixed become a primer for wet or dry concrete. It can be brushed, rolled, sprayed, or squeegeed.

#### 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](http://www.chesterton.com)  
E-mail (SDS questions): [ProductMSDSs@chesterton.com](mailto:ProductMSDSs@chesterton.com)  
E-mail: [customer.service@chesterton.com](mailto: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] / GHS

Flammable liquid, Category 3, H226  
Skin irritation, Category 2, H315  
Eye irritation, Category 2, H319  
Specific target organ toxicity – single exposure, Category 3, H335  
Reproductive toxicity, Category 2, H361d  
Specific target organ toxicity – repeated exposure, Category 1, H372 (hearing, inhalation)  
Hazardous to the aquatic environment, Chronic, Category 3, H412

##### 2.1.2. Classification according to 29 CFR 1910.1200 / WHMIS 2015 / GHS

Flammable liquid, Category 3, H226  
Skin irritation, Category 2, H315  
Eye irritation, Category 2, H319  
Specific target organ toxicity – single exposure, Category 3, H335  
Reproductive toxicity, Category 2, H361d  
Specific target organ toxicity – repeated exposure, Category 1, H372 (hearing, inhalation)  
Hazardous to the aquatic environment, Acute, Category 2, H401  
Hazardous to the aquatic environment, Chronic, Category 3, H412

##### 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] / GHS****Hazard pictograms:****Signal word:**

Danger

**Hazard statements:**

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to hearing through prolonged or repeated exposure by inhalation.
H412	Harmful to aquatic life with long lasting effects.

**Precautionary statements:**

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P260	Do not breathe vapours/spray.
P264	Wash skin thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves and eye/face protection.
P303/361/353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P308/313	IF exposed or concerned: Get medical advice/attention.
P370/378	In case of fire: Use CO <sub>2</sub> , dry chemical, foam or water fog to extinguish.
P403/235	Store in a well-ventilated place. Keep cool.

**Supplemental information:** Contains Cobalt bis(2-ethylhexanoate). May produce an allergic reaction.

**2.2.2. Labelling according to 29 CFR 1910.1200 / WHMIS 2015 / GHS****Hazard pictograms:****Signal word:**

Danger

**Hazard statements:**

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to hearing through prolonged or repeated exposure by inhalation.
H401	Toxic to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

<b>Precautionary statements:</b>	P201	Obtain special instructions before use.
	P202	Do not handle until all safety precautions have been read and understood.
	P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	P233	Keep container tightly closed.
	P240	Ground and bond container and receiving equipment.
	P241	Use explosion-proof electrical/ventilating/lighting equipment.
	P242	Use non-sparking tools.
	P243	Take action to prevent static discharges.
	P260	Do not breathe vapours/spray.
	P264	Wash skin thoroughly after handling.
	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 and eye/face protection.
	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.
	P308/313	IF exposed or concerned: Get medical advice/attention.
	P370/378	In case of fire: Use CO <sub>2</sub> , dry chemical, foam or water fog to extinguish.
	P403/235	Store in a well-ventilated place. Keep cool.
	P405	Store locked up.
	P501	Dispose of contents/container to an approved waste disposal plant.

**Supplemental information:** None

### 2.3. Other hazards

The safety and health hazards are detailed separately for Part A and Part B. The final cured material is considered nonhazardous.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2. Mixtures

Hazardous Ingredients <sup>1</sup>	% Wt.	CAS No./ EC No.	REACH Reg. No.	CLP/GHS Classification
Styrene	30-40	100-42-5 202-851-5	NA	Flam. Liq. 3, H226 Asp. Tox. 1, H304 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Acute Tox. 4, H332 STOT SE 3, H335 Repr. 2, H361d STOT RE 1, H372 (hearing, inhalation) Aquatic Acute 2, H401* Aquatic Chronic 3, H412
Methacrylic acid	<3.5	79-41-4 201-204-4	NA	Flam. Liq. 4, H227* Acute Tox. 4, H302 Acute Tox. 3 H311 Acute Tox. 4 H332 Skin Corr. 1A, H314 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Acute 3, H402*
Cobalt bis(2-ethylhexanoate)	0.01-0.09	136-52-7 205-250-6	NA	Skin Sens. 1A, H317 Eye Irrit. 2, H319 Repr. 2, H361fd Aquatic Acute 1, H400 (M-factor = 1) Aquatic Chronic 3, H412

\*Non-CLP classification.

For full text of H-statements: see SECTION 16.

<sup>1</sup> Classified according to: • 29 CFR 1910.1200, 1915, 1916, 1917, Mass. Right-to-Know Law (ch. 40, M.G.L..O. 111F)  
• 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.

**Skin contact:** Remove contaminated clothing. Wash clothing before reuse. Wash skin with soap and water. Material may stick to skin causing irritation upon removal. Consult physician.

**Eye contact:** Flush eyes for at least 15 minutes with large amounts of water. Contact physician if irritation persists.

**Ingestion:** Do not induce vomiting. 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 vapours. See section 8.2.2 for recommendations on personal protective equipment.

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

Causes skin irritation. Causes serious eye irritation. High vapor concentrations may irritate eyes, respiratory tract and possibly cause dizziness, nausea and other central nervous system effects. Causes damage to hearing through prolonged or repeated exposure by inhalation.

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

Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. If burn is present, treat as a thermal burn, after decontamination. No specific antidote available. Treat symptoms.

#### SECTION 5: FIREFIGHTING MEASURES

##### 5.1. Extinguishing media

**Suitable extinguishing media:** Carbon dioxide, dry chemical, foam or water fog

**Unsuitable extinguishing media:** High volume water jet

##### 5.2. Special hazards arising from the substance or mixture

Water may cause frothing. Material may polymerize when container is exposed to heat and polymerization will increase pressure in a closed container which may cause the container to rupture violently.

##### 5.3. Advice for firefighters

Cool exposed containers with water. Recommend Firefighters wear self-contained breathing apparatus.

**Flammability Classification:** –

**HAZCHEM Emergency Action Code:** 2 Z

#### SECTION 6: ACCIDENTAL RELEASE MEASURES

##### 6.1. Personal precautions, protective equipment and emergency procedures

Avoid skin contact. 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

Evacuate area. Provide adequate ventilation. Contain spill to a small area. 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. Remove residual with hot soapy water.

##### 6.4. Reference to other sections

Refer to section 13 for disposal advice.

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

Ground and bond container and receiving equipment, Use non-sparking tools. Take action to prevent static discharges. Vapors are heavier than air and will collect in low areas. Do not breathe vapours/spray. Avoid skin contact. Utilize exposure controls and personal protection as specified in Section 8. Remove contaminated clothing immediately. Wash clothing before reuse. Do not eat, drink or smoke when using this product. Avoid creating and breathing dust during removal, drilling, grinding, sawing or sanding.

**7.2. Conditions for safe storage, including any incompatibilities**

Store below 24°C (75°F). Store in a well-ventilated place. Keep container tightly closed. Vapors may polymerize to cause plugs in vents and relief devices.

**7.3. Specific end use(s)**

No special precautions.

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

Ingredients	OSHA PEL <sup>1</sup>		ACGIH TLV <sup>2</sup>		UK WEL <sup>3</sup>		AUSTRALIA ES <sup>4</sup>	
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Styrene	100	–	20	–	100	430	50	213
	Ceiling: 200		STEL: 40		STEL: 250	STEL: 1080	STEL: 100	426
	Peak: 600 (5 min in any 3 hr)							
Methacrylic acid	N/A	N/A	20	–	20 STEL: 40	72 143	20	70
Cobalt bis(2-ethylhexanoate)	(dust/fume, as Co)	0.1	–	N/A	(as Co)	0.1	(dust/fume, as Co)	0.05

<sup>1</sup> United States Occupational Health & Safety Administration permissible exposure limits

<sup>2</sup> American Conference of Governmental Industrial Hygienists threshold limit values

<sup>3</sup> EH40 Workplace exposure limits, Health & Safety Executive

<sup>4</sup> Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants

**Biological limit values**

Styrene:

Control parameter	Biological specimen	Sampling Time	Limit value	Basis	Notes
Sum of mandelic acid and phenylglyoxylic acid	Urine	End of shift	400 mg/g creatinine	ACGIH	Nonspecific
Styrene	Urine	End of shift	0.04 mg/l	ACGIH	–

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

Substance	Route of exposure	Potential health effects	DNEL
Styrene	Inhalation	Acute effects, local	306 mg/m <sup>3</sup>
		Acute effects, systemic	289 mg/m <sup>3</sup>
		Chronic effects, systemic	85 mg/m <sup>3</sup>
Methacrylic acid	Dermal	Chronic effects, systemic	406 mg/kg bw/day
		Chronic effects, local	88 mg/m <sup>3</sup>
		Chronic effects, systemic	29.6 mg/m <sup>3</sup>

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

Substance	Environmental protection target	PNEC
Styrene	Fresh water	0.028 mg/l
	Marine water	0.014 mg/l
	Water, intermittent release	0.04 mg/l
	Freshwater sediments	0.614 mg/kg dry wt.
	Marine sediments	0.307 mg/kg dry wt.
	Microorganisms in sewage treatment	5 mg/l
	Soil (agricultural)	0.2 mg/kg dry wt.

**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:** Not normally needed. In case of insufficient ventilation, utilize an approved organic vapor respirator (e.g., EN filter type A). During spraying, wear suitable respiratory equipment.

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

Styrene:

Contact type	Glove material	Layer thickness	Breakthrough time *
Full	Viton	0.70 mm	> 480 min.
Splash	Nitrile rubber	0.40 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 6 and 12.

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

<b>Physical state</b>	syrup	<b>Odour</b>	aromatic
<b>Colour</b>	clear to brownish	<b>Odour threshold</b>	not determined
<b>Initial boiling point</b>	145°C (293°F)	<b>Vapour pressure @ 20°C</b>	4.5 mm Hg
<b>Melting point</b>	not determined	<b>% Aromatics by weight</b>	12.8%
<b>% Volatile (by volume)</b>	16%	<b>pH</b>	not applicable
<b>Flash point</b>	31°C (87.6°F)	<b>Relative density</b>	1.093 kg/l
<b>Method</b>	PM Closed Cup	<b>Weight per volume</b>	9.09 lbs/gal.
<b>Viscosity</b>	200-500 cps @ 25°C	<b>Coefficient (water/oil)</b>	< 1
<b>Autoignition temperature</b>	490°C (914°F)	<b>Vapour density (air=1)</b>	> 1
<b>Decomposition temperature</b>	not determined	<b>Rate of evaporation (ether=1)</b>	< 1
<b>Upper/lower flammability or explosive limits</b>	LEL 0.9%; UEL 6.8%	<b>Solubility in water</b>	insoluble
<b>Flammability (solid, gas)</b>	not applicable	<b>Oxidising properties</b>	not determined
<b>Explosive properties</b>	not determined		

**9.2. Other information**

None

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

Refer to sections 10.3 and 10.5.

**10.2. Chemical stability**

Stable under normal conditions.

**10.3. Possibility of hazardous reactions**

Elevated temperatures can cause hazardous polymerization (&gt; 77°C, 170°F). Polymerization can be initiated by sunlight and ultraviolet light. Vapors may polymerize to cause plugs in vents and relief devices.

**10.4. Conditions to avoid**

Open flames, heat, sparks and red hot surfaces. Avoid direct sunlight or ultraviolet sources.

**10.5. Incompatible materials**

Strong oxidizers like liquid Chlorine and concentrated Oxygen.

**10.6. Hazardous decomposition products**

Carbon Monoxide, Carbon Dioxide and other toxic fumes.

**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 skin, eye and lung disorders are generally aggravated by exposure.

**Acute toxicity -****Oral:**

ATE-mix = 6,470 mg/kg

Substance	Test	Result
Styrene	LD50, rat	2,650 mg/kg
Methacrylic acid	LD50, rat	1,320 mg/kg

**Dermal:**

ATE-mix = 14,327 mg/kg

Substance	Test	Result
Styrene	LD50, rat	> 2,000 mg/kg
Methacrylic acid	LD50, rabbit	500 - 1,000 mg/kg

**Inhalation:** High vapor concentrations may irritate eyes, respiratory tract and possibly cause dizziness, nausea and other central nervous system effects.

ATE-mix = 34.76 mg/l (vapor)  
ATE-mix = 42.98 mg/l (aerosol)

Substance	Test	Result
Styrene	LC50, rat, 4 hours	11.8 mg/l (vapor)
Methacrylic acid	LC50, rat, 4 hours (OECD 403)	7.1 mg/l (aerosol/vapor)
Methacrylic acid	cATpE	1.5 mg/l (aerosol)

**Skin corrosion/irritation:** Causes skin irritation. Prolonged or repeated skin contact may cause dermatitis.

Substance	Test	Result
Styrene	Skin irritation, rabbit	Moderate irritation
Methacrylic acid	Skin irritation, rabbit (OECD 404)	Corrosive

**Serious eye damage/irritation:** Causes serious eye irritation.

Substance	Test	Result
Styrene	Eye irritation, rabbit	Moderate irritation
Methacrylic acid	Eye irritation, rabbit (OECD 405)	Corrosive

**Respiratory or skin sensitisation:**

Substance	Test	Result
Styrene	Skin sensitization, guinea pig	Not sensitizing
Methacrylic acid	Skin sensitization, guinea pig	Not sensitizing

**Germ cell mutagenicity:** Styrene, Methacrylic acid: based on available data, the classification criteria are not met.

**Carcinogenicity:** Styrene is considered a potential carcinogen by the International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP). IARC states that cobalt compounds are possibly carcinogenic to humans (group 2B).

**Reproductive toxicity:** Suspected of damaging the unborn child (Styrene).

**STOT – single exposure:** May cause respiratory irritation (Styrene, Methacrylic acid).

**STOT – repeated exposure:** Lab animals exposed to Styrene showed hearing loss and liver, kidney and central nervous system effects.

**Aspiration hazard:** Not expected to be an aspiration toxicant based on viscosity.

**Other information:** None known

## 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

Styrene: toxic to aquatic organisms on an acute basis [48 h EC50 (for daphnia): 4.7 mg/l]; harmful to aquatic life with long lasting effects (chronic NOEC, Daphnia magna, 21 days: 1.01 mg/l). Methacrylic acid: 72 h EC50 (for algae), 45 mg/l.

### 12.2. Persistence and degradability

Styrene: 80% biodegradable (OECD 301D, 20 days); readily biodegradable. Methacrylic acid: 86% biodegradable (OECD 301D, 28 days); readily biodegradable. Styrene, Methacrylic acid: oxidize rapidly by photochemical reactions in air.

### 12.3. Bioaccumulative potential

Styrene: not expected to bioaccumulate (log Kow = 0.35). Methacrylic acid: not expected to bioaccumulate (log Kow = 0.93).

### 12.4. Mobility in soil

Paste. Insoluble in water. In determining environmental mobility, consider the product's physical and chemical properties (see Section 9). Styrene: expected to exhibit low mobility in soil (500 < Koc < 2000). Methacrylic acid: expected to have very high mobility in soils (Koc = 15).



**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. Landfill sealed containers with a properly licensed facility. Unreacted components are a special waste (classified as hazardous according to 2008/98/EC). May be incinerated at an appropriate facility. Check local, state and national/federal regulations and comply with the most stringent requirement.

**SECTION 14: TRANSPORT INFORMATION****14.1. UN number**

ADG/ADR/RID/ADN/IMDG/ICAO: UN1866

TDG: UN1866

US DOT: UN1866

**14.2. UN proper shipping name**

ADG/ADR/RID/ADN/IMDG/ICAO: RESIN SOLUTION

TDG: RESIN SOLUTION

US DOT: RESIN SOLUTION

**14.3. Transport hazard class(es)**

ADG/ADR/RID/ADN/IMDG/ICAO: 3

TDG: 3

US DOT: 3

**14.4. Packing group**

ADG/ADR/RID/ADN/IMDG/ICAO: III

TDG: III

US DOT: III

**14.5. Environmental hazards**

NO ENVIRONMENTAL HAZARDS

**14.6. Special precautions for user**

NO SPECIAL PRECAUTIONS FOR USER

**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. 128

May be shipped as Limited Quantities in packaging having a rated capacity gross weight of 66 lb. or less and in inner packages not over 5 Liters (49 CFR 173.150(b,3)).

IMDG: EmS F-E, S-E

ADR: Classification code F1 , Tunnel restriction code (D/E)

**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: None

**Other EU regulations:** Directive 92/85/EEC on the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding.  
 Directive 94/33/EC on the protection of young people at work.  
 Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances (hazard category P5, Flammable Liquids; qualifying quantities: 5,000 t, 50,000 t).

### 15.1.2. National regulations

#### US EPA SARA TITLE III

##### 312 Hazards:

Flammable liquid  
 Skin irritation  
 Eye irritation  
 Specific target organ toxicity – single exposure  
 Reproductive toxicity  
 Specific target organ toxicity – repeated exposure

##### 313 Chemicals:

Styrene	100-42-5	30-40%
Cobalt compounds	136-52-7	Below de minimis concentration

**Other national regulations:** National implementations of the EC Directives 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:** ADG: Australian Dangerous Goods Code  
 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  
 cATpE: Converted Acute Toxicity point Estimate  
 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  
 NOEC: No Observed Effect Concentration  
 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)  
 REL: Recommended Exposure Limit  
 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)  
 TWA: Time Weighted Average  
 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](http://www.wikipedia.org).

**Key literature references and sources for data:** Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST)  
 Chemical Classification and Information Database (CCID)  
 European Chemicals Agency (ECHA) - Information on Chemicals  
 Hazardous Chemical Information System (HCIS)  
 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 [CLP]:**

Classification	Classification procedure
Flam. Liq. 3, H226	On basis of test data
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
STOT SE 3, H335	Calculation method
Repr. 2, H361d	Calculation method
STOT RE 1, H372	Calculation method

**Relevant H-statements:** H226: Flammable liquid and vapour.  
H227: Combustible liquid.  
H302: Harmful if swallowed.  
H304: May be fatal if swallowed and enters airways.  
H311 : Toxic in contact with skin.  
H314 : Causes severe skin burns and eye damage.  
H315: Causes skin irritation.  
H317: May cause an allergic skin reaction.  
H318: Causes serious eye damage.  
H319: Causes serious eye irritation.  
H332: Harmful if inhaled.  
H335: May cause respiratory irritation.  
H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.  
H361d: Suspected of damaging the unborn child.  
H372: Causes damage to organs through prolonged or repeated exposure.  
H400: Very toxic to aquatic life.  
H401: Toxic to aquatic life.  
H402: Harmful to aquatic life.  
H412 Harmful to aquatic life with long lasting effects.

**Hazard pictogram names:** Flame, health hazard, exclamation mark

**Further information:** None

**Date of last revision:** 31 July 2019

**Changes to the SDS in this revision:** Sections 1.4, 2.1, 2.2, 3, 4.1, 4.2, 8.1, 8.2.2, 11, 12.1, 12.2, 12.3, 12.4, 15.1, 16.

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.