Tempilaq® Temperature Indicating Liquid : 175 °F (79 °C), 188 °F, 200 °F (93 °C), 250 °F (121 °C), 275 °F (135 °C), 300 °F (149 °C), 313 °F (156 °C), 325 °F (163 °C), 350 °F (177 °C), 363 °F (184 °C), 375 °F (191 °C), 550 °F (288 °C), 575 °F (302 °C), 600 °F (316 °C), 700 °F (371 °C), 750 °F (399 °C), 850 °F (454 °C), 900 °F (482 °C), 1022 °F (550 °C), 1050 °F (566 °C), 1100 °F (593 °C), 1150 °F (621 °C), 1200 °F (649 °C), 1250 °F (677 °C), 1300 °F (704 °C), 1400 °F (760 °C), 1500 °F (816 °C), 1600 °F (871 °C), 1700 °F (927 °C), 1800 °F (982 °C), 1900 °F (1038 °C)

LA-CO Industries, Inc.

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)
Date of issue: 03/23/2015
Revision date: 10/23/2015

Version: 2.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Product name : Tempilaq® Temperature Indicating Liquid 175 °F (79 °C), 188 °F, 200 °F (93 °C), 250 °F (121 °C), 275 °F (135 °C), 300 °F (149 °C), 313 °F (156 °C), 325 °F (163 °C), 350 °F (177 °C), 363 °F (184 °C), 375 °F (191 °C), 550 °F (288 °C), 575 °F (302 °C), 600 °F (316 °C), 700 °F (371 °C), 750 °F (399 °C), 850 °F (454 °C), 900 °F (482 °C), 1022 °F (550 °C), 1050 °F (566 °C), 1100 °F (593 °C), 1150 °F (621 °C), 1200 °F (649 °C), 1250 °F (677 °C), 1300 °F (704 °C), 1400 °F (760 °C), 1500 °F (816 °C), 1600 °F (871 °C), 1700 °F (927 °C), 1800 °F (982 °C), 1900 °F (1038 °C)

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

Use of the substance/mixture : Temperature indicator

1.3. Details of the supplier of the safety data sheet

LA-CO Industries, Inc.
1201 Pratt Boulevard
Elk Grove Village, IL. 60007-5746
Phone: (847) 956-7600
Fax: (847) 956-9885
E-mail: customer_service@laco.com

1.4. Emergency telephone number

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification in accordance with the Globally Harmonized Standard

Skin Irrit. 2 H315
Eye Irrit. 2A H319
Carc. 2 H351
Repr. 1B H360
STOT SE 3 H335
STOT SE 3 H336
STOT RE 2 H373

Full text of H-phrases: see section 16

2.2 Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS07 GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) :
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H351 - Suspected of causing cancer
H360 - May damage fertility or the unborn child
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements (GHS-US) : P201 - Obtain special instructions before use

P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe mist, vapours
P264 - Wash hands thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear eye protection, protective gloves, protective clothing
P302+P352 - If on skin: Wash with plenty of water
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
P314 - Get medical advice/attention if you feel unwell
P321 - Specific treatment (see First aid measures on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to an authorised waste collection point

2.3. Other hazards

Not applicable

2.4 Unknown acute toxicity (GHS US)

25.1 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)
25.9 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)
25.9 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	% (w/w)	GHS-US classification
1-bromopropane	(CAS No) 106-94-5	68.57 – 70.69 : 175 °F, 275 °F 74.29 – 78.59 : 188 °F 71.43 – 73.64 : 200 °F, 313 °F, 550 °F, 575 °F, 700 °F, 1150 °F, 1250 °F, 1500 °F 68.58 – 70.7 : 250 °F 68.67 – 70.79 : 300 °F 74.41 – 76.71 : 350 °F 68.47 – 70.59 : 363 °F 68.69 – 70.81 : 375 °F 76.93 – 79.31 : 600 °F 87.31 – 90.01 : 750 °F 69.13 – 71.26 : 850 °F 64.52 – 66.51 : 900 °F 69.04 – 71.18 : 1022 °F 73.9 – 76.18 : 1050 °F 71.45 – 73.66 : 1100 °F 73.82 – 76.1 : 1200 °F 65.17 – 67.19 : 1300 °F 68.87 – 71 : 1400 °F 71.47 – 73.68 : 1600 °F 68.97 – 71.1 : 1700 °F 68.75 – 70.88 : 1800 °F 76.52 – 78.88 : 1900 °F 73.47 – 75.74 : 325 °F	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Repr. 1B, H360 STOT SE 3, H336 STOT SE 3, H335 STOT RE 2, H373
dilithium molybdate	(CAS No) 13568-40-6	2.72 : 750 °F 10.22 : 850 °F 30.07 : 1300 °F	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
acetoacetanilide	(CAS No) 102-01-2	24.71 – 24.83 : 175 °F	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 STOT RE 2, H373
adipic acid	(CAS No) 124-04-9	23.98 : 300 °F	Eye Irrit. 2A, H319
hymecromone	(CAS No) 90-33-5	20.8 : 350 °F 23.91 : 363 °F	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
salicylamide	(CAS No) 65-45-2	23.71 : 275 °F	Acute Tox. 4 (Oral), H302
2'-methylacetanilide	(CAS No) 120-66-1	23.3 : 200 °F	Acute Tox. 4 (Oral), H302

Name	Product identifier	% (w/w)	GHS-US classification
2',4'-dimethylacetoacetanilide	(CAS No) 97-36-9	21.27 : 188 °F	Acute Tox. 4 (Oral), H302
disodium wolframate	(CAS No) 13472-45-2	21.03 : 1150 °F 19.64 : 1200 °F	Acute Tox. 4 (Oral), H302
Fluorescein	(CAS No) 2321-07-5	14.54 – 15.47 : 575 °F	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319
Molybdenum trioxide	(CAS No) 1313-27-5	4.91 : 700 °F 3.5 : 850 °F 10.35 : 900 °F 5.03 : 1022 °F 8.53 : 1050 °F 10.48 : 1100 °F	Eye Irrit. 2A, H319 Carc. 2, H351 STOT SE 3, H335
potassium molybdate	(CAS No) 13446-49-6	< 2.22 : 700 °F 1.87 : 750 °F < 7.03 : 900 °F 0.27 : 1022 °F 2.43 : 1050 °F 0.22 : 1100 °F	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
Toluene	(CAS No) 108-88-3	1.24 – 1.31 : 175 °F 1.05 – 1.09 : 188 °F, 350 °F 1.18 – 1.23 : 250 °F 1.17 – 1.22 : 300 °F, 363 °F 1.57 – 1.64 : 313 °F 0.61 – 0.63 : 375 °F, 700 °F, 1100 °F, 1150 °F, 1600 °F 0.66 – 0.69 : 750 °F 0.62 – 0.64 : 850 °F 0.56 – 0.58 : 900 °F 0.66 – 0.68 : 1022 °F 0.21 : 1050 °F 0.51 – 0.53 : 1200 °F 0.61 – 0.64 : 1250 °F, 1500 °F 0.74 – 0.78 : 1300 °F 0.57 – 0.56 : 1400 °F 0.24 : 1800 °F 0.16 : 1900 °F 1 – 1.04 : 325 °F	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 3, H412
Isopropanol	(CAS No) 67-63-0	1.85 : 1400 °F	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336
lithium carbonate	(CAS No) 554-13-2	1.39 : 700 °F 0.03 : 750 °F 0.3 : 1300 °F	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319
1,2-epoxybutane	(CAS No) 106-88-7	< 0.49 : 175 °F, 250 °F, 275 °F, 300 °F, 363 °F, 375 °F < 0.55 : 188 °F, 1900 °F < 0.52 : 200 °F, 313 °F, 550 °F, 575 °F, 700 °F, 1100 °F, 1150 °F, 1250 °F, 1500 °F, 1600 °F < 0.54 : 350 °F < 0.56 : 600 °F < 0.63 : 750 °F < 0.5 : 850 °F, 1022 °F, 1400 °F, 1700 °F, 1800 °F < 0.47 : 900 °F, 1300 °F < 0.53 : 1050 °F, 1200 °F, 325 °F	Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Carc. 2, H351 STOT SE 3, H335 Aquatic Chronic 3, H412
nitromethane	(CAS No) 75-52-5	< 0.49 : 175 °F, 250 °F, 275 °F, 300 °F, 363 °F, 375 °F < 0.55 : 188 °F, 1900 °F < 0.52 : 200 °F, 313 °F, 550 °F, 575 °F, 700 °F, 1100 °F, 1150 °F, 1250 °F, 1500 °F, 1600 °F < 0.54 : 350 °F < 0.56 : 600 °F < 0.63 : 750 °F < 0.5 : 850 °F, 1022 °F, 1400 °F, 1700 °F, 1800 °F < 0.47 : 900 °F, 1300 °F < 0.53 : 1050 °F, 1200 °F, 325 °F	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. Call a poison center or a doctor if you feel unwell.

First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
First-aid measures after skin contact	: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Drink plenty of water. Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.

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

Symptoms/injuries	: May damage fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure. Suspected of causing cancer.
Symptoms/injuries after inhalation	: May cause respiratory irritation. May cause drowsiness or dizziness.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.

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

All treatments should be based on observed signs and symptoms of distress in the patient.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Carbon dioxide. Dry powder. Foam. Sand. Water fog.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Burning produces irritating, toxic and noxious fumes.
Explosion hazard	: Product is not explosive.
Reactivity	: No dangerous reactions known.

5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Wear fire/flame resistant/retardant clothing. Wear a self contained breathing apparatus. EN469.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Avoid all eye and skin contact and do not breathe vapour and mist.

6.1.1. For non-emergency personnel

Protective equipment	: Chemical goggles or safety glasses. Wear suitable protective clothing and gloves.
Emergency procedures	: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment	: Chemical goggles or safety glasses. Wear suitable protective clothing and gloves.
Emergency procedures	: Stop leak if safe to do so. Ventilate area.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment	: Absorb and/or contain spill with inert material, then place in suitable container. Do not allow minor leaks or spills to accumulate on walking surfaces.

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Take up in non-combustible absorbent material and shove into container for disposal.

6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing mist, vapours. Use only outdoors or in a well-ventilated area.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed. Keep only in the original container in a cool well ventilated place.

Incompatible products : Strong acids. Strong bases.

Incompatible materials : Heat sources. Direct sunlight.

Prohibitions on mixed storage : Incompatible materials.

7.3. Specific end use(s)

Temperature indicator.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

acetoacetanilide (102-01-2)		
ACGIH	Not applicable	
OSHA	Not applicable	

1,2-epoxybutane (106-88-7)		
ACGIH	Not applicable	
OSHA	Not applicable	

1-bromopropane (106-94-5)		
ACGIH	ACGIH TWA (ppm)	10 ppm
ACGIH	Remark (ACGIH)	Liver & embryo/fetal dam; A3
OSHA	Not applicable	

nitromethane (75-52-5)		
ACGIH	ACGIH TWA (mg/m³)	50 mg/m³
ACGIH	ACGIH TWA (ppm)	20 ppm
ACGIH	Remark (ACGIH)	Thyroid eff; URT irr; lung dam
OSHA	OSHA PEL (TWA) (mg/m³)	250 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	100 ppm
Canada (Quebec)	VEMP (mg/m³)	250 mg/m³
Canada (Quebec)	VEMP (ppm)	100 ppm

Toluene (108-88-3)		
ACGIH	ACGIH TWA (ppm)	20 ppm
ACGIH	Remark (ACGIH)	Visual impair; female repro;
OSHA	OSHA PEL (TWA) (ppm)	200 ppm
OSHA	OSHA PEL (Ceiling) (ppm)	300 ppm

Toluene (108-88-3)		
OSHA	Remark (OSHA)	(2) See Table Z-2.
Canada (Quebec)	VECD (mg/m³)	565 mg/m³
Canada (Quebec)	VECD (ppm)	150 ppm
Canada (Quebec)	VEMP (mg/m³)	377 mg/m³
Canada (Quebec)	VEMP (ppm)	100 ppm

2',4'-dimethylacetoacetanilide (97-36-9)	
ACGIH	Not applicable
OSHA	Not applicable

2'-methylacetanilide (120-66-1)	
ACGIH	Not applicable
OSHA	Not applicable

salicylamide (65-45-2)	
ACGIH	Not applicable
OSHA	Not applicable

adipic acid (124-04-9)		
ACGIH	ACGIH TWA (mg/m³)	5 mg/m³
ACGIH	Remark (ACGIH)	URT irr; ANS impair
OSHA	Not applicable	
Canada (Quebec)	VEMP (mg/m³)	5 mg/m³

hymecromone (90-33-5)	
ACGIH	Not applicable
OSHA	Not applicable

Fluorescein (2321-07-5)	
ACGIH	Not applicable
OSHA	Not applicable

potassium molybdate (13446-49-6)	
ACGIH	Not applicable
OSHA	Not applicable

lithium carbonate (554-13-2)	
ACGIH	Not applicable
OSHA	Not applicable

Molybdenum trioxide (1313-27-5)	
ACGIH	Not applicable
OSHA	Not applicable

dilithium molybdate (13568-40-6)	
ACGIH	Not applicable
OSHA	Not applicable

disodium wolframate (13472-45-2)	
ACGIH	Not applicable
OSHA	Not applicable

Isopropanol (67-63-0)		
ACGIH	ACGIH TWA (mg/m³)	490 mg/m³

Isopropanol (67-63-0)		
ACGIH	ACGIH TWA (ppm)	200 ppm
ACGIH	ACGIH STEL (mg/m³)	960 mg/m³
ACGIH	ACGIH STEL (ppm)	400 ppm
ACGIH	Remark (ACGIH)	Eye & URT irr; CNS impair
OSHA	OSHA PEL (TWA) (mg/m³)	980 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	400 ppm
Canada (Quebec)	VECD (mg/m³)	1230 mg/m³
Canada (Quebec)	VECD (ppm)	500 ppm
Canada (Quebec)	VEMP (mg/m³)	983 mg/m³
Canada (Quebec)	VEMP (ppm)	400 ppm

8.2. Exposure controls

Appropriate engineering controls : Avoid creating mist or spray. Avoid splashing. Either local exhaust or general room ventilation is usually required.

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Use rubber gloves.

Eye protection : Chemical goggles or safety glasses.

Skin and body protection : Long sleeved protective clothing.

Respiratory protection : Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Use an approved respirator equipped with oil/mist cartridges.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance : Opaque liquid.

Colour : Various.

Odour : No data available

Odour threshold : No data available

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flash point : None (CC)

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability (solid, gas) : No data available

Vapour pressure : No data available

Relative vapour density at 20 °C : No data available

Relative density : No data available

Solubility : No data available

Log Pow : No data available

Log Kow : No data available

Viscosity, kinematic : No data available

Viscosity, dynamic : No data available

Explosive properties : No data available

Oxidising properties : No data available

Explosive limits : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Direct sunlight. Heat.

10.5. Incompatible materials

Strong bases. Strong acids.

10.6. Hazardous decomposition products

Burning produces irritating, toxic and noxious fumes. Carbon dioxide. Carbon monoxide. Hydrogen halide. Bromides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Not classified.

acetoacetanilide (102-01-2)	
LD50 oral rat	1131 (1131 - 4650) mg/kg
ATE CLP (oral)	1131.000 mg/kg bodyweight
ATE CLP (dermal)	1100.000 mg/kg bodyweight
ATE CLP (dust,mist)	1.500 mg/l/4h

1,2-epoxybutane (106-88-7)	
LD50 oral rat	1100 µl/kg
ATE CLP (oral)	500.000 mg/kg bodyweight
ATE CLP (dermal)	1100.000 mg/kg bodyweight
ATE CLP (gases)	4500.000 ppmv/4h
ATE CLP (vapours)	11.000 mg/l/4h
ATE CLP (dust,mist)	1.500 mg/l/4h

1-bromopropane (106-94-5)	
LD50 oral rat	> 2000
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (ppm)	14374 ppm/4h
ATE CLP (gases)	14374.000 ppmv/4h

nitromethane (75-52-5)	
LD50 oral rat	1506 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 12.75 mg/l 1 h
ATE CLP (oral)	1506.000 mg/kg bodyweight

Toluene (108-88-3)	
LD50 oral rat	5580 mg/kg EU Method B.1 (Acute Toxicity (Oral))
LC50 inhalation rat (mg/l)	> 20 mg/l/4h OECD Guideline 403 (Acute Inhalation Toxicity)
ATE CLP (oral)	5580.000 mg/kg bodyweight

2',4'-dimethylacetoacetanilide (97-36-9)	
LD50 oral rat	1995 mg/kg
ATE CLP (oral)	1995.000 mg/kg bodyweight

2'-methylacetanilide (120-66-1)	
LD50 oral rat	1450 mg/kg
ATE CLP (oral)	1450.000 mg/kg bodyweight

salicylamide (65-45-2)	
LD50 oral rat	1400 mg/kg
ATE CLP (oral)	1400.000 mg/kg bodyweight

adipic acid (124-04-9)	
LD50 oral rat	5560 mg/kg
LD50 dermal rabbit	7940 ml/kg
LC50 inhalation rat (mg/l)	> 7.7 mg/l/4h
ATE CLP (oral)	5560.000 mg/kg bodyweight

hymecromone (90-33-5)	
LD50 oral rat	3850 mg/kg
ATE CLP (oral)	3850.000 mg/kg bodyweight

Fluorescein (2321-07-5)	
LD50 oral rat	600 mg/kg
ATE CLP (oral)	600.000 mg/kg bodyweight

lithium carbonate (554-13-2)	
LD50 oral rat	525 mg/kg
LD50 dermal rabbit	> 3000 mg/kg
LC50 inhalation rat (mg/l)	> 2 mg/l/4h
ATE CLP (oral)	525.000 mg/kg bodyweight

Molybdenum trioxide (1313-27-5)	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rat	> 2000 mg/kg bodyweight
LC50 inhalation rat (mg/l)	> 3.92 mg/l/4h

disodium wolframate (13472-45-2)	
LD50 oral rat	1539 (1206 - 1965) mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 5.01 mg/l/4h
ATE CLP (oral)	1539.000 mg/kg bodyweight

Isopropanol (67-63-0)	
LD50 oral rat	5840 mg/kg
LD50 dermal rabbit	16.4 ml/kg
LC50 inhalation rat (ppm)	> 10000 ppm/4h
ATE CLP (oral)	5840.000 mg/kg bodyweight

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Suspected of causing cancer.

1,2-epoxybutane (106-88-7)	
IARC group	2B - Possibly carcinogenic to humans

Toluene (108-88-3)	
IARC group	3 - Not classifiable

Isopropanol (67-63-0)	
IARC group	3 - Not classifiable

Reproductive toxicity : May damage fertility or the unborn child.

Specific target organ toxicity (single exposure) : May cause respiratory irritation. May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure) : May cause damage to organs through prolonged or repeated exposure.

acetoacetanilide (102-01-2)	
NOAEL (oral, rat, 90 days)	12 mg/kg bodyweight/day 28 days
Additional information	Affected organs: blood Route of exposure: oral

1-bromopropane (106-94-5)	
NOAEL (inhalation, rat, dust/mist/fume, 90 days)	1 mg/l/6h/day

Toluene (108-88-3)	
LOAEL (inhalation, rat, gas, 90 days)	1250 ppmv/6h/day
NOAEL (oral, rat, 90 days)	625 mg/kg bodyweight/day EU Method B.26. Increased relative weights of liver and kidney are interpreted as toxicologically insignificant differences in the absence of histological findings.
NOAEL (inhalation, rat, gas, 90 days)	300 ppmv/6h/day OECD Guideline 453

adipic acid (124-04-9)	
NOAEL (oral, rat, 90 days)	750 mg/kg bodyweight/day

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms

Symptoms/injuries after inhalation : May cause respiratory irritation. May cause drowsiness or dizziness.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes serious eye irritation.

Likely routes of exposure : Skin and eye contact;Inhalation

SECTION 12: Ecological information

12.1 Toxicity

acetoacetanilide (102-01-2)	
LC50 fish 1	242 (242 - 332) mg/l 96 hours, Brachydanio rerio
ErC50 (algae)	318 mg/l Selenastrum capricornutum , 72 hours
ErC50 (other aquatic plants)	500 mg/l 3 hours
NOEC chronic algae	180 mg/l

1,2-epoxybutane (106-88-7)	
LC50 fish 1	> 100 mg/l 96 h
EC50 Daphnia 1	70 mg/l 48 h
ErC50 (algae)	> 500 mg/l 72 h

1-bromopropane (106-94-5)	
EC50 Daphnia 1	203 mg/l 24 h
ErC50 (algae)	52.4 mg/l

nitromethane (75-52-5)	
LC50 fish 1	659.2 mg/l 96 h
EC50 Daphnia 1	> 103 mg/l 48 h

Toluene (108-88-3)	
LC50 fish 1	5.5 mg/l
EC50 Daphnia 2	3.78 mg/l
ErC50 (algae)	134 mg/l
LOEC (chronic)	2.77 mg/l
NOEC chronic fish	1.39 mg/l
NOEC chronic crustacea	0.74 mg/l

2',4'-dimethylacetoacetanilide (97-36-9)	
LC50 fish 1	250 (250 - 350) mg/l

salicylamide (65-45-2)	
LC50 fish 1	101 mg/l 96 h
EC50 Daphnia 1	75 mg/l 24 h

adipic acid (124-04-9)	
LC50 fish 1	>= 1000 mg/l 96 h
EC50 Daphnia 1	46 mg/l 48 h

lithium carbonate (554-13-2)	
LC50 fish 1	30.3 mg/l 96 h
EC50 Daphnia 1	33.2 mg/l 48 h

Molybdenum trioxide (1313-27-5)	
LC50 fish 1	>= 43.3 (≤ 58) mg/l
NOEC (chronic)	> 87.8 mg/l

disodium wolframate (13472-45-2)	
LC50 fish 1	> 200 mg/l 96 h
EC50 Daphnia 1	> 163 mg/l 96 h

Isopropanol (67-63-0)	
LC50 fish 1	10000 mg/l

12.2. Persistence and degradability

acetoacetanilide (102-01-2)	
Persistence and degradability	Readily biodegradable.
Biodegradation	97 % degraded after 6 days

1,2-epoxybutane (106-88-7)	
Persistence and degradability	Readily biodegradable.

1-bromopropane (106-94-5)	
Persistence and degradability	Readily biodegradable.

nitromethane (75-52-5)	
Persistence and degradability	Not readily biodegradable.
Biodegradation	9.9 % 28 d

Toluene (108-88-3)	
Persistence and degradability	Readily biodegradable.

2',4'-dimethylacetoacetanilide (97-36-9)	
Biodegradation	25 % 28 d

salicylamide (65-45-2)	
Biodegradation	99 % 28 d

adipic acid (124-04-9)	
Persistence and degradability	Readily biodegradable.
Biodegradation	90 % 5 d

Isopropanol (67-63-0)	
Persistence and degradability	Readily biodegradable.

12.3. Bioaccumulative potential

acetoacetanilide (102-01-2)	
Log Pow	0.76

1,2-epoxybutane (106-88-7)	
Log Pow	0.86

1-bromopropane (106-94-5)	
BCF fish 1	11.29 L/kg wwt

1-bromopropane (106-94-5)	
Log Pow	2.16

nitromethane (75-52-5)	
Log Pow	-0.241

Toluene (108-88-3)	
Bioconcentration factor (BCF REACH)	90
Log Kow	2.73

2',4'-dimethylacetoacetanilide (97-36-9)	
Log Pow	1.4

salicylamide (65-45-2)	
Log Pow	1.31

adipic acid (124-04-9)	
BCF fish 1	3.162
Log Pow	0.093

Isopropanol (67-63-0)	
Bioaccumulative potential	Not expected to bioaccumulate.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

In accordance with DOT and TDG

Not considered a dangerous good for transport regulations

Proper Shipping Name (ADR) : Not applicable

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

acetoacetanilide (102-01-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

1,2-epoxybutane (106-88-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on United States SARA Section 313	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	100 lb

1-bromopropane (n-propyl bromide) (106-94-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

nitromethane (75-52-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on United States SARA Section 313	

Toluene (108-88-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on United States SARA Section 313	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	1000 lb

2',4'-dimethylacetoacetanilide (97-36-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

2'-methylacetanilide (120-66-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

salicylamide (65-45-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

adipic acid (124-04-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	5000 lb

hymecromone (90-33-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Fluorescein (2321-07-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

potassium molybdate (13446-49-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

lithium carbonate (554-13-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 313 - Emission Reporting	0 %

Molybdenum trioxide (1313-27-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

dilithium molybdate (13568-40-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

disodium wolframate (13472-45-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Isopropanol (67-63-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Fire hazard

15.2. International regulations

CANADA

acetoacetanilide (102-01-2)
Listed on the Canadian DSL (Domestic Substances List) inventory.

1,2-epoxybutane (106-88-7)
Listed on the Canadian DSL (Domestic Substances List) inventory.

1-bromopropane (n-propyl bromide) (106-94-5)
Listed on the Canadian DSL (Domestic Substances List) inventory.

nitromethane (75-52-5)
Listed on the Canadian DSL (Domestic Substances List) inventory.

Toluene (108-88-3)
Listed on the Canadian DSL (Domestic Substances List) inventory.

2',4'-dimethylacetoacetanilide (97-36-9)
Listed on the Canadian DSL (Domestic Substances List) inventory.

2'-methylacetanilide (120-66-1)
Listed on the Canadian NDSL (Non-Domestic Substances List)

salicylamide (65-45-2)
Listed on the Canadian DSL (Domestic Substances List) inventory.

adipic acid (124-04-9)
Listed on the Canadian DSL (Domestic Substances List) inventory.

hymecromone (90-33-5)
Listed on the Canadian DSL (Domestic Substances List) inventory.

Fluorescein (2321-07-5)
Listed on the Canadian DSL (Domestic Substances List) inventory.

lithium carbonate (554-13-2)
Listed on the Canadian DSL (Domestic Substances List) inventory.

Molybdenum trioxide (1313-27-5)
Listed on the Canadian DSL (Domestic Substances List) inventory.

dilithium molybdate (13568-40-6)
Listed on the Canadian NDSL (Non-Domestic Substances List)

disodium wolframate (13472-45-2)
Listed on the Canadian DSL (Domestic Substances List) inventory.

Isopropanol (67-63-0)
Listed on the Canadian DSL (Domestic Substances List) inventory.

EU-Regulations

acetoacetanilide (102-01-2)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

1,2-epoxybutane (106-88-7)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

1-bromopropane (n-propyl bromide) (106-94-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

nitromethane (75-52-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Toluene (108-88-3)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

2',4'-dimethylacetoacetanilide (97-36-9)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

2'-methylacetanilide (120-66-1)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

salicylamide (65-45-2)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

adipic acid (124-04-9)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

hymecromone (90-33-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Fluorescein (2321-07-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

potassium molybdate (13446-49-6)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

lithium carbonate (554-13-2)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Molybdenum trioxide (1313-27-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

dilithium molybdate (13568-40-6)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

disodium wolframate (13472-45-2)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Isopropanol (67-63-0)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Tempilaq® Temperature Indicating Liquid
All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS). All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL). All ingredients are listed in the Toxic Substances Control Act (TSCA).

15.3. US State regulations

1-bromopropane (n-propyl bromide) (106-94-5)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
No	Yes	Yes	Yes	
Toluene (108-88-3)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
No	Yes	Yes	Yes	7000
lithium carbonate (554-13-2)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes	No	No	No	

1,2-epoxybutane (106-88-7)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List
nitromethane (75-52-5)
U.S. - Minnesota - Hazardous Substance List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - New York - Right to Know List of Hazardous Chemicals

Toluene (108-88-3)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List
adipic acid (124-04-9)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List
lithium carbonate (554-13-2)
U.S. - New Jersey - Right to Know Hazardous Substance List
Isopropanol (67-63-0)
U.S. - Minnesota - Hazardous Substance List U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Indication of changes : Original Document.

Data sources : ACGIH 2000.

Canadian Centre for Occupational Health and Safety. Accessed at: http://www.ccohs.ca/oshanswers/legisl/whmis_classifi.html.

ESIS (European chemincal Substances Information System; accessed at: http://esis.jrc.ec.europa.eu/index.php?PGM=cla.

European Chemicals Agency (ECHA) Registered Substances list. Accessed at http://echa.europa.eu/. Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.

National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th edition.

OSHA 29CFR 1910.1200 Hazard Communication Standard.

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

TSCA Chemical Substance Inventory. Accessed at http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html.

Abbreviations and acronyms : ACGIH (American Conference of Governement Industrial Hygienists).

ATE: Acute Toxicity Estimate.

CAS (Chemical Abstracts Service) number.

CLP: Classification, Labelling, Packaging.

EC50: Environmental Concentration associated with a response by 50% of the test population.

GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).

LD50: Lethal Dose for 50% of the test population.

OSHA: Occupational Safety & Health Administration.

PBT: Persistent, Bioaccumulative, Toxic.

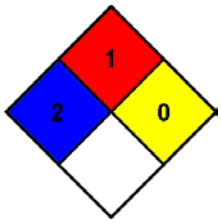
STEL: Short Term Exposure Limits.

TSCA: Toxic Substances Control Act.

TWA: Time Weight Average.

Other information : None.

NFPA health hazard	:	2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
NFPA fire hazard	:	1 - Must be preheated before ignition can occur.
NFPA reactivity	:	0 - Normally stable, even under fire exposure conditions, and not reactive with water.



Full text of H-phrases:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Asp. Tox. 1	Aspiration hazard, Category 1
Carc. 2	Carcinogenicity, Category 2
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
Repr. 1B	Reproductive toxicity, Category 1B
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H225	Highly flammable liquid and vapour
H226	Flammable liquid and vapour
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H312	Harmful in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H351	Suspected of causing cancer
H360	May damage fertility or the unborn child
H361	Suspected of damaging fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure
H412	Harmful to aquatic life with long lasting effects

SDS Prepared by: The Redstone Group, LLC
6397 Emerald Pkwy.
Suite 200
Dublin, OH USA 43016
T 614-923-7472
www.redstonegrp.com

LACO NA GHS SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product