

HEALTH CANADA 	PROTECTIVE CLOTHING 	TRANSPORT OF DANGEROUS GOODS 	AEROSOL Class 2.1 UN1950 P.G.: None
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SECTION I: IDENTIFICATION

Use: Primer used to enhance adhesion of self-adhesive membranes on porous surfaces.

Manufacturer: Soprema Canada
 1675 Haggerty Street
 Drummondville (Quebec) J2C 5P7
 CANADA
 Tel.: 819 478-8163

Distributor: Division Resisto, Soprema Canada
 1675, rue Haggerty
 Drummondville (Quebec) J2C 5P7
 CANADA
 Tel.: 819 478-8408 – 1877 478-8408

In case of emergency:
 SOPREMA (8:00am to 5:00pm): 1 800 567-1492 CANUTEC (Canada) (24h.): 613 996-6666 CHEMTREC (USA) (24h.): 1 800 424-9300

SECTION II: HAZARD(S) IDENTIFICATION

DANGER

Extremely flammable aerosol. Extremely flammable gas. Contains gas under pressure; may explode if heated. Highly flammable liquid and vapour. May be fatal if swallowed and enters airways. Harmful if swallowed. Harmful if inhaled. May cause drowsiness or dizziness. Causes skin irritation. Causes eye irritation. May cause damage to the organs through prolonged or repeated exposure.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Pressurized container: Do not pierce or burn, even after use. Keep away from heat, sparks, open flames and hot surfaces. No smoking. Do not spray on an open flame or other ignition source. Use explosion proof electrical equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not eat or drink when using this product. Avoid breathing vapours. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Wear protective gloves, eye protection and an organic vapour respirator. Store in a well-ventilated place. Keep container tightly closed. Keep cool. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Store locked up. Dispose of container in accordance with local, regional and national regulations.

SECTION III: COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

NAME	CAS #	% WEIGHT	EXPOSURE LIMIT (ACGIH)	
			TLV-TWA	TLV-STEL
Acetone	67-64-1	30-60	500 ppm	750 ppm
Propane	74-98-6	10-30	1 000 ppm	Not available
Methyl acetate	79-20-9	10-30	200 ppm	250 ppm
Isobutane	75-28-5	3-7	1 000 ppm	Not available
tert-Butyl acetate	540-88-5	3-7	200 ppm	Not available

Effects of Short-Term (Acute) Exposure

INHALATION

Acetone: In one study, volunteers exposed to concentrations up to 500 ppm reported no harmful effects. In other studies, concentrations of approximately 300-500 ppm were reported to cause slight irritation of the nose and throat. Exposure to 250 ppm for 4 hours has caused mild effects on performance in some behavioural tests (auditory tone discrimination and a mood test). As concentrations approach 1 000 ppm, noticeable irritation has occurred and some people have reported headaches, light-headedness and tiredness. Inhalation of concentrations higher than 2 000 ppm can cause dizziness, a feeling of drunkenness, drowsiness, nausea and vomiting. Unconsciousness may result if exposure is extremely high (greater than 10 000 ppm). Intolerable nose and throat irritation would also occur at these concentrations. Even higher concentrations can cause collapse, coma and death. (1)

Propane: At air concentrations below 1 000 ppm propane is virtually non-toxic. Brief exposures to 10 000 ppm cause no symptoms; 100 000 ppm can produce slight dizziness after a few minutes of exposure, but is not noticeably irritating to the nose and throat. Propane is a simple asphyxiant. High concentrations of propane can displace oxygen and cause asphyxiation. Oxygen content in the atmosphere must not be allowed to fall below 18%. Effects of oxygen deficiency are: 12-16% breathing and pulse rate increased, muscular co-ordination slightly disturbed; 10-14% emotional upset, abnormal fatigue, disturbed respiration; 6-10%: nausea and vomiting, collapse or loss of consciousness; below 6%: convulsive movements, possible respiratory collapse and death. (1)

Methyl acetate: The vapour can probably irritate the nose and throat. Exposure to 4 050 ppm for a short time was the lowest irritating level in humans. Exposure to 10 000 ppm produced persistent irritation. No further details are available. Based on animal information, severe exposures can probably produce signs of central nervous system (CNS) depression such as shortness of breath, headache, drowsiness and dizziness. (1)

Isobutane: Low toxicity. Inhalation of 5% (50 000 ppm) isobutane for 2 hours caused no ill effects. No health effects were seen in humans exposed at 1 000 ppm for up to 8 hours or 500 ppm for 8 hours/day for 10 days. Isobutane can have CNS and asphyxiating effects at high concentrations -- well above the lower explosion limit of 1.8% (18 000 ppm). (1)

tert-Butyl acetate: The vapour is probably irritating to the nose and throat. Exposures to high concentrations can probably cause signs of CNS depression including headache, dizziness, nausea and unconsciousness. There is no specific information available for tert-butyl acetate, but effects would probably be like those observed in animals and humans following exposure to other butyl acetates. (1)

SKIN CONTACT

Acetone: Acetone is a non-irritant to very mild irritant, based on animal and limited human information. The risk of developing health effects following the absorption of acetone through unbroken skin is very slight. (1)

Propane: The gas does not affect the skin. Contact with liquefied gas escaping at high pressure may cause frostbite. Symptoms of mild frostbite include numbness, prickling and itching in the affected area. Symptoms of more severe frostbite include a burning sensation and stiffness of the affected area. The skin may become waxy white or yellow. Blistering, tissue death and gangrene may also develop in severe cases. Close range contact with liquefied propane gas may cause injury characteristic of a thermal burn with swelling, fluid accumulation and extreme redness. Tissue death and gangrene may also develop. (1)

Methyl acetate: There is no human information available. Based on animal data, the liquid is probably a mild irritant. Based on a dermal LD50, methyl acetate can be absorbed through the skin but is not expected to be toxic by this route of exposure. (1)

Isobutane: Contact with liquefied gas escaping at high pressure may cause frostbite. Symptoms of mild frostbite include numbness, prickling and itching in the affected area. Symptoms of more severe frostbite include a burning sensation and stiffness of the affected area. The skin may become waxy white or yellow. Blistering, tissue death and gangrene may also develop in severe cases. (1)

tert-Butyl acetate: The liquid may be a mild to moderate skin irritant, based on comparison to related butyl acetates. There is no human or animal information available for tert-butyl acetate. (1)

EYE CONTACT

Acetone: Acetone is a severe irritant based on animal and limited human information. (1)

Propane and Isobutane: The gas does not cause eye irritation. Contact with liquefied gas escaping at high pressure may cause freezing of the eye. Permanent eye damage or blindness could result. (1)

Methyl acetate: There is no human information available. Animal evidence indicates that the liquid would cause moderate to severe irritation. Based on animal information, the vapour is probably irritating at high concentrations. If ingested, methyl acetate may form methanol in the body, which can cause severe damage to vision. There is one case report of eye damage following ingestion of methyl acetate. (1)

tert-Butyl acetate: The liquid can probably cause moderate to severe eye irritation, based on comparison to related acetates. The vapour can probably cause mild to severe eye irritation, depending on the concentration. There is no specific information available for tert-butyl acetate. (1)

INGESTION

Acetone: Ingestion is not a typical route of occupational exposure. Several studies report no effects or minor effects (slight drowsiness) in people who ingested up to 20 grams/day for several days. Animal toxicity information also suggests that acetone is not very toxic following ingestion. If acetone is aspirated (breathed into the lungs during ingestion or vomiting) it can cause severe, life-threatening lung injury. Animal information suggests that acetone would be difficult to aspirate because it evaporates so quickly. (1)

Methyl acetate: Methyl acetate can probably irritate the mouth and throat. One drop of methyl acetate placed on the human tongue produced a burning sensation, followed by reddening and swelling. Ingestion of small quantities may cause shortness of breath, headache, drowsiness and dizziness; more severe exposures may lead to acidosis, vision impairment and possibly death. These severe effects may be caused by methanol and acetic acid which are formed when methyl acetate is broken down (hydrolyzed) in the body. Ingestion is not a typical route of occupational exposure. (1)

tert-Butyl acetate: Related butyl acetates are not very toxic by ingestion. Like other butyl acetates, tert-butyl acetate may be irritating to the mouth and throat. Ingestion of large amounts may produce signs of CNS depression, like those described for "Inhalation" above. Ingestion is not a typical route of occupational exposure. (1)

Propane and Isobutane: No information available.

NERVOUS SYSTEM

Acetone: No conclusions can be drawn from the human information located. Studies in animals have not shown neurotoxic effects from acetone. (1)

Propane, Methyl acetate, tert-Butyl acetate and Isobutane: There is no human or animal information available.

SKIN

Acetone: Prolonged or repeated contact may cause defatting of the skin and produce dermatitis (dryness, irritation, redness and cracking). (1)

Propane, Methyl acetate, tert-Butyl acetate and Isobutane: There is no human or animal information available.

SKIN SENSITIZATION

Acetone: Acetone is not a skin sensitizer. Negative results have been obtained in tests in humans and, despite widespread industrial use, no conclusive case reports of sensitization were located. Negative results were obtained in animal tests. (1)

Propane, Methyl acetate, tert-Butyl acetate and Isobutane: There is no human or animal information available.

BLOOD/BLOOD FORMING SYSTEM

Acetone: No significant changes in blood composition or chemistry were found in 60 workers who had worked at least 5 years in the acetate fibre manufacturing industry (exposures of 550-1050 ppm). (1)

Propane, Methyl acetate, tert-Butyl acetate and Isobutane: There is no human or animal information available.

CARCINOGENICITY

Acetone: Acetone is not known to be a carcinogen. Little human information was located. Animal information suggests that acetone is not carcinogenic. The International Agency for Research on Cancer (IARC) has not evaluated the carcinogenicity of this chemical. The American Conference of Governmental Industrial Hygienists (ACGIH) has designated this chemical as not classifiable as a human carcinogen (A4). NOTE: ACGIH has published a Notice of Intended Change to remove the designation of A4 (not classifiable as a human carcinogen). The US National Toxicology Program (NTP) has not listed this chemical in its report on carcinogens. (1)

Propane and Isobutane: There is no human or animal information available. IARC has not evaluated the carcinogenicity of these chemicals. ACGIH has not assigned a carcinogenicity designation to these chemicals. NTP has not listed these chemicals in its report on carcinogens. (1)

Methyl acetate: No human or animal information available. Probably not carcinogenic. The metabolites of methyl acetate, methanol and acetic acid, have not been shown to be carcinogenic. IARC has not evaluated the carcinogenicity of this chemical. ACGIH has not assigned a carcinogenicity designation to this chemical. NTP has not listed this chemical in its report on carcinogens. (1)

tert-Butyl acetate: No human or animal information available. Probably not carcinogenic. IARC has not evaluated the carcinogenicity of this chemical. ACGIH has not assigned a carcinogenicity designation to this chemical. NTP has not listed this chemical in its report on carcinogens. (1)

TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY

Acetone: The information located is not sufficient to conclude that acetone causes developmental toxicity. No conclusions can be drawn based on the limited human information available. In animal studies, inhalation of acetone caused fetotoxicity in rats and mice and embryotoxicity in mice, but only at concentrations that also caused maternal toxicity. A limited oral study in mice showed fetotoxicity and embryotoxicity at a dose that did not cause decreased maternal body weight during pregnancy. (1)

tert-Butyl acetate: See section XI.

Propane, Methyl acetate and Isobutane: No human or animal information is available. (1)

REPRODUCTIVE TOXICITY

Acetone: The information located is not sufficient to conclude that acetone causes reproductive toxicity. No conclusions can be drawn from the limited human information available. (1)

tert-Butyl acetate: See section XI.

Propane, Methyl acetate and Isobutane: No human or animal information is available. (1)

MUTAGENICITY

Acetone: Acetone is not known to be a mutagen. No human information was located. There are no confirmed studies that show mutagenicity in live animals. (1)

Methyl acetate: No human or animal information is available. Methyl acetate was not mutagenic in one in vitro test with bacteria, but the vapour was mutagenic to yeast. (1)

tert-Butyl acetate: See section XI.

Propane and Isobutane: No human or animal information is available. (1)

TOXICOLOGICALLY SYNERGISTIC MATERIALS

Acetone: A major effect of acetone is its enhancement of the toxicity of many other chemicals. Many occupational situations that involve acetone exposure also involve exposures to other potentially harmful chemicals. (1)

Methyl acetate: No information is available. (1)

tert-Butyl acetate: No information is available. (1)

Propane and Isobutane: No human or animal information is available. (1)

POTENTIAL FOR ACCUMULATION

Acetone: Acetone does not accumulate. It is a normal by-product of mammalian metabolism and is found in virtually every organ and tissue, and in the blood. Acetone can enter the body by inhalation, ingestion or skin contact. It is metabolized by at least two pathways to compounds that are used by the body to make glucose and other products of intermediary metabolism, with the generation of carbon dioxide. Acetone is excreted both unchanged, and following metabolism, mainly as carbon dioxide. The main route of excretion is in the expired air, with very little excreted in the urine. Respiratory excretion is complete within 20 hours after inhalation. The amount of unchanged acetone excreted in the urine increases with increasing exposure concentration and duration, and with exercise during exposure. (1)

Methyl acetate: Does not accumulate. Methyl acetate is readily absorbed through the lungs and gastrointestinal tract. It is partly excreted in the expired air and in the urine. It has been shown in humans that methyl acetate is hydrolyzed in the body to acetic acid, which is naturally formed in the body, and methanol, which is excreted in urine. (1)

tert-Butyl acetate: Probably does not accumulate. Studies suggest that tert-butyl acetate is rapidly broken down in the body to acetic acid and tert-butanol and eliminated in the urine. Another study shows that tert-butyl acetate is more slowly eliminated from blood than n-butyl acetate. (1)

Propane and Isobutane: No human or animal information is available. (1)

SECTION IV: FIRST-AID MEASURES

If exposed or concerned: Get medical advice.

SKIN CONTACT

Wash with plenty of water. If skin irritation occurs: Get medical advice. Take off immediately all contaminated clothing and wash it before reuse.

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.

INHALATION

Remove person to fresh air and keep comfortable for breathing. Call a poison center if you feel unwell.

SWALLOWING

Immediately call a poison center. Do NOT induce vomiting. Rinse mouth.

SECTION V: FIRE-FIGHTING MEASURES

FLAMMABILITY: Flammable aerosol
EXPLOSION DATA: Sensitivity to mechanical impact: No
Sensitivity to static charge: Vapours in the flammable range may be ignited by a static discharge of sufficient energy.

FLASH POINT: -104.4°C (Propane) (ASTMD93)

AUTO-IGNITION TEMPERATURE: 450°C (Propane)

FLAMMABILITY LIMITS IN AIR: (% en volume) 3.1 – 16 (Methyl acetate)

FIRE AND EXPLOSION HAZARDS

Extremely flammable gas. This aerosol will readily ignite under the action of heat, sparks or flames. Vapours may form explosive mixtures with air. Vapours are heavier than air and may travel a considerable distance to a source of ignition and flash back to a leak or open container. The product may ignite on contact with strong oxidizing agents, strong acids and strong bases. Do not cut, puncture or weld empty containers.

COMBUSTION PRODUCTS

Carbon oxides (CO, CO₂). Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion.

FIRE FIGHTING INSTRUCTIONS

Evacuate area. Wear self-contained breathing apparatus and appropriate protective clothing in accordance with standards. Approach fire from upwind and fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Always stay away from containers because of the high risk of explosion. Stop leak before attempting to put out the fire. If leak cannot be stopped, and if there is no risk to the surrounding area, let the fire burn itself out. Move containers from fire area if this can be done without risk. Cool containers with flooding quantities of water until well after fire is out.

MEANS OF EXTINCTION

“Alcohol” foam or polymer foam, dry chemical powder, CO₂, sand. Use of water spray when fighting fire may be inefficient because of the low flash point of the product.

SECTION VI: ACCIDENTAL RELEASE MEASURES

RELEASE OR SPILL

Ventilate area. Wear appropriate protective equipment during cleanup. Eliminate all ignition sources. Shut off source of leak if it can be done without risk. Contain the spill. Absorb with inert material such as sand or earth. Sweep or shovel into containers with lids, use clean non-sparkling tools (sp.: plastic) to collect absorbed material. Cover and remove to appropriate well-ventilated area until disposal. Wash spill area with soap and water. Prevent entry into waterways, sewers or basements. Dispose of this product according to local environmental regulations.

SECTION VII: HANDLING AND STORAGE

HANDLING

This product and its vapours are extremely flammable and toxic. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing mist, vapour or dust. Wash thoroughly after handling. Before handling, it is very important that ventilation controls are operating and protective equipment requirements are being followed. People working with this product would be properly trained regarding its hazards and its safe use. Eliminate all ignition sources (e.g. sparks, open flames, hot surfaces). Keep away from heat. Ground transfer containers to avoid static accumulation. Tightly reseal all partially used containers. Do not cut, puncture or weld containers.

STORAGE

Store in a cool well-ventilated area out of direct sunlight and away from heat and ignition sources. Keep storage areas clear of combustible materials. No smoking near storage area. Store away from incompatible materials. Store the product according to occupational health and safety regulations and fire and building codes. Storage area should be clearly

identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment near storage area. Inspect all containers to make sure they are properly labelled.

SECTION VIII: EXPOSURE CONTROLS / PERSONAL PROTECTION

HANDS: Wear gloves in polyethylene or ethylene vinyl alcohol. For short periods of time, you can use butyl rubber, natural rubber, neoprene rubber, nitril rubber, polyvinyl alcohol, polyvinyl chloride and Viton.

RESPIRATORY: If the TLV is exceeded, if use is performed in a poorly ventilated confined area, use an approved respirator in accordance with standards (chemical cartridge respirator with organic vapour cartridge(s)).

EYES: Wear chemical safety goggles in accordance with standards.

OTHERS: Eye bath and safety shower.

CONTROL OF VAPOURS: Local exhaust is needed to control vapour and dust level to below recommended limits

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Aerosol
ODOUR AND APPEARANCE:	Red liquid with solvent-like odour similar to camphor odour
ODOUR THRESHOLD:	Not available
VAPOUR DENSITY (air = 1):	Heavier than air
EVAPORATION RATE (Butyl acetate = 1):	Not available
BOILING POINT (760 mm Hg):	Not available
FREEZING POINT:	Not available
SPECIFIC GRAVITY (H₂O = 1):	0.94 kg/L
SOLUBILITY IN WATER (20°C):	Not soluble
VOLATILE ORGANIC COMPOUND (V.O.C.) CONTENT:	0 g/L
VISCOSITY:	400 centipoises (Visco Brookfield RV)

SECTION X: STABILITY AND REACTIVITY

STABILITY: This material is stable.

CONDITIONS OF REACTIVITY: Avoid excessive heat.

INCOMPATIBILITY: Strong acids, strong bases, strong oxidizing agents and potassium tert-butoxide.

HAZARDOUS DECOMPOSITION PRODUCTS: Acetic acid, tert-butanol and methanol. During a fire, irritating/toxic gases, such as carbon monoxide, carbon dioxide and other toxic may be formed, depending on fire conditions

CONDITIONS TO AVOID: Open flames, sparks, electrostatic discharge, heat and other ignition sources; prolonged exposure to direct sunlight and moisture.

HAZARDOUS POLYMERISATION: None.

SECTION XI: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA

Acetone: (1)

LC ₅₀ (rat):	30 000 ppm (4-hour exposure)
LD ₅₀ (oral, male rat):	6 700 mg/kg
LD ₅₀ (dermal, rabbit):	15 800 mg/kg

Propane : (1)

CL ₅₀ (inhalation, mouse) :	800 000 ppm (>80%) (15 minutes exposure)
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Methyl acetate: (1)

LC ₅₀ (rat):	16 000 – 32 000 ppm (4-hour exposure)
LD ₅₀ (oral, rat):	Greater than 5 000 mg/kg
LD ₅₀ (dermal, rabbit):	Greater than 5 000 mg/kg

Isobutane : (1)

CL ₅₀ (inhalation, mouse) :	520 000 ppm (57%) (15 minutes exposure)
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tert-Butyl acetate: (2)

LC ₅₀ (male rat):	4 211 ppm (6-hour exposure)
LD ₅₀ (oral, rat):	4 500 mg/kg
LD ₅₀ (dermal, rabbit):	2 000 mg/kg

Effects of Short-Term (Acute) Exposure

INHALATION

Acetone: Numerous studies have evaluated the effects of acetone on the CNS. The degree of CNS depression depends on both the concentration of acetone and the length of exposure. Drowsiness, incoordination, loss of reflexes, unconsciousness, respiratory failure and death have been observed. In general, acetone concentrations in excess of 8 000 ppm are required to produce symptoms, regardless of the exposure duration and species tested. (1)

Propane: Guinea-pigs breathing 5.5% (55 000 ppm) propane by volume developed tremors after 5 minutes. Nausea, retching and stupefaction were observed when animals were exposed for 30-120 minutes. All the animals survived a 2-hour exposure and had no significant tissue damage. A gas concentration of 89% did not cause anesthesia, but depressed the blood pressure of cats. Inhalation of 10% propane by mice and 15% by dogs causes weak cardiac sensitization. Presumably, all of these effects are reversible when exposure ceases. In primates, 10% propane (100 000 ppm) caused some changes in heart function. At 20% there was aggravation of these symptoms and respiratory depression. (1)

Methyl acetate: Cats and mice exposed to 18 500 ppm or less for short periods (up to 6 hours) experienced eye irritation, difficulty in breathing and CNS depression. Exposures up to 55 440 ppm for 10-20 minutes (mice) and 53 790 ppm for 14-18 minutes (cats) caused fluid accumulation in the lungs and deaths. No effects were noted in mice exposed to 5 000 ppm for 20 minutes. While, similar exposure produced eye irritation and salivation in cats. Cats exposed to 6 600 ppm, 6 hours/day for 7 days showed eye irritation, CNS depression, weight loss and some minor effects. Four of 5 cats survived and recovered slowly. (1)

Isobutane: Mice exposed to isobutane concentrations of 15% (150 000 ppm), 20% (200 000 ppm) and 23% (230 000 ppm) showed signs of anaesthesia within 60, 17 and 26 minutes, respectively. Exposure to 10 to 20% (100 000 to 200 000 ppm) did not cause any circulatory effects, but did cause slight respiratory depression in monkeys. Isobutane is a weak cardiac sensitizer in dogs and rats (high concentrations can cause abnormal heartbeat in animals under stress). (1)

tert-Butyl acetate: High vapour concentrations may cause CNS stimulation (increased activity, shaking, tremors) and/or depression (fatigue, dizziness, and possibly loss of concentration, with collapse, coma and death in case of severe over-exposure). (2)

EYE IRRITATION

Acetone: Acetone is a severe eye irritant. (1)

Methyl acetate: Application of 100 mg in a standard Draize test produced moderate irritation in rabbits. Application of 0.005 ml produced severe injury to the corneas of rabbits. (1)

Isobutane (rabbit): Application of a hair spray containing 22% isobutane resulted in mild, temporary irritation. (1)

tert-Butyl acetate: Moderate eye irritant. Effects of eye irritation are reversible. (2)

Propane: No information available.

SKIN CONTACT

Acetone: Acetone is a non-irritant to very mild irritant. (1)

Propane: Several formulations containing an isobutane-propane mixture were tested for skin irritation effects. All formulations contained less than 13% propane. All of the formulations containing propane caused only mild irritation. (1)

Methyl acetate: In two studies, application of 500 mg or 0.01 ml produced mild irritation in rabbits in standard Draize tests. In another study, application of 20 mg produced moderate irritation in rabbits in a standard Draize test. (1)

Isobutane (rabbit): Application of a formulation containing 83.2% isobutane resulted in moderate irritation. However, application of other formulations containing 74.25 to 89.55% isobutane only produced mild irritation. The presence of other chemicals in the formulations probably influenced the results. (1)

tert-Butyl acetate: No systemic toxicity is expected from acute dermal exposure. There is no data to indicate whether this substance is absorbed through the skin. Slight skin irritant. (2)

INGESTION

Methyl acetate: No relevant animal toxicity information was located. (1)

tert-Butyl acetate: High doses may cause CNS depression (fatigue, dizziness and possibly loss of concentration, with collapse, coma and death in cases of severe over-exposure). (2)

Acetone, Propane and Isobutane: No information available.

Effects of Long-Term (Chronic) Exposure

INHALATION

Acetone: No significant harmful effects were observed in rats exposed by inhalation to 19 000 ppm (3 hours/day, 5 days/week) for 8 weeks. (42) Male rats exposed to 0, 1 000, 2 000 or 4 000 ppm for 13 weeks (6 hours/day, 5 days/week) had no effects on the performance of a previously learned complex task. (1)

Propane: No toxicity or abnormalities were observed when monkeys were exposed to approximately 750 ppm for 90 days. Similar results were obtained in another study where monkeys were exposed to an aerosol spray containing 65% propane and isobutane. (1)

Isobutane: Rabbits and monkeys were exposed for 90 days to 3 different aerosol products (2 hair sprays and a deodorant) containing isobutane. No significant toxic effects were seen in any of the studies. (1)

Methyl acetate and tert-Butyl acetate: No information available.

INGESTION

Acetone: Mild harmful effects were observed in rats and mice exposed to high oral doses for 13 weeks. Rats were given 0, 0.25, 0.5, 1, 2 or 5% acetone in the drinking water for 13 weeks. Approximate reported doses for males were 0, 200, 400, 900, 1 700 and 3 400 mg/kg/day, while females received 0, 300, 600, 1 200, 1 600 and 3 100 mg/kg/day. Rats receiving the high dose had decreased body weight. Liver and kidney weights were increased in rats receiving 1 600 mg/kg/day or greater. Changes consistent with macrocytic anemia were observed at 400 mg/kg/day (males) and at 1 600 (males) or 1 700 (females) mg/kg/day. Dose-related kidney damage was observed in males. No hyaline droplet formation was observed (an effect specific to male rats). Mice were similarly exposed. Approximate reported doses for males ranged from 380-4 858 mg/kg/day for males and 892-11 298 mg/kg/day for females. Liver weights were increased and spleen weights decreased in females given 11 298 mg/kg/day. The volume of red blood cells was increased in females at 11 298 mg/kg/day and haemoglobin was increased in females at 5 945 mg/kg/day and higher and in males at 1 353 mg/kg/day and higher. (1)

Propane, Methyl acetate, Isobutane and tert-Butyl acetate: No information available.

SKIN SENSITIZATION

Acetone: Acetone is not a skin sensitizer. (1)

Propane, Methyl acetate, Isobutane and tert-Butyl acetate: No information available.

CARCINOGENICITY

Acetone: Acetone is not known to be a carcinogen. (1)

Methyl acetate: No relevant animal toxicity information was located. (1)

tert-Butyl acetate: Specific data not available. Tert-Butanol, the primary metabolite of tert-butyl acetate, is an animal carcinogen. In a drinking water study, tert-butanol induced benign kidney tumours in male rats via a α -2u-globulin mode of action, a tumour mechanism not relevant to humans. In female mice, there was an increase incidence of benign thyroids tumours, a tumour mechanism that most likely is not relevant to humans. (2)

Propane and Isobutane: No information available.

TERATOGENOCITY, EMBRYOTOXICITY, FETOTOXICITY

Acetone: The information located is not sufficient to conclude that acetone causes developmental toxicity. Inhalation of acetone has caused

fetotoxicity in rats and mice and embryotoxicity in mice, but only at concentrations that also caused maternal toxicity. (1)

Methyl acetate: No relevant animal toxicity information was located. (1)

tert-Butyl acetate: This substance is not a developmental toxicant. It did not cause maternal toxicity and no embryo/foetal toxicity or developmental abnormalities were observed in the offspring of animals following inhalation exposures of 1 600 ppm. (2)

Propane and Isobutane: No information available.

MUTAGENICITY

Acetone: Acetone is not a mutagen. (1)

Methyl acetate: No relevant animal toxicity information was located. (1)

tert-Butyl acetate: Negative for mutagenicity both in vitro and in vivo tests. (2)

Propane and Isobutane: No information available.

SKIN SENSITIZATION

Methyl acetate: No relevant animal toxicity information was located. (1)

tert-Butyl acetate: Not expected to cause sensitization by skin contact. (2)

Acetone, Propane and Isobutane: No information available.

REPRODUCTIVE TOXICITY

Acetone: The information located is not sufficient to conclude that acetone causes reproductive toxicity. Effects on sperm have been observed in rats exposed orally to a dose that caused significant other toxicity. No effects on fertility have been observed. (1)

Methyl acetate: No relevant animal toxicity information was located. (1)

tert-Butyl acetate: This substance is not toxic to reproduction. The reproductive toxicity of tert-butyl acetate has been investigated in rats via the inhalation route. There were no adverse effects on reproductive performance or sperm number or quality at 1 600 ppm, the highest exposure level tested. In addition, no gross or histopathologic effects were observed in the reproductive organs of male and female rats or mice exposed at 1 600 ppm for 90 days in a repeat-exposure toxicity study conducted via inhalation and there was no adverse effect on estrous cycle length in mice. (2)

Propane, and Isobutane: No information available.

TOXICOLOGICAL SYNERGISMS

Acetone: Acetone has increased the liver and/or kidney toxicity of many chemicals including carbon tetrachloride, chloroform, trichloroethylene, bromodichloromethane, dibromochloromethane, N-nitrosodimethylamine and 1,1,2-trichloroethane. It also enhances the lung toxicity of styrene, the lethality of acetonitrile and the neurotoxicity 2,5-hexanedione in laboratory animals. (1)

Propane, Methyl acetate, Isobutane and tert-Butyl acetate: No information available.

SECTION XII: ECOLOGICAL INFORMATION

ENVIRONMENTAL EFFECTS

Do not allow product or runoff from fire control to enter grounds, basements, storm or sanitary sewers, lakes, rivers, streams or public waterways. Block off drains and ditches. Provincial and federal regulations may require that environmental and / or agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition or to the satisfaction of authorities. May be harmful to aquatic life.

SECTION XIII: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

This product is considered as dangerous material. Consult local, state, provincial or territory authorities to know disposal methods. This material is also known as dangerous waste by RCRA (USA); disposal should follow EPA regulations.

SECTION XIV: TRANSPORT INFORMATION

CLASSIFICATION (TDG and DOT): Class 2.1
IDENTIFICATION NUMBER: UN 1950
SHIPPING NAME: Aerosol
PACKING GROUP: None
CONTAINERS FOLLOW THE STANDARDS.

SECTION XV: REGULATORY INFORMATION

DSL: All constituents of this product are included in the Domestic Substances List (DSL – Canada).
TSCA: All constituents of this product are included in the Toxic Substances Control Act Inventory (TSCA – USA).
Prop. 65: This product does not contain chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION XVI: OTHER INFORMATION

GLOSSARY

ASTM: American Society for Testing and Materials (United States)
CAS: Chemical Abstract Services
CSA: Canadian Standardization Association
DOT: Department of Transportation (United States)
EPA: Environmental Protection Agency (United States)
GHS Globally Harmonized System
LD₅₀/LC₅₀: Less high lethal dose and lethal concentration published
NIOSH: National Institute for Occupational Safety and Health (United States)
RCRA: Resource Conservation and Recovery Act (United States)
TDG: Transportation of Dangerous Goods (Canada)
TLV-TWA: Threshold Limit Value – Time-Weighted Average

Reference:

- (1) CHEMINFO (2015) Canadian Centre for Occupational Health and Safety, Hamilton (Ontario) Canada
- (2) Manufacturer's SDS

Code of the SDS: CA U DRU SS FS 154

For more information: 1 800 567-1492

The Safety Data Sheets of RESISTO Canada are available on Internet at the following site: www.resisto.ca

Justification of the update:

- Section II.

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy of completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.