

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

1.1 Product identifier

Product name: SwanSolv Spray

Other identification:

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

Industrial cleaning applications. General degreasing.

1.3 Details of the supplier of the safety data sheet

SwanTek

Mintsfeet Road South, Kendal, LA9 6ND, UK

Tel: +44 (0)1539 722247 Email: service@swantek.com Web: www.swantek.com

1.4 Emergency telephone number

As per section 1.3

Section 2: Hazards identification

2.1 Classification of the substance or mixture

Physical hazards: Aerosol Cat 3, H229 Pressurised container: May burst if heated

Health hazards: Acute Tox. 4 - H302, Skin Irrit. 2 - H315, Eye Irrit. 2 - H319, Carc. 2 - H351, STOT SE 2 - H371, STOT SE 3 - H336

Environmental hazards: Not Classified

2.2 Label elements

Hazard pictograms: CLP 07 Exclamation
CLP 08 Health
(none)
(none)



Signal word: Warning

Hazard statements: H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H351 Suspected of causing cancer.
H371 May cause damage to organs.
H336 May cause drowsiness or dizziness.
H229 Pressurised container: May burst if heated

Precautionary statements: P260 Do not breathe vapour/ spray.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301+P312 IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.
P302+P352 IF ON SKIN: Wash with plenty of water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313 IF exposed or concerned: Get medical advice/ attention.
P405 Store locked up.
The material and container must be disposed of as hazardous waste.
P211 - Do not spray on an open flame or other ignition source
P251 - Do not pierce or burn, even after use
P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F

Other label elements: Contains dichloromethane, methanol.

2.3 Other hazards

Section 3: Composition / information on ingredients

3.1 Substances

3.2 Mixtures

DICHLOROMETHANE: 60-100%
CAS number: 75-09-2
EC number: 200-838-9
REACH registration number: 01-2119480404-41-XXXX
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319
Carc. 2 - H351
STOT SE 3 - H336

METHANOL: 5-10%
CAS number: 67-56-1
EC number: 200-659-6
REACH registration number: 01-2119433307-44-xxxx
Flam. Liq. 2 - H225
Acute Tox. 3 - H301
Acute Tox. 3 - H311
Acute Tox. 3 - H331
STOT SE 1 - H370

1,2-EPOXYBUTANE: < 1%
CAS number: 106-88-7
EC number: 203-438-2
REACH registration number: 01-2119449161-46-XXXX
Flam. Liq. 2 - H225
Acute Tox. 4 - H302
Acute Tox. 4 - H312
Acute Tox. 4 - H332
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319
Carc. 2 - H351
STOT SE 3 - H335
Aquatic Chronic 3 - H412

The full text for all hazard statements is displayed in Section 16.

Section 4: First aid measures

4.1 Description of first aid measures

- General:** Move affected person to fresh air at once. If breathing stops, provide artificial respiration. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Keep the affected person warm and at rest. Get prompt medical attention. Adrenaline and similars sympathomimetic drugs should be avoided following exposure, as cardiac arrhythmia may result with possible subsequent cardiac arrest.
- Inhalation:** Move affected person to fresh air at once. If breathing stops, provide artificial respiration. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Keep affected person warm and at rest. Get medical attention immediately.
- Ingestion:** Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Do not induce vomiting. Place unconscious person on their side in the recovery position and ensure breathing can take place. Do not induce vomiting. Get medical attention immediately.
- Skin:** Remove affected person from source of contamination. Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if any discomfort continues.
- Eye:** Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes and get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

- General:** No additional symptoms or effects are anticipated.
- Inhalation:**
- Ingestion:**
- Skin:**

Eye:

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Section 5: Firefighting measures

5.1 Extinguishing media

Extinguish with foam, carbon dioxide, dry powder or water fog. Do not use water jet as an extinguisher, as this will spread the fire.

5.2 Special hazards arising from the substance or mixture

Fire or high temperatures create: Toxic gases/vapours/fumes of: Hydrogen chloride (HCl). Phosgene (COCl₂). Fire exposed containers present risk of rupture and flying debris.

5.3 Advice for firefighters

Control run-off water by containing and keeping it out of sewers and watercourses. Cool containers exposed to flames with water until well after the fire is out. Stay away from ends of tanks. If risk of water pollution occurs, notify appropriate authorities. Thermal decomposition or combustion products may include the following substances: Toxic and corrosive gases or vapours. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Avoid inhalation of vapours and contact with skin and eyes. Use respiratory protection if vapours are released.

6.2 Environmental precautions

Do not discharge into drains or watercourses or onto the ground. Inform the relevant authorities if this occurs.

6.3 Methods and material for containment and cleaning up

Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Provide adequate ventilation. No smoking, sparks, flames or other sources of ignition near spillage. Contain spillage with sand, earth or other suitable noncombustible material. Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely. Do not allow to enter drains, sewers or watercourses.

6.4 Reference to other sections

For personal protection, see Section 8. For waste disposal, see Section 13.

Section 7: Handling and storage

7.1 Precautions for safe handling

Keep away from heat, sparks and open flame. Avoid spilling. Avoid contact with skin and eyes. Provide adequate ventilation. Avoid inhalation of vapours. Use approved respirator if air contamination is above an acceptable level. Do not use in confined spaces without adequate ventilation and/or respirator. Mechanical ventilation or local exhaust ventilation may be required. Vapours are heavier than air, and can cause suffocation by reducing oxygen available for breathing.

7.2 Conditions for safe storage, including any incompatibilities

May attack some plastics, rubber and coatings. Store in tightly-closed, original container. Keep container dry. Store in a cool and well-ventilated place. Store away from the following materials: Aluminium and its alloys. Acids. Protect from light. Storage class: Toxic storage.

7.3 Specific end use(s)

Storage tanks must be positioned within a bunded area. The information contained within this Safety Data Sheet is given as a guide to the precautions required to maintain a safe work environment.

Section 8: Exposure controls / personal protection

8.1 Control parameters

Occupational exposure limits

DICHLOROMETHANE

Long-term exposure limit (8-hour TWA): WEL 100 ppm, 353 mg/m³

Short-term exposure limit (15-minute): WEL 200 ppm, 706 mg/m³
Sk

METHANOL

Long-term exposure limit (8-hour TWA): WEL 200 ppm 266 mg/m³

Short-term exposure limit (15-minute): WEL 250 ppm 333 mg/m³

Sk

WEL = Workplace Exposure Limit

Sk = Can be absorbed through the skin.

DICHLOROMETHANE (CAS: 75-09-2)

DNEL

Industry - Inhalation; Long term : 353 mg/m³

Industry - Dermal; Long term : 4750 mg/kg/day

Industry - Inhalation; Short term : 706 mg/m³

Consumer - Inhalation; Long term : 88.3 mg/m³

Consumer - Oral; Short term : 0.06 mg/kg/day

Consumer - Inhalation; Short term : 353 mg/m³

Consumer - Dermal; Short term : 2395 mg/kg/day

PNEC

- Fresh water; 0.54 mg/l

- marine water; 0.194 mg/l

- Sediment (Freshwater); 4.47 mg/kg

- Sediment (Marinewater); 1.61 mg/kg

- STP; 26 mg/l

- Soil; 0.583 mg/kg

- Intermittent release; 0.27 mg/l

METHANOL (CAS: 67-56-1)

DNEL

Industry - Dermal; Short term systemic effects: 40 mg/kg/day

Industry - Dermal; Long term systemic effects: 40 mg/kg/day

Industry - Inhalation; Short term systemic effects: 260 mg/m³

Industry - Inhalation; Short term local effects: 260 mg/m³

Industry - Inhalation; Long term systemic effects: 260 mg/m³

Industry - Inhalation; Long term local effects: 260 mg/m³

Consumer - Oral; Short term systemic effects: 8 mg/kg/day

Consumer - Dermal; Short term systemic effects: 8 mg/kg/day

Consumer - Inhalation; Short term systemic effects: 50 mg/m³

PNEC

- Fresh water; 154 mg/l

- marine water; 15.4 mg/l

- Soil; 23.5 mg/kg

- STP; 100 mg/l

8.2 Exposure controls

Appropriate engineering controls: Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures.

Eye/face protection: Wear chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection: It is recommended that chemical-resistant, impervious gloves are worn. To protect hands from chemicals, gloves should comply with European Standard EN374.

Other skin and body protection: Use engineering controls to reduce air contamination to permissible exposure level.

Provide eyewash station and safety shower. Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapour contact.

Hygiene measures: Use engineering controls to reduce air contamination to permissible exposure level. Provide eyewash station and safety shower. Wash all splashes from the skin immediately.

Respiratory protection: Wear self-contained breathing apparatus. Wear a supplied-air respirator. Respiratory protection

must be used if the airborne contamination exceeds the recommended occupational exposure limit.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Note: This information represents typical data and is not a specification.

Appearance	Liquid
Colour	Colourless
Odour	Sweetish, ether
Odour threshold	200 ppm
Melting point	-95°C
Initial boiling point and range	38 - 40°C
Flash point	Not applicable
Upper/lower flammability or explosive limits	Lower flammable/explosive limit: 6.6 Upper flammable/explosive limit: 36.5
Vapour density	2.93
Relative density	1.277 - 1.317 @ 20°C
Solubility(ies)	1.3g / 100g water @ 25°C

9.2 Other information

Section 10: Stability and reactivity

10.1 Reactivity

10.2 Chemical stability

Avoid the following conditions: Heat, sparks, flames.

10.3 Possibility of hazardous reactions

10.4 Conditions to avoid

Avoid exposure to high temperatures or direct sunlight. Heating may generate the following products: Toxic gases or vapours. Contact with some metals may result in the release of hydrogen gas. Forms a detonatable mixture with nitric acid. May react with some amines (polyurethane catalysts).

10.5 Incompatible materials

Materials to avoid: aluminium, zinc, nitric acid

10.6 Hazardous decomposition products

Thermal decomposition or combustion products may include the following substances: Toxic gases/vapours/fumes of: Hydrogen chloride (HCl). Phosgene (COCl₂).

Section 11: Toxicological information

11.1 Information on toxicological effects

Other health effects: Carcinogen Category 3.

Acute toxicity - oral: ATE oral (mg/kg): 1,428.57

Acute toxicity - dermal: ATE dermal (mg/kg): 4,285.71

Acute toxicity - inhalation: ATE inhalation (vapours mg/l): 1,831.43

General information: Known or suspected carcinogen for humans.

Inhalation: Harmful by inhalation. Gas or vapour in high concentrations may irritate the respiratory system. Vapours in high concentrations are anaesthetic. Symptoms following overexposure may include the following: Headache. Fatigue. Dizziness. Central nervous system depression. Very high concentrations may result in a loss of consciousness. Very high exposures may cause abnormal heart rhythm and prove suddenly fatal. Methylene chloride is converted to carbon monoxide in the body, which reduces the oxygen carrying capacity of the blood and a raised carboxyhaemoglobin concentration in the blood.

Ingestion: Harmful if swallowed. Adverse effects similar to inhalation effects may occur. May cause blindness from swallowing amounts as low as 10ml. Lethal dose for man is approximately 150ml. The onset of effects may be delayed for several hours.

Skin contact: Prolonged or repeated exposure may cause severe irritation. Product has a defatting effect on skin. May cause allergic contact eczema.

Eye contact: Irritation of eyes and mucous membranes. May cause temporary eye irritation.

Acute and chronic health hazards: Gas or vapour is harmful on prolonged exposure or in high concentrations. Toxic through skin absorption (percutaneous). Narcotic effect. A single exposure may cause the following adverse effects: Central nervous system depression. Prolonged or repeated exposure may cause severe irritation. Acute eczematous dermatitis, contact type erythema, oedema, papules, vesicles, bullae, crusts, desquamation. Liver and/or kidney damage. Unconsciousness. Death.
Route of exposure: Inhalation. Skin absorption. Ingestion. Skin and/or eye contact.
Target organs: Central nervous system. Eyes. Respiratory system, lungs. Skin. Heart & cardiovascular system. Kidneys. Liver.
Medical symptoms: Dilated pupils. Severe skin irritation. Nausea, vomiting. Central nervous system depression. Drowsiness, dizziness, disorientation, vertigo. Hypotension (low blood pressure). Unconsciousness, possibly death.
Medical considerations Skin disorders and allergies. Liver and/or kidney damage. Convulsions. Central nervous system depression. History of smoking.

Toxicological information on ingredients:

DICHLOROMETHANE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 2,000.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 2,000.0

Species Rat

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 86.0

Species Rat

ATE inhalation (vapours mg/l) 86.0

Skin corrosion/irritation

Animal data Irritating.

Serious eye damage/irritation

Serious eye damage/irritation Moderately irritating.

Respiratory sensitisation

Respiratory sensitisation There is no evidence that the material can lead to respiratory hypersensitivity.

Skin sensitisation

Skin sensitisation Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation:: Positive.

Genotoxicity - in vivo Chromosome aberration: Negative.

Carcinogenicity

IARC carcinogenicity IARC Group 2B Possibly carcinogenic to humans.

General information: Known or suspected carcinogen for humans.

Inhalation Gas or vapour in high concentrations may irritate the respiratory system. Symptoms following overexposure may include the following: Headache. Fatigue. Nausea, vomiting. Irritating to respiratory system. Very high concentrations may result in a

loss of consciousness. Very high exposures may cause abnormal heart rhythm and prove suddenly fatal.

Ingestion: May cause nausea, headache, dizziness and intoxication.

Skin contact: Irritating to skin. Product has a defatting effect on skin. May cause allergic contact eczema. Prolonged contact may cause redness, irritation and dry skin.

Eye contact: Irritating to eyes.

Acute and chronic health hazards: Gas or vapour is harmful on prolonged exposure or in high concentrations. Toxic through skin absorption (percutaneous). Narcotic effect. A single exposure may cause the following adverse effects: Central nervous system depression. Prolonged or repeated exposure may cause severe irritation. Acute eczematous dermatitis, contact type erythema, oedema, papules, vesicles, bullae, crusts, desquamation. Liver and/or kidney damage. Unconsciousness. Death.

Route of exposure: Inhalation Skin absorption Ingestion. Skin and/or eye contact

Target organs: Central nervous system Eyes Respiratory system, lungs Skin Heart & cardiovascular system Kidneys Liver

Medical symptoms: Dilated pupils. Severe skin irritation. Nausea, vomiting. Central nervous system depression.

Drowsiness, dizziness, disorientation, vertigo. Hypotension (low blood pressure). Unconsciousness, possibly death.

Medical considerations: Skin disorders and allergies. Liver and/or kidney damage. Convulsions. Central nervous system depression. History of smoking.

METHANOL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 1,187.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 17,100.0

Species Rabbit

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 128.2

Species Rat

ATE inhalation (vapours mg/l) 128.2

Skin corrosion/irritation

Animal data Not irritating.

Serious eye damage/irritation

Serious eye damage/irritation Not irritating.

Respiratory sensitisation

Respiratory sensitisation Guinea pig: Not sensitising.

Skin sensitisation

Skin sensitisation - Guinea pig: Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro : Negative.

Genotoxicity - in vivo : Negative.

Carcinogenicity

Carcinogenicity Not available.

Reproductive toxicity

Reproductive toxicity - fertility - NOAEC 1.33 mg/l, , Rat Suspected reproductive toxicant based on limited evidence.

Specific target organ toxicity - single exposure

STOT - single exposure Not available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Not available.

Aspiration hazard

Aspiration hazard No information available.

General information: Prolonged and repeated contact with solvents over a long period may lead to permanent health problems.

Inhalation: Aspiration hazard if swallowed. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis. Overexposure may depress the central nervous system, causing dizziness and intoxication.

Ingestion: Harmful: may cause lung damage if swallowed. Pneumonia may be the result if vomited material containing solvents reaches the lungs.

Skin contact: Repeated exposure may cause skin dryness or cracking.

Eye contact: Irritation of eyes and mucous membranes.

Acute and chronic health hazards: Prolonged contact may cause dryness of the skin. Prolonged and repeated contact with solvents over a long period may lead to permanent health problems. Prolonged or repeated exposure to vapours in high concentrations may cause the following adverse effects: Central and/or peripheral nervous system damage. Brain damage.

Route of exposure: Ingestion. Inhalation

Target organs: Brain Respiratory system, lungs Mucous membranes

Medical symptoms: Skin irritation. Irritation of eyes and mucous membranes. Gas or vapour in high concentrations may irritate the respiratory system. Symptoms following overexposure may include the following: Headache. Fatigue.

Nausea, vomiting.

Medical considerations: Skin disorders and allergies. Convulsions. Central nervous system depression. Aspiration hazard if swallowed. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.

1,2-EPOXYBUTANE

Acute toxicity - oral

ATE oral (mg/kg) 500.0

Acute toxicity - dermal

ATE dermal (mg/kg) 1,100.0

Carcinogenicity

IARC carcinogenicity IARC Group 2B Possibly carcinogenic to humans

Section 12: Ecological information

12.1 Toxicity

Toxicity: May have harmful effects in the aquatic environment.

Acute aquatic toxicity

Acute toxicity - fish: LC₅₀, 96 hours: Golden Orfe/48hr 237 - 626 mg/l, mg/l, Fish

Acute toxicity - aquatic invertebrates: EC₅₀, 48 hours: 220 mg/l, Daphnia magna

Ecological information on ingredients:

DICHLOROMETHANE

Acute aquatic toxicity

Acute toxicity - fish: LC₅₀, 96 hours: 193 mg/l, Pimephales promelas (Fat-head Minnow)

Acute toxicity - aquatic invertebrates: 48 hours: 27 mg/l, Daphnia magna

Acute toxicity - aquatic plants: NOEC, 192 hours: 550 mg/l

METHANOL

Acute aquatic toxicity

Acute toxicity - fish: LC₅₀, 96 hours: 15400 mg/l, Lepomis macrochirus (Bluegill)

Acute toxicity - aquatic invertebrates: EC₅₀, 48 hours: > 10000 mg/l, Daphnia magna

Acute toxicity - aquatic plants: EC₅₀, 96 hours: ~ 22000 mg/l, Pseudokirchneriella subcapitata.

12.2 Persistence and degradability

The product is expected to be slowly biodegradable.

Ecological information on ingredients:

DICHLOROMETHANE: Readily biodegradable

METHANOL: Readily biodegradable

12.3 Bioaccumulative potential

The product has low potential for bioaccumulation.

Ecological information on ingredients:

DICHLOROMETHANE: The product has low potential for bioaccumulation.

METHANOL: The product has low potential for bioaccumulation. Partition coefficient: -0.70

12.4 Mobility in soil

Ecological information on ingredients:

DICHLOROMETHANE: Mobility No information available.

METHANOL: Mobility The product is miscible with water. May spread in water systems.

12.5 Results of PBT and vPvB assessment

Ecological information on ingredients:

DICHLOROMETHANE: Results of PBT and vPvB assessment: This substance is not classified as PBT or vPvB according to current EU criteria.

METHANOL: Results of PBT and vPvB assessment: No information available

12.6 Other adverse effects

Ecological information on ingredients:

DICHLOROMETHANE: Other adverse effects: None known.

METHANOL: Other adverse effects Do not discharge to the aquatic environment, drains or sewage treatment plants.

Section 13: Disposal considerations

13.1 Waste treatment methods

General information: Contaminated packages must be completely emptied before sending away for laundering and re-use.

Disposal methods: Do not allow runoff to sewer, waterway or ground. Confirm disposal procedures with environmental engineer and local regulations. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Empty containers must not be punctured or incinerated because of the risk of an explosion. Reuse or recycle products wherever possible. Dispose of waste via a licensed waste disposal contractor.

Waste class: EWC NUMBER: Allocation of a waste code number in accordance with the European Waste Catalogue, should be carried out in agreement with an EA authorised waste disposal company.

Section 14: Transport information

General

14.1 UN Number

UN No: 1950

14.2 UN proper shipping name

Aerosols

14.3 Transport hazard class(es)

2.2

14.4 Packing group

n/a

14.5 Environmental hazards

No additional information available.

14.6 Special precautions for user

No additional information available.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC code

No additional information available.

Section 15: Regulatory information

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

National regulations: The substances contained in the product are listed in the following international inventories: TSCA (US)

EU legislation: Regulation (EC) No 1907/2006 REACH. Regulation (EC) No 1272/2008 CLP.

Guidance: Workplace Exposure Limits EH40.

15.2 Chemical safety assessment

No chemical safety assessment has been carried out.

Inventories: US - TSCA: All the ingredients are listed or exempt.

Section 16: Other information

General information: Only trained personnel should use this material. Since empty containers retain product residue, follow label warnings, even after container is emptied. For further Health and Safety information contact: Health and Safety Officer. Labels should not be removed from containers until they have been cleaned and no product remains within.

Revision comments: Updated composition ingredients.

Hazard statements in full:

H225 Highly flammable liquid and vapour.

H301 Toxic if swallowed.

H302 Harmful if swallowed.

H311 Toxic in contact with skin.

H312 Harmful in contact with skin.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H331 Toxic if inhaled.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

H351 Suspected of causing cancer.

H370 Causes damage to organs .

H371 May cause damage to organs .

H412 Harmful to aquatic life with long lasting effects.

The responsibility to ensure safe working conditions within the workplace remains with the user. The information on this SDS is given as a guide to the precautions required to maintain a safe work environment. This product is for professional use only. Not for sale or resale to the general public. Use in applications other than those described above may give rise to risks not covered by the information on this SDS. The physical and chemical properties on this SDS are typical properties and are not a specification. Please report any errors.