

SAFETY DATA SHEET

ISSUED FEBRUARY, 2018 (VALID 5 YEARS FROM DATE OF ISSUE)

Chemtools ECS - Electronic Cleaning Solvent Aerosol

Section 1 - Identification of The Material and Supplier

| | |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Chemtools Pty Ltd Unit 2/14-16 Lee Holm Road St Marys NSW 2760 | Phone: 1300 738 250 (business hours) Fax: 02 9623 3670 www.chemtools.com.au |
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Chemical nature: Volatile liquid hydrocarbon dispensed as an aerosol

Product Name: Chemtools ECS - Electronic Cleaning Solvent Aerosol

Product Use: Cleaning solvent for electronics

Creation Date: February, 2018

Poisons Information Centre: Phone 13 1126 from anywhere in Australia

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: Xn, Harmful. Xi, Irritating. N, Dangerous to the environment. Hazardous according to the criteria of SWA.

Dangerous according to Australian Dangerous Goods (ADG) Code, IATA and IMDG/IMSBC criteria.

SUSMP Classification: None allocated.

ADG Classification: Class 2.1: Flammable gases.

UN Number: 1950, AEROSOLS



GHS Signal word: DANGER

Flammable aerosols Category 1
Gases under pressure - Compressed gas or Liquefied gas or Dissolved gas
Skin Irritation Category 2
Acute Toxicity Inhalation Category 4
Specific Target Organ Toxicity - Single Exposure Category 3
Carcinogenicity Category 1
Hazardous to aquatic environment Short term/Chronic Category 2

HAZARD STATEMENT:

H222: Extremely flammable aerosol
H280: Contains gas under pressure; may explode if heated.
AUH066: Repeated exposure may cause skin dryness or cracking.
H315: Causes skin irritation.
H332: Harmful if inhaled.
H336: May cause drowsiness or dizziness.
H350: May cause cancer.
H411: Toxic to aquatic life with long lasting effects.

PREVENTION

P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat, sparks, open flames and hot surfaces. - No smoking.

- P211: Do not spray on an open flame or other ignition source.
 P233: Keep container tightly closed.
 P240: Ground/bond container and receiving equipment.
 P241: Use explosion-proof electrical ventilating, lighting and other equipment.
 P242: Use only non-sparking tools.
 P243: Take precautionary measures against static discharge.
 P251: Pressurized container: Do not pierce or burn, even after use.
 P261: Avoid breathing fumes, mists, vapours or spray.
 P262: Do not get in eyes, on skin, or on clothing.
 P264: Wash contacted areas thoroughly after handling.
 P271: Use only outdoors or in a well ventilated area.
 P273: Avoid release to the environment.
 P280: Wear protective gloves, protective clothing and eye or face protection.

RESPONSE

- P312: Call a POISON CENTRE or doctor if you feel unwell.
 P362: Take off contaminated clothing and wash before reuse.
 P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P302+P352: IF ON SKIN: Wash with plenty of soap and water.
 P303+P361+P353: IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water.
 P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P308+P313: If exposed or concerned: Get medical advice.
 P332+P313: If skin irritation occurs: Get medical advice.
 P372: Explosion risk in case of fire.
 P381: Eliminate all ignition sources if safe to do so.
 P370+P378: In case of fire, use carbon dioxide, dry chemical, foam. Water fog or fine spray is the preferred medium for large fires.

STORAGE

- P403: Store in a well-ventilated place.
 P410+P412: Store below 30°C, protect from direct sunlight and do not expose to temperatures exceeding 50°C.

DISPOSAL

- P501: If they can not be recycled, dispose of contents to an approved waste disposal plant and containers to landfill (see Section 13 of this SDS).

Emergency Overview

Physical Description & Colour: Clear colourless liquid dispensed as an aerosol

Odour: Characteristic hydrocarbon solvent odour

Major Health Hazards: harmful if inhaled, skin irritant, repeated exposure may cause skin dryness or cracking, vapours may cause drowsiness and dizziness.

Section 3 - Composition/Information on Ingredients

| Ingredients | CAS No | Conc, % | TWA (mg/m ³) | STEL (mg/m ³) |
|---------------------------------------|------------|---------|--------------------------|---------------------------|
| Carbon dioxide | 124-38-9 | ~10 | 22500 | 54000 |
| Light, hydrotreated petroleum naphtha | 64742-49-0 | ~90 | not set | not set |
| Contains the following: | | | | |
| Hexane | 110-54-3 | <3 | 72 | not set |
| n-Pentane | 109-66-0 | <15 | 1770 | 2210 |

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

Inhalation: If symptoms of poisoning become evident, contact a Poisons Information Centre, or call a doctor at once. Remove source of contamination or move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure.

Skin Contact: Quickly and gently blot away excess liquid. Wash gently and thoroughly with warm water (use non-abrasive soap if necessary) for 10-20 minutes or until product is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts) and completely decontaminate them before reuse or discard. If irritation persists, repeat flushing and seek medical attention.

Eye Contact: Quickly and gently blot material from eyes. No effects expected. If irritation does occur, flush contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the product is removed. Obtain medical advice if irritation becomes painful or lasts more than a few minutes. Take special care if exposed person is wearing contact lenses.

Ingestion: If product is swallowed or gets in mouth, do NOT induce vomiting; wash mouth with water and give some water to drink. If symptoms develop, or if in doubt contact a Poisons Information Centre or a doctor.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. There is a moderate risk of an explosion from this product if commercial quantities are involved in a fire. Firefighters should take care and appropriate precautions.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: In case of fire, use carbon dioxide, dry chemical or foam. Water fog or fine spray is the preferred medium for large fires. Try to contain spills, minimise spillage entering drains or water courses.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade. There is a danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is full fire kit and breathing apparatus.

Flash point: -30°C (bulk liquid; propellant is not flammable)

Upper Flammability Limit: 8% (bulk liquid)

Lower Flammability Limit: 1% (bulk liquid)

Autoignition temperature: No data.

Flammability Class: Flammable Category 2 (GHS); Highly Flammable (AS1940).

Section 6 - Accidental Release Measures

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. Wear full protective clothing including eye/face protection. All skin areas should be covered. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include Nitrile, Teflon. Eye/face protective equipment should comprise, as a minimum, protective glasses and, preferably, goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned below (section 8). Otherwise, not normally necessary.

Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Take suitable precautions e.g. use of non-sparking equipment to avoid creating sparks or flames which may ignite the spilled material. Leaking gases may form an explosion hazard. Any equipment capable of building an electrostatic charge should be electrically grounded. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: Store in a cool (below 30°C), well ventilated area. Protect from direct sunlight. Make sure that surrounding electrical devices and switches are suitable. Check containers and valves periodically for leaks. If you keep more than 25kg of flammable gases, you are probably required to license the premises or notify your Dangerous Goods

authority. If you have any doubts, we suggest you contact your Dangerous Goods authority in order to clarify your obligations. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

| SWA Exposure Limits | TWA (mg/m ³) | STEL (mg/m ³) |
|---------------------|--------------------------|---------------------------|
| Carbon dioxide | 22500 | 54000 |
| Hexane | 72 | not set |
| n-Pentane | 1770 | 2210 |

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: This product should only be used in a well ventilated area. If natural ventilation is inadequate, use of a fan is suggested.

Eye Protection: Eye protection such as protective glasses or goggles is recommended when this product is being used.

Skin Protection: Prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: nitrile, Teflon.

Respirator: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above. Otherwise, not normally necessary.

Safety deluge showers should, if practical, be provided near to where this product is being handled commercially.

Section 9 - Physical and Chemical Properties:

| | |
|-------------------------------------------|--------------------------------------------------|
| Physical Description & colour: | Clear colourless liquid dispensed as an aerosol |
| Odour: | Characteristic hydrocarbon solvent odour |
| Boiling Point: | 48-65°C at 100kPa (bulk liquid) |
| Freezing/Melting Point: | No specific data. Liquid at normal temperatures. |
| Volatiles: | No data. |
| Vapour Pressure: | No data. |
| Vapour Density: | No data. |
| Specific Gravity: | 0.665 at 15°C (bulk liquid) |
| Water Solubility: | Insoluble. |
| pH: | No data. |
| Volatility: | No data. |
| Odour Threshold: | No data. |
| Evaporation Rate: | No data. |
| Coeff Oil/water Distribution: | No data |
| Viscosity: | 0.5 mm ² /s at 20°C (bulk liquid) |
| Autoignition temp: | No data. |

Section 10 - Stability and Reactivity

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid: Store below 30°C, protect from direct sunlight and do not expose to temperatures exceeding 50°C. Keep away from sources of sparks or ignition. Any electrical equipment in the area of this product should be flame proofed. Protect this product from light.

Incompatibilities: oxidising agents.

Fire Decomposition: Combustion forms carbon dioxide, and if incomplete, carbon monoxide and possibly smoke. Water is also formed. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation: This product will not undergo polymerisation reactions.

Section 11 - Toxicological Information

Local Effects:

Target Organs: There is no data to hand indicating any particular target organs.

Light, Hydrotreated Petroleum Naphtha is a SWA Class 2 Mutagen, likely to be mutagenic to humans.

Hexane is a SWA Class 3 Reproductive risk.

Classification of Hazardous Ingredients

| Ingredient | Risk Phrases |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| Light, Hydrotreated Petroleum Naphtha <ul style="list-style-type: none"> • Carcinogenicity – category 1B • Germ cell mutagenicity – category 1B • Aspiration hazard – category 1 | Conc>=10%: T; R45; R46; R65 |
| Hexane <ul style="list-style-type: none"> • Flammable liquid – category 2 • Reproductive toxicity – category 2 • Aspiration hazard – category 1 • Specific target organ toxicity (repeated exposure) – category 2 • Specific target organ toxicity (single exposure) – category 3 • Hazardous to the aquatic environment (chronic) – category 2 • Skin irritation – category 2 | No risk phrases at concentrations found in this product |
| N-pentane <ul style="list-style-type: none"> • Flammable liquid – category 2 • Aspiration hazard – category 1 • Specific target organ toxicity (single exposure) – category 3 • Hazardous to the aquatic environment (chronic) – category 2 | Conc>=10%: Xn; R65 |

Potential Health Effects

Inhalation:

Short Term Exposure: High vapour pressures may cause drowsiness and dizziness. In addition product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort. Intentional misuse by deliberately concentrating and inhaling contents of aerosol containers can be harmful or fatal.

Long Term Exposure: Vapours may cause drowsiness and dizziness.

Skin Contact:

Short Term Exposure: Major health effect from this product is misuse of the aerosol function. If sprayed continuously on skin or in eyes, it can cause frostbite.

Long Term Exposure: Repeated exposure may cause skin dryness or cracking.

Eye Contact:

Short Term Exposure: If sprayed directly in the eye, this product will irritate. If spraying is prolonged, it may cause damage through frostbite.

Long Term Exposure: No data for health effects associated with long term eye exposure.

Ingestion:

Short Term Exposure: Significant oral exposure is considered to be unlikely. Available data shows that this product is not harmful. However, this product may be irritating to mucous membranes but is unlikely to cause anything more than transient discomfort.

Long Term Exposure: No data for health effects associated with long term ingestion.

Carcinogen Status:

SWA: Light, Hydrotreated Petroleum Naphtha is classified by SWA as a Category 1b Carcinogen

See the SWA website for further details. A web address has not been provided as addresses frequently change.

NTP: No significant ingredient is classified as carcinogenic by NTP.

IARC: No significant ingredient is classified as carcinogenic by IARC.

Section 12 - Ecological Information

Toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment. Insufficient data to be sure of status.

Section 13 - Disposal Considerations

Disposal: Containers should be emptied as completely as practical before disposal. If possible, recycle product and containers either in-house or send to recycle company. If this is not practical, send to a commercial waste disposal site. Do not puncture or incinerate aerosol cans, even when empty.

Section 14 - Transport Information

Dangerous according to Australian Dangerous Goods (ADG) Code, IATA and IMDG/IMSBC criteria.

UN Number: 1950, AEROSOLS

Hazchem Code: 2YE

Special Provisions: 63, 190, 277, 327, 344, 381

Limited quantities: ADG 7 specifies a Limited Quantity value of 1000mL for this class of product.

Dangerous Goods Class: Class 2.1: Flammable gases.

Packing Group: Not set

Packing Instruction: P207, LP200

Class 2.1 Flammable gases shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 3 (Flammable Liquids) (where both flammable liquids and flammable gases are in bulk), 4.1 (Flammable Solids), 4.2 (Spontaneously Combustible Substances), 4.3 (Dangerous When Wet Substances), 5.1 (Oxidising Agents), 5.2 (Organic Peroxides), and 7 (Radioactive Substances). They may however be loaded in the same vehicle or packed in the same freight container with Classes 2.2 (Non-flammable Non-Toxic gases), 3 (Flammable liquids except where both flammable liquids and flammable gases are in bulk), 6 (Toxic Substances), 8 (Corrosive Substances) 9 (Miscellaneous dangerous goods), Foodstuffs and foodstuff empties.

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations.

Section 16 - Other Information

This SDS contains only safety-related information. For other data see product literature.

Acronyms:

| | |
|---------------------|---------------------------------------------------------------------------------------------------------------------|
| ADG Code | Australian Code for the Transport of Dangerous Goods by Road and Rail (7 th edition) |
| AICS | Australian Inventory of Chemical Substances |
| SWA | Safe Work Australia, formerly ASCC and NOHSC |
| CAS number | Chemical Abstracts Service Registry Number |
| Hazchem Code | Emergency action code of numbers and letters that provide information to emergency services especially firefighters |
| IARC | International Agency for Research on Cancer |
| NOS | Not otherwise specified |
| NTP | National Toxicology Program (USA) |
| SUSMP | Standard for the Uniform Scheduling of Medicines & Poisons |
| UN Number | United Nations Number |

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (Feb 2016)