Safety Data Sheet

Section 1: IDENTIFICATION

ZAP

Recommended Use: Chlorinated Hydrocarbon Solvent
Product Code: See Manufacturers Code

Company:	MICHALIS GROUP PTY LTD TRADING AS ALL-PRO CHEMICAL AND CLEANING SUPPLIES
Address:	3/7 AYRSHIRE CRESCENT, SANDGATE N.S.W 2304
Telephone Number:	(02) 4968 2000
Emergency Telephone Number:	Poisons Information Centre: Westmead NSW Australia 131126

Manufacturers Product Code:
ZAP (5L)
ZAP (25L)
ZAP (205L)
ZAP (1000L)

Section 2: HAZARDS

Hazardous according to criteria of NOHSC/ASCC.
Dangerous According to the Australian Code for the Transport of Dangerous Goods.
TOXIC SUBSTANCES

R68/20:	Harmful: possible risk of irreversible effects through inhalation.
R25:	Toxic if swallowed.
R45:	May cause cancer.
R36/38:	Irritating to eyes and skin.
S20:	When using, do not eat or drink.
S38:	In case of insufficient ventilation, wear suitable respiratory equipment.
S53:	Avoid exposure – obtain special instructions before use.
S24/25:	Avoid contact with skin and eyes.
S36/37:	Wear suitable protective clothing and gloves.

Section 3: COMPOSITION INFORMATION

Ingredients	CAS No	Conc,%	TWA (mg/m3)	STEL (mg/m3)
Trichloroethylene	79-01-6	<60%	54	216
Perchloroethylene	127-18-4	10 – 30%	340	1020
Petroleum distillate	secret	to 100	not set	not set

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

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 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 (using a nonabrasive 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. Immediately flush the contaminated eye(s) with lukewarm water, gently flowing for 20 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention immediately. Take special care if exposed person is wearing contact lenses.
Ingestion: If swallowed, do NOT induce vomiting; rinse mouth thoroughly with water and contact a Poisons Information Centre, or call a doctor at once. Give activated charcoal if instructed.

Section 5: FIREFIGHTING MEASURE

Fire and Explosion Hazards: This product is classified as a C1 combustible product. There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.
Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: Preferred extinguishing media are carbon dioxide, dry chemical, foam, water fog. Water fog or fine spray is the preferred medium for large fires. Ensure that no spillage enters drains or water courses.

Fire Fighting: When fighting fires involving significant quantities of this product, wear a splash suit complete with self contained breathing apparatus.

Section 6: ACCIDENTAL RELEASE MEASURES

In the event of a major spill, prevent spillage from entering drains or water courses. Wear full protective chemically resistant clothing including eye/face protection, gauntlets and self contained breathing apparatus. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include Nitrile, butyl rubber. Eye/face protective equipment should comprise as a minimum, protective 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. It should be fitted with a type MB cartridge, suitable for methyl bromide. See manufacturer's specifications for detailed specifications.
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. Because of the toxicity of this product, special personal care should be taken in any cleanup operation.
Sweep up and shovel or collect recoverable product into labeled 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 minimize 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 minimize risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Store in a cool, well ventilated area. Check containers periodically for leaks. Containers should be kept closed in order to minimize contamination. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. If you keep more than 10000kg or L of Dangerous Goods of Packaging Group III, you may be 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 CONTROL/ PERSONAL PROTECTION

The following Australian Standards will provide general advice regarding safety clothing and equipment:
Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Industrial Clothing: **AS2919**, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

ASCC Exposure Limits	**TWA (mg/m3)**	**STEL (mg/m3)**
Trichloroethylene	54	216
Perchloroethylene	340	1020

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 where there is ventilation that is adequate to keep exposure below the TWA levels. If necessary, use a fan.

Eye Protection: Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where 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 rubber. Glove selection can be made on the basis of the following resistance for Trichloroethylene based products.

Neoprene: good. Nitrile: good. Rubber: fair. Butyl: poor

Respirator: Where there is a risk of exposure to this product, we recommend that you use a respirator. It should be fitted with a type MB cartridge, suitable for methyl bromide.
Eyebaths or eyewash stations and safety deluge showers should be provided near to where this product is being used.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point/Melting Point: 40°C at 101kPa

Odour: SWEET PUNGENT ODOUR

Ignition Temperature: NO DATA

pH: N/A

Freezing point: NOT AVAILABLE

Vapour Density: NOT AVAILABLE

Specific Gravity: 1.07

Flashpoint (°C): >86 °C

Vapour Pressure: (pascals pr mm of Hg at 25°C): NOT AVAILABLE

Appearance: CLEAR SOLVENT

Upper and Lower Flammability limits (in air): NOT AVAILABLE

Solubility (g/l): INSOLUBLE

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: This product should be kept in a cool place, preferably below 30°C. Keep containers tightly closed. Keep away from heat, flames and sparks.

Incompatibilities: Strong oxidising agents, strong caustics and alkalis, chemically active metals, such as barium, lithium, sodium, magnesium, titanium and beryllium, liquid oxygen.

Fire Decomposition: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Hydrogen chloride gas, other compounds of chlorine and in some circumstances, phosgene which is a toxic gas. 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

Carcinogen Status:

ASCC:
Trichloroethylene is classified by ASCC as a Class 2 Carcinogen, likely to be carcinogenic to humans.
Perchloroethylene is classified by ASCC as a Class 3 Carcinogen, possibly carcinogenic to humans.
See the ASCC website for further details.
NTP:
Perchloroethylene is classified by NTP as reasonably anticipated to be carcinogenic to humans.
See the NTP website for further details.
IARC:
Trichloroethylene is classed 2a by IARC - probably carcinogenic to humans.
Perchloroethylene is classed 2a by IARC - probably carcinogenic to humans.
See the IARC website for further details.

Major Health Hazards: Toxic if swallowed, may cause cancer, irritating to eyes and skin, harmful if inhaled.
Potential Health Effects
Inhalation:
Short Term Exposure: Vapours can irritate the respiratory tract. Causes depression of the central nervous system with symptoms of visual disturbances and mental confusion, in coordination, headache, nausea, euphoria, and dizziness. Inhalation of high concentrations could cause unconsciousness, heart effects, liver effects, kidney effects, and death.

Long Term Exposure: No data for health effects associated with long term inhalation.
Skin Contact:
Short Term Exposure: Cause irritation, redness and pain. Can cause blistering. Continued skin contact has a de-fatting action and can produce rough, dry, red skin resulting in secondary infection.
Long Term Exposure: No data for health effects associated with long term skin exposure.
Eye Contact:
Short Term Exposure: Vapours may cause severe irritation with redness and pain. Splashes may cause eye damage.
Long Term Exposure: No data for health effects associated with long term eye exposure.
Ingestion:
Short Term Exposure: Causes irritation to gastrointestinal tract. May also cause effects similar to inhalation. May cause coughing, abdominal pain, diarrhoea, dizziness, pulmonary oedema, unconsciousness. Kidney failure can result in severe cases. Estimated fatal dose for trichloroethylene is 3-5 ml/kg
Long Term Exposure: No data for health effects associated with long term ingestion.
Chronic exposure: Chronic exposures may cause liver, kidney, central nervous system, and peripheral nervous system effects. Workers chronically exposed may exhibit central nervous system depression, intolerance to alcohol, and increased cardiac output. This material is linked to mutagenic effects in humans. This material is also a suspect carcinogen.
Trichloroethylene: Oral rat LD50: 5650 mg/kg; investigated as a tumorigen, mutagen, reproductive effector.
Trichloroethylene is a ASCC Class 3 Mutagen, possibly mutagenic to humans.
Tetrachloroethylene: Oral rat LD50: 2629 mg/kg; inhalation rat LC50: 4100 ppm/6h; investigated as a tumorigen, mutagen, reproductive effector.
Classification of Hazardous Ingredients
Ingredient Risk Phrases
Trichloroethylene Conc>=20%: T; R45; R68; R36/38
Perchloroethylene Conc>=1%: Xn; R40

Section 12: ECOLOGICAL INFORMATION

This product is biodegradable. It will not accumulate in the soil or water or cause long term problems.
Trichloroethylene: When released into the soil, this material may leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released to water, this material is expected to quickly evaporate. This material has an experimentally-determined bio-concentration factor (BCF) of less than 100. This material is not expected to significantly bio-accumulate. When released into the air, this material may be moderately degraded by reaction with photo chemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life between 1 and 10 days. The LC50/96-hour values for fish are between 10 and 100 mg/L. This material is expected to be slightly toxic to aquatic life.
Tetrachloroethylene: The LC50/96-hour values for fish are between 1 and 10 mg/L. The LC50/96-hour values for fish are between 10 and 100 mg/L. This material is expected to be toxic to aquatic life.

Section 13: DISPOSAL CONSIDERATIONS

Disposal: There are many pieces of legislation covering waste disposal and they differ in each state and territory, so each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. The Hierarchy of Controls seems to be common - the user should investigate: Reduce, Reuse, and Recycle and only if all else fails should disposal be considered. Note that properties of a product may change in use, so that the following suggestions may not always be appropriate. The following may help you in properly addressing this matter for this product. This product may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to separate the contamination in some way. Only if neither of these options is suitable, consider landfill.

Section 14: TRANSPORT INFORMATION

ADG Code: 2810, TOXIC LIQUID, ORGANIC, N.O.S.
Hazchem Code: 2X
Special Provisions: SP109, SP185, SP274
Dangerous Goods Class: Class 6.1, Dangerous Goods Class
Packaging Group: III
Packaging Method: 3.8.6, RT7, RT8
Class 9 Miscellaneous Dangerous Goods shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 5.1 (Oxidising Agents where the Miscellaneous Dangerous Goods are Fire Risk Substances), 5.2 (Organic Peroxides where the Miscellaneous Dangerous Goods are Fire Risk Substances).
They may however be loaded in the same vehicle or packed in the same freight container with Classes 2.1 (Flammable Gases), 2.2 (Non-Flammable, Non-Toxic Gases), 2.3 (Toxic Gases), 3 (Flammable liquids), 4.1 (Flammable Solids), 4.2 (Spontaneously Combustible Substances), 4.3 (Dangerous When Wet Substances), 5.1 (Oxidising Agents except where the Miscellaneous Dangerous Goods are Fire Risk Substances), 5.2 (Organic Peroxides except where the Miscellaneous Dangerous Goods are Fire Risk Substances), 6 (Toxic Substances), 7 (Radioactive Substances), 8 (Corrosive Substances), Foodstuffs and foodstuff empties.

Section 15: REGULATORY INFORMATION

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations. The following ingredients: Trichloroethylene, Perchloroethylene, are mentioned in the SUSDP

Section 16: OTHER INFORMATION

Prepared By: Ian Barkley
Position: Managing Director

Date of preparation: 1st July 2014

Legend to Abbreviations and Acronyms

< less than

> greater than

ADG Australian Dangerous Goods Code

AICS Australian Inventory of Chemical Substances

ASCC Australian Safety and Compensation Council

BCF bio-concentration factor

CAS Chemical Abstracts Service (Registry Number)

deg C ('C) degrees Celsius

G gram

g/l grams per litre

IARC The International Agency for Research on Cancer

Kg kilogram

kPa Kilo pascal – metric unit to measure pressure

LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.

LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals

Ltr (L) Litre

m3 cubic metre

mg milligram

mg/kg milligrams per kilogram

mg/m3 milligrams per cubic metre

mL Mililitres

ml/kg mililitres per kilogram

Mm millimetre

N/A Not Applicable

NICNAS National Industrial Chemicals Notification and Assessment Scheme

NTP National toxicology program

NOHSC National Occupational Health and Safety Commission

Ppm parts per million

ppm/6h parts per millionper 6 hours

STEL Short Term Exposure Limit

SUSDP Standard for the Uniform Scheduling of Drugs and Poisons

TWA Time Weighted Average

UN United Nations (number)