MATERIAL SAFETY DATA SHEET

SECTION 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: **Apparent MCPA 420 + Picloram 26 K Salt Herbicide**

Other Names: MCPA plus Picloram. Group I Herbicide.
Use: An agricultural herbicide for cereal and linseed crops.
Company: Apparent Pty Ltd.
Address: Suite G.08, 762 Toorak Road, Glen Iris VIC 3146
PO Box 3092, Cotham PO, Kew, Vic 3101
ACN/ABN: 143 724 136
Telephone Number: 03 9817 5536 **Fax Number:** 03 9817 7845
Emergency Contact : 0411 227 338
Email: wwardell@bigpond.net.au

SECTION 2 HAZARDS IDENTIFICATION

Classified as hazardous according to criteria of Safe Work Australia.
Not classified as a Dangerous Good according to the ADG Code

Risk Phrases:	R22	Harmful if swallowed.
	R36	Irritating to eyes
	R38	Irritating to the skin.
Safety Phrases:	S2	Keep out of reach of children.
	S13	Keep away from food, drink and other animal foodstuffs.
	S24/25	Avoid contact with skin and eyes.
	S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

CHEMICAL	*CAS NUMBER*	*PROPORTION*
MCPA as the potassium salt	5221-16-9	420 g/L
Picloram as the potassium salt	2545-60-0	26 g/L
Other ingredients (including water) determined not to be hazardous		Balance

SECTION 4 FIRST AID MEASURES

FIRST AID

Ingestion: If poisoning occurs, contact a Doctor or Poisons Information Centre. Phone 131 126. If swallowed do NOT induce vomiting. Wash mouth out with water. Give water or milk (if available) to drink.

Eye contact: Immediately hold eyes open and flood with clean water until chemical is removed. Ensure irrigation under eyelids by occasionally lifting them. Do not try to remove contact lenses unless trained. If irritation persists, seek medical attention.

Skin contact: Remove contaminated clothing. Wash skin with soap and water. If skin is irritated, seek medical advice. Launder contaminated clothing before re-use.

SECTION 4 FIRST AID MEASURES (Continued)

Inhalation: Remove to fresh air and observe until recovered. If irritation or symptoms persists more than about 30 minutes, seek medical advice.

Advice to Doctor: Due to the irritant properties of this product, swallowing may result in the ulceration of the mouth, stomach and gastrointestinal tract with subsequent stricture. Aspiration of vomotus may cause lung injury. It is suggested that endrotracheal/esophageal control if lavage is conducted. No specific antidote. Treat symptomatically taking account of the clinical condition of the patient.

SECTION 5 FIRE FIGHTING MEASURES

Extinguishing media: Non-combustible material. Extinguish fire using carbon dioxide, foam or dry agent. If waterspray is used, contain all runoff. Contain all runoff.

Hazards from combustion products: Non-combustible, however after evaporation of water, the residual material can emit toxic fumes. Will not polymerise.

Precautions for fire-fighters and special protective equipment: Isolate fire area. Evacuate downwind residents. Wear full protective clothing and self contained breathing apparatus. Do not breathe smoke or vapours generated.

SECTION 6 ACCIDENTIAL RELEASE MEASURES

Emergence procedures / Material and methods for containment and cleanup procedures:
Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. As a minimum, wear cotton overalls buttoned to the neck and wrist, a washable hat, elbow-length PVC gloves and face shield or goggles.

In the case of spillage, stop leak if safe to do so, and contain spill and absorb spilled material with absorbent material such as sand, clay or cat litter and dispose of waste as indicated in section 13 or according to the Australian Standard 2507 - Storage and Handling of Pesticides. Keep out animals and unprotected persons.

After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Thoroughly launder protective clothing before storage or re-use.

SECTION 7 HANDLING AND STORAGE

Precautions for Safe Handling: Harmful if swallowed. Attacks eyes. Will irritate the skin. Avoid contact with eyes and skin. If product in eyes, wash out immediately with water. Do not inhale spray mist. When preparing the spray and using the prepared spray, wear cotton overalls buttoned to the neck and wrist, a washable hat, elbow-length PVC gloves and face shield or goggles. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face shield or goggles and contaminated clothing.

Conditions for Safe Storage: This product is a Schedule 5 Poison (S5) and must be stored, transported and sold in accordance with the relevant Health Department regulations. Not classified as a Dangerous Good. Store in the closed, original container in a well ventilated area away from children, animals, food, feedstuffs, seed and fertilisers. Do not store for prolonged periods in direct sunlight.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines:
No exposure limits have been assigned by Safe Work Australia for this product.

Biological Limit Values:
No biological limit allocated.

Engineering controls:
Use in ventilated areas. Keep containers closed when not in use. No special engineering controls are required.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION (Continued)

Personal Protective equipment (PPE):
General: When preparing the spray and using the prepared spray, wear cotton overalls buttoned to the neck and wrist, a washable hat, elbow-length PVC gloves and face shield or goggles.

Personal Hygiene: Clean water should be available for washing in case of eye or skin contamination. Wash skin before eating, drinking or smoking. Shower at the end of the workday.

Hygiene Measures:
After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face shield or goggles and contaminated clothing.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Dark brown to black liquid.
Odour:	No data available.
Boiling point:	No data available.
Freezing point:	No data available.
Solubility in Water:	Soluble in water.
pH:	No data available.
Flammability:	Not flammable.
Specific Gravity:	1.2
Poisons Schedule:	This product is a schedule 5 (S5) poison.
Formulation:	Aqueous concentrate

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: Product is considered stable in ambient conditions for a period of at least 2 years after manufacture.

Conditions to avoid: Do not store for prolonged periods in direct sunlight.

Incompatible materials: Strong oxidizing agents, acids or bases.

Hazardous decomposition products: If heated until evaporation of water, the residual material can emit toxic and noxious fumes. Will not polymerise.

Hazardous reactions: Avoid contact of the concentrate with strong alkalis and alkaline materials such as lime. Polymerisation is unlikely.

SECTION 11 TOXICOLOGICAL INFORMATION

No specific data is available for this product as no toxicity tests have been conducted on this product. Information presented is our best judgement based on similar products and/or individual components. As with all products for which limited data is available, caution must be exercised through the use of protective equipment and handling procedures to minimise exposure.

Potential Health Effects:

ACUTE EFFECTS

Swallowed:	Harmful if swallowed. Acute Oral LD_{50} 1590 mg/kg (female rats). Harmful if swallowed. Swallowing may cause gastrointestinal irritation or ulceration.
Eye:	This product will cause severe irritation to the eyes. Possible eye damage if not washed off immediately.
Skin:	This product will irritate the skin and may be sensitising to sensitive individuals. Acute dermal LD_{50} > 1,000 -2,000 mg/kg (female rats).
Inhaled:	Inhalation of mists or sprays may produce respiratory irritation.

CHRONIC TOXICITY:
Mutagenic effects: MCPA is reportedly weakly mutagenic to bone marrow and ovarian cells of hamsters, but negative results were reported for other mutagenic tests. It was negative in a bacterial

SECTION 11 TOXICOLOGICAL INFORMATION (Continued)

test system (both with and without metabolic activation), negative in spot tests, and negative in host-mediated tests. It produced no detectable increase in chromosomal aberrations in house flies. Some irregularities occurred in gene transfer during cell division in brewer's yeast, although at levels which caused massive cell death. It appears that the compound poses little or no mutagenic risk.

The preponderance of data shows picloram to be non-mutagenic in in-vitro tests and in animal studies.

Carcinogenic effects: All available evidence on MCPA indicates that the compound does not cause cancer. Forestry and agricultural workers occupationally exposed to MCPA in Sweden did not show increased cancer incidence. Picloram did not cause cancer in animal laboratory studies.

Reproductive effects: A two-generation rat study at doses of MCPA up to 15 mg/kg/day affected reproductive function. Even smaller amounts of the compound were toxic to the foetuses. Dogs receiving relatively small amounts of MCPA (8 and 16 mg/kg) for 13 weeks showed adverse sperm and testes changes. It is unlikely that humans will experience these effects under normal exposure conditions. Picloram did not interfere with reproduction in animal studies.

Teratogenic effects: Picloram did not cause birth defects or other effects in the foetus even at doses which caused toxic effects in the mother. MCPA has caused birth defects in laboratory animals only at doses toxic to the mother. Teratogenic effects in humans are unlikely at expected exposure levels.

Organ toxicity: Target organs identified in animal studies include the liver, bladder, kidneys, spleen, testes and thymus. Farm worker exposure to MCPA has resulted in reversible anaemia, muscular weakness, digestive problems, and slight liver damage.

Fate in humans and animals: MCPA is rapidly absorbed and eliminated from mammalian systems. Rats eliminated nearly all of a single oral dose within 24 hours, mostly though urine with little or no metabolism. In another rat study, three quarters of the dose was eliminated within 2 days. All was gone by 8 days. Humans excreted about half of a 5 mg dose in the urine within a few days.

SECTION 12 ECOLOGICAL INFORMATION

Environmental Toxicology: No data is available on this product. Picloram is moderately toxic to aquatic organisms on an acute basis (LC_{50} or EC_{50} is between 1 and 10 mg/L in most sensitive species tested). Material is practically non-toxic to birds on an acute basis (LD_{50} is >2000 mg/kg). Picloram is nontoxic to bees and earthworms. Based on information for MCPA acid, MCPA is very toxic to aquatic organisms ($LC_{50}/EC_{50}/LC_{50}$ below 1 mg/L on aquatic plants, the most sensitive species). MCPA is moderately toxic to fish (96h LC_{50} for trout = 50 mg/L, Fathead Minnow 28 day NOEC = 15 mg/L) and aquatic invertebrates (48 hr LC_{50} for daphnia > 190 mg/L). MCPA is practically non-toxic to birds on a dietary basis (LC_{50} > 5000 ppm), however it has moderate acute toxicity – LD_{50} for quail = 270 mg/kg.
Bees: Non-toxic - MCPA acute oral and contact toxicity > 200 pg/bee. Earthworms: Acute LC_{50} = 325 mg/kg.
Environmental Fate: Picloram can stay active in soil for a moderately long time, depending on the type of soil, soil moisture and temperature. Picloram may exist at levels toxic to plants for more than 1 year after application at normal rates. The half-life of picloram in soil is reported to vary from 1 month under favorable environmental conditions to more than 4 years in arid regions. Picloram is degraded more rapidly under anaerobic than aerobic conditions and also degrades more rapidly at lower application rates. Breakdown caused by sunlight and microorganisms in the soil are the main ways in which picloram degrades in the environment. Picloram will dissipate more quickly in warm, wet weather. Alkaline conditions, fine textured clay soils, and a low density of plant roots can increase the persistence of picloram.

MCPA and its formulations are rapidly degraded by soil microorganisms and it has low persistence, with a reported field half-life of 14 days to 1 month, depending on soil moisture and soil organic matter. With less than 10% organic matter in soil, MCPA is degraded in 1 day and, with greater than 10% levels in soil, it takes 3 to 9 days to degrade. The half-life is 5 to 6 days in slightly acidic to slightly alkaline soils. MCPA readily leaches in most soils, but its mobility decreases with increasing organic matter. MCPA and its formulations show little affinity for soil. It is relatively stable to light breakdown, but can be rapidly broken down by microorganisms.

SECTION 13 DISPOSAL CONSIDERATIONS

Spills and Disposal: Persons involved in cleanup require adequate skin protection - see section 8. Keep material out of streams and sewers. Vacuum, shovel or pump waste into an approved drum. To decontaminate spill area, tools and equipment, wash with detergent and water and add the solution to the drums of wastes already collected and label contents. Dispose of drummed wastes, including decontamination solution in accordance with the requirements of Local or State Waste Management Authorities. If there is a need to dispose of the product, approach local authorities who hold periodic collections of unwanted chemicals (ChemClear®).

Disposal of empty containers: Store in the closed, original container in a cool well-ventilated area, away from children, animals, food, feedstuffs, seeds. Do not store for prolonged periods in direct sunlight. Store apart from fertilisers, insecticides and fungicides. Reseal immediately after use. Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank.
Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and deliver empty packaging for appropriate disposal to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots, in compliance with relevant Local, State or Territory government regulations. DO NOT burn empty containers or product.

SECTION 14 TRANSPORT INFORMATION

Road & Rail Transport: This product is exempt from classification as a Dangerous Good in packs less than 3,000 kg or litres under the Australian Code for the Transport of Dangerous Goods by Road and Rail. For bulk shipments this product is a class 9, UN 3082. (See special provision AU01).

Marine and Air Transport: This product is classified as a Marine Pollutant according to International Maritime Dangerous Goods (IMDG) Code and the International Air transport Association (IATA). If transporting by sea or air the following Dangerous Goods Classification applies:-
UN 3082, Class 9 (Miscellaneous Dangerous Goods), Packing Group III, Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains MCPA and Picloram). Hazchem code ●3Z. Hazard Identification Number (HIN) 90.

SECTION 15 REGULATORY INFORMATION

Under the Standard for Uniform Scheduling of Medicines and Poisons (SUSMP), this product is a schedule 5 poison.
This product is registered under the Agricultural and Veterinary Chemicals Code Act 1994. Product Registration No. 68016.
This product is classified as a Hazardous Substance under the criteria of Safe Work Australia. Xn harmful; Xi irritant.
This product is not classified as a Dangerous Good according to the ADG Code for packs less than 3000 litres (SP AU01) (7th Ed).
This product is classified as a Dangerous Good according to the International Maritime Dangerous Goods (IMDG) Code and the International Air transport Association (IATA).

Requirements concerning special training:
Check State or Territory regulations that require people who use pesticides in their job or business to have training in the application of the materials.

SECTION 16 OTHER INFORMATION

Issue Date: 1 March 2013. Valid for 5 years. (First issue).

Key to abbreviations and acronyms used in this MSDS:
ADG Code: Australian Dangerous Goods Code (for the transport of Dangerous Goods by Road and Rail).
Carcinogen: An agent which is responsible for the formation of a cancer.

SECTION 16 OTHER INFORMATION (Continued)

Genotoxic:	Capable of causing damage to genetic material, such as DNA.
HSIS:	Hazardous Substances Information System.
Lacrimation:	The production, secretion, and shedding of tears.
Lavage:	A general term referring to cleaning or rinsing.
Mutagen:	An agent capable of producing a mutation.
NOHSC:	National Occupational Health and Safety Commission.
Pneumonitis:	A general term that refers to inflammation of lung tissue.
PPE:	Personal protective equipment.
Teratogen:	An agent capable of causing abnormalities in a developing foetus.
TWA:	The Time Weighted Average airborne concentration over an eight-hour working day, for a five day working week over an entire working life.
Safe Work Australia:	Formally known as Australian Safety & Compensation Council (ASCC) which was formally known as the National Occupational Health & Safety Commission (NOHSC).

References

1. "Search Hazardous Substances". HSIS - Safe Work Australia website. (2013).
2. "Approved Criteria for Classifying Hazardous Substances" 3rd Ed. NOHSC Australia. [NOHSC:1008 (2004)]. October 2004.

This MSDS 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 should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

End MSDS