

Agritech Bioscience (Pty) Ltd. t/a Carabiner

Safety Data Sheet

MAFIA

Reg. No: L 9724 (Act 36 of 1947)

1) Identification of the substance or mixture and of the supplier:			
1.1 Product identifier:	Mafia		
1.2 Other means of identification:	Picloram 80 / Fluroxypyr 80 g/L ME Crop protection product, herbicide.		
Chemical name:	potassium 4-amino-3,5,6-trichloro-2-pyridinecarboxylate 4-amino-3,5-dichloro-6-fluoro-2-pyridyloxyacetic acid		
1.3 Recommended use of the chemical:	Herbicide		
Restrictions on use:	Agriculture: Herbicide		
UN Number:	3082		
1.4 Distributed by:	AGRITECH BIOSCIENCE (PTY) T/A CARABINER P O BOX 1224 ISANDO, 1600 TEL: 067384430 / 0724572828 www.carabiner.co.za		
1.5 Emergency Number:	POISON CENTRE (UNITAS HOSPITAL) 012 664 1100 TYGERBERG:021 931 6129 RED CROSS: 021 689 5227 RAPID SPILL RESPONSE 0800 775 3305 GRIFFON POISON CENTRE: 082 446 8946.		
2) Hazard(s) Identification:			
2.1 GHS Classification of the substance or mixture:	Globally Harmonised System, EU (GHS) and according to regulation EC No 1272/2008 [CLP] For classifications not written out in full in this section, the full text can be found in section 16.		
	Flammable Liquid Cat. 3 Skin irritation Cat. 2 Eye dam. Cat. 1 Repr Tox Cat. 1B Aquatic Acute Cat. 2 Aquatic Chronic Cat. 2		

2.2 GHS Label elements:	Globally Harmonised System, EU (GHS) and according to
	regulation EC No 1272/2008 [CLP]
	Biotograma
	Pictograms
	Signal word: Danger
	Hazard statement:
	H226 - Flammable liquid and vapour
	H315 - Causes skin irritation
	H318 - Causes serious eye damage H360 - May damage fertility or the unborn child
	H410 - Very toxic to aquatic life with long lasting effects
	Precautionary Statements:
	General:
	P101 - If medical advice is needed, have product container or label at hand. P102 - Keep out of reach of children.
	P103 - Read carefully and follow all instruction.
	Prevention:
	P203 - Obtain, read and follow all safety instructions before use.
	P210 - Keep away from heat, hot surfaces, sparks, open flames and other
	ignition sources. No smoking.
	P233 - Keep container tightly closed. P240 - Ground/bond container and receiving equipment.
	P241 - Use explosion-proof electrical/ventilating/lighting equipment.
	P242 - Use only non-sparking tools.
	P243 - Take action to prevent static discharges. P264 + P265 - Wash hands thoroughly after handling. Do not touch eyes.
	P273 - Avoid release to the environment.
	P280 - Wear protective gloves/protective clothing/eye protection/face protection.
	Response:
	P302+352 - IF ON SKIN - Wash with plenty of water and soap.
	P303+361+353 - IF ON SKIN (or hair) - Take off immediately all contaminated clothing. Rinse skin with water/shower.
	P305 + P354 + P338 - IF IN EYES - Immediately rinse with water for several
	minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P318 - If exposed or concerned, get medical advice.
	P321 - Specific treatment (see First Aid on this label). P332+317 - If skin irritation occurs - Get medical help.
	P362+364 - Take off contaminated clothing and wash it before reuse.
	P370+378 - In case of fire - Use suitable extinguish media to extinguish.
	P391 - Collect spillage. P405 - Store locked up.
	Storage:
	P403+233 - Store in a well-ventilated place. Keep container tightly closed.
	P403+P235 - Store in a well ventilated place. Keep cool.
	P405 - Store locked up.
	Disposal:
	P501 - Dispose of contents/container in accordance with local / regional /
	national / international regulations.
2.3 Other hazards:	No other hazards known
3) Composition/Information o	
3.1 Substances 3.2 Mixtures	Not applicable
Chemical nature:	Soluble Concentrate
	Preparation based on Picloram salt / Fluroxypyr methyl heptyl ester

Chemical name	2008 [CLP] Concentration of hazardous ingredient in composition		CAS No.	EC No.	Classification according to Globally Harmonised System, EU (GHS) and according to regulation EC No 1272/2008 [CLP]
Fluroxypyr (As methyl heptyl ester)	<u>></u> 10.9%		81406-37-3	279-752-9	Aquatic Acute 1 Aquatic Chronic 1
Picloram as (as TIPA salt)	<u>≥</u> 13.6%		1918-02-1	2017-636-1	Eye Irrit. 2
Monoethylene glycol	<u><</u> 5%		107-21-1	203-473-3	Acute Tox. 4.
Cyclohexanone	< 9.4%		108-94-1	203-631-1	Flam. Liq. 3 Acute Tox. 4
1-methyl-2-pyrrolidone	< 14%		872-50-4	212-828-1	Repr. 1B STOT SE 3 Skin Irrit. 2 Eye Irrit. 2
2-methylpropan-1-oll	<u>≤</u> 3.4		78-83-1	201-148-0	Flam. Liq. 3 STOT SE 3 STOT SE 3 Skin Irrit. 2 Eye Dam. 1
Other non-hazardous ingredients	To ba	lance	-	-	Not classified
For the full text of the H-State	ments n	nentioned in	this Section, see	e Section 16.	
4) First Aid Measures:					
.1 Description of first aid mea	asures	n			
Seneral Information:			atient from expo niting if patient is		r give fluids or or is having convulsions.
nhalation:	warm and		rested. If breath	ing is shallow o	ng around neck. Lie down and keep r has stopped ensure airway is clear sistance immediately.
Skin contact:	Remove co and water.		ontaminated clo Do not rub skin	thing and footwork the two the	arge amounts of water and soap. ear. Wash affected areas with soap ding first aid must wear gloves to avo ice if irritation occurs.
ho Ot rec		Flush eyes with plenty of clean, room temperature water for at least 15 minutes holding eyelids open. Remove contact lenses. Call a doctor for treatment advice. Obtain medical attention immediately if irritation persists. If symptoms (e.g., redness, irritation, pain etc) persist after 15 minutes of irrigation, refer the patient to an ophthalmologist for an eye examination.			
ngestion:	convulsion: Centre. Se		e anything by mouth to an unconscious person or to a person having is. Do not induce vomiting. For advice, contact the National Poisons sek medical assistance immediately. The decision of whether to miting or not must be made by an attending physician.		
		-	ecific antidote known. Treat symptomatically and supportively. Skin contac ggravate pre-existing dermatitis		
I.3 Most important symptoms and No available affects, both acute and delayed:		le data			
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i) Fire-Fighting Measures:					
5) Fire-Fighting Measures: 5.1 Extinguishing media Suitable extinguishing media:		water jet, o	due to contamina	ation risk.	y chemical. Do not use high volume
5) Fire-Fighting Measures: 5.1 Extinguishing media Suitable extinguishing media: 5.2 Special hazards arising fro substance or mixture:		water jet, o During a fi	due to contamina	ation risk. contain the origi	y chemical. Do not use high volume nal material as well as unidentified

	Picloram	TLV	10 mg/m3 (10 ppm)	ACGIH
8.1 Occupational exposure limits:	Component	Value type (Form of exposure)	Control parameters / permissible concentration	Basis
	1			1
8) Exposure Controls/ Personal Pro	otection:			
7.3 Specific end use(s)	No available data			
including any incompatibilities:	Store in compliance with local regulations. Store in original container tightly closed and in a locked, dry, cool, well-ventilated area away from foodstuffs, fertilisers, and seeds. Keep away from children or uninformed persons. Protect from excessive heat and cold. Do not store near food, drink, animal feedstuffs, pharmaceuticals, cosmetics, or fertilisers.			
7.2 Conditions for safe storage,	Store in complian	nce with local regulat	ions. Store in original contain	er tightly
	Avoid skin conta the skin area with approved handle commercial cont	ct. Remove any conta h plenty of water. Thi r when applied in a v ractor. BEWARE: Sp	aminated clothing immediatel s product must be under the vide dispersive manner; or us ray drift hazard. Apply this pr us damage to other desirable	y and wash control of an sed by a oduct
7.1 Precautions for safe handling:	hygiene. Do not	consume or store foo	tion of spray mist. Use good d in the wok area. Wash han smoking, or applying cosmet	ds and
7) Handling & Storage:				
6.4 Reference to other sections	Information rega	rding safe handling, s rding personal protec rding waste disposal,	tive equipment, see section 8	3.
	containers until t		is should be stored in labelle d of according to local regula prohibited.	
	waste containers absorb with furth the manufacture clean soil. If spill product cannot b disposal facility. with a suitable so	for later disposal. W er inert material. For r. Heavily contaminat does enter waterway e re-used and must h To decontaminate th plution (i.e., organic s	cuum and place into speciall ash area with water and dete large spills, barricade the are ed soil layers have to be dug vs contact the local authority. be disposed of in a chemical e spill area, tools and equipm olvent, detergent bleach, or o hould be disposed of togethe	ergent and out down to Spilled waste nent, wash caustic). If
containment and cleaning up Methods for cleaning up:			of unprotected personnel. Con non-combustible absorbent r	
6.3 Methods and materials for	(Police and Depa	artment of Water/Env	ironmental affairs) immediate	ely.
6.2 Environmental precautions:	waterways, drain	is, rivers, or lakes is u	s and groundwater. If contam unavoidable, warn the local a	uthorities
6.1 Personal precautions, protective equipment, and emergency procedures	protection see Se handling the proc	ection 8. Wash hands duct. When using, do	not breathe in spray or fume: s before breaks and immedia not eat, drink, or smoke. Wa Prevent skin contact.	tely after
6) Accidental Release Measures:	toxic and/or irrita	ting compounds.		
	nozzles. Contain Avoid inhaling ha upwind. Remove be used to cool u Do not scatter th	fire control agents for azardous vapours and container from fire a unaffected containers e material. Avoid poll	r later disposal. d fumes from burning materia rea if possible and without ris but must be contained for la	als. Keep sk. Water can ter disposal.
Further information:	her information: Remove spectators from surrounding area. Isolate the fire area and downwind. Use a recommended extinguishing agent for the type of s fire. Fight fire from maximum distance and use unmanned hose holder o			f surrounding

		PEL	15 mg/m3	OSHA
		Dessizable	F == = (== 0	PEL
		Respirable	5 mg/m3	OSHA PEL
	These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.			
8.2 Engineering controls:	Comply with oc regulations.	cupational safety,	environmental, fire and o	ther applicable
	particular work exposure. Ensu	site depend on hou are that control system mply with occupation	ventilation. The measure v this material is used an tems are professionally d onal safety, environment	nd on the extent of lesigned and
8.3 Exposure controls				
Respiratory protection:	use an approve	ed air-purifying resp	es and / or comfort levels birator. For emergency co ontained breathing appar	onditions: Use an
Eye protection:	The use of che	mically resistant sa	fety goggles is recomme	nded.
Hand protection:	Employee must with this substa		chemical-resistant gloves	s to prevent contact
Other protective equipment:	For brief contact: Clean body-covering. Emergency conditions: Protective clothing impervious to this material. The selection of specific items will depend on the operation. Consult supplier to confirm that the equipment is suitable			ic items will depend
	equipment to p	revent repeated or	iate protective (imperviou prolonged skin contact w	vith this product.
General Safety & Hygiene measures:	Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.			
9) Physical & Chemical Properties9.1 Information of basic physical and		00		
		63		
Appearance (physical state, colour etc)	Liquid, tan			
Odour:	Characteristic			
Odour threshold:	No data availat	ble		
pH:	7 – 8.5			
Melting point/freezing point: Initial boiling point and boiling range:	No data availat No data availat			
Flash point:	Insufficient data	a, classification not	possible. Expected to be	e > 93°C
Evaporation rate:	No data availat			
Flammability:	Flammable Liq			
Upper/lower flammability or explosive limits:	No data availat	-		
Vapour pressure:	No data availat			
Vapour density:	No data availat			
Relative density:	Approximately			
Solubility (ies): Partition coefficient: n-octanol/water	Soluble in wate No data availat			
Auto-ignition temperature:	No data availat			
Decomposition temperature:	No data availat			
Kinematic viscosity: 10) Stability & Reactivity	No data availat	ble		
10.1 Reactivity:	Stable under p	ormal use and stan	dard conditions. Stable f	or 21 months
Chemical stability:	When stored ap for 2 years from	opropriately this pro	oduct should show no sig acture. Avoid temperatu	nificant degradation

Possibility of hazardous reactions:	None known under normal conditions of storage and use.	
10.2 Conditions to avoid:	Avoid temperature extremes. Keep away from heat and protect from direct	
	sunlight.	
10.3 Incompatible materials:	Strong basic, acidic, or oxidising materials	
10.4 Hazardous decomposition products	No decomposition if stored and handled as indicated.	
11) Toxicological Information:		
11.1 Information on toxicological effect Acute oral toxicity [LD ₅₀ mg/kg]:	ct GHS: Not classified	
Acute onal toxicity [LD ₅₀ mg/kg].	GHS: Not classified GHS: Not classified	
mg/L]:	GIIS. NUL Classified	
Acute dermal toxicity [LD ₅₀ mg/kg]:	GHS: Not classified	
Aspiration hazard:	GHS: Not classified	
Respiratory irritation:	GHS: Not classified	
Skin irritation/corrosion:	GHS: Skin irritation Cat. 2	
Serious eye damage/irritation:	GHS: Eye dam. Cat. 1	
Respiratory/skin sensitisation:	GHS: Not classified	
Germ cell mutagenicity:	GHS: Not classified	
Carcinogenicity:	GHS: Not classified	
Teratogenicity	GHS: Not classified	
Reproductive toxicity:	GHS: Repr Tox Cat. 1B GHS: Not classified	
Specific organ toxicity: Narcotic effects:	GHS: Not classified GHS: Not classified	
Summary:	Causes skin irritation	
Cummary.	Causes serious eye damage	
	May damage fertility or the unborn child	
12) Ecological Information:		
12.1 Toxicity		
Toxicity to fish:	GHS: Aquatic Acute Cat. 2	
Toxicity for daphnia [EC ₅₀ mg/L] (48	GHS: Aquatic Chronic Cat. 2 GHS: Not classified	
h, flow-through):		
Toxicity to algae [ErC50 mg/L] (5 d, static):	GHS: Not classified	
Toxicity for birds [LD50 mg/kg]	No data available for the formulated product	
Toxicity for worms [LC50 mg/kg]	No data available for the formulated product	
Toxicity bees [LD50 µg/bee] (48 h)	No data available for the formulated product	
12.2 Persistence and degradability:	Information based on Picloram active: In mammals, following oral administration, picloram is rapidly excreted in an unchanged form.	
	On plant surfaces, photodecomposition occurs, possibly with cleavage of the pyridine ring. For reviews of picloram in the environment, see M. Mayes & G. R. Oliver, An Aquatic Hazard Assessment: Picloram, Aquatic Toxicology and Hazard Assessment: Eight Symposium, ASTM STP 891, in R. C. Bahner & D. J. Hasen, eds., American Society for Testing and Materials, Philadelphia, 1985, pp. 253–269, and Picloram: the Effects of its Use as a Herbicide on Environmental Quality, National Research Council of Canada, Ottawa, Canada, K1A 0R6, Publication No. NRCC 13684 of the Environmental Secretariat, 1974, 128 pp.	
	Quickly degraded by light, in clear water or on plant surfaces. Degraded moderately slowly to slowly by soil micro-organisms, typical field DT50 30–90 d. Rate of degradation in soil strongly proportional to application rate. Aqueous photodegradation DT50 <3 d.	
	Information based on Fluroxypyr active: In soil, fluroxypyr is rapidly degraded by micro-organisms in aerobic conditions to 4-amino-3,5-dichloro-6-fluoropyridin-2-ol, 4-amino-3,5-dichloro-6-fluoro-2- methoxypyridine, and CO2. DT50 in laboratory soil studies 5–9 d (c. 23 °C). Lysimeter and field studies demonstrate there is no evidence of any significant leaching.	
	In laboratory soils, the ester is rapidly converted to fluroxypyr in all soil types, with DT50 <7 d. In soil/water slurries, DT50 2–5 h (pH 6–7, 22–24 °C). Total DT50 for fluroxypyr-meptyl and fluroxypyr acid: soil, aerobic 23 d; aquatic, aerobic 14 d; aquatic, anaerobic 8 d; field dissipation 36.3 d.	

12.3 Bioaccumulative potential:	Picloram: Bio-concentration potential is low (BCF<100 or log Pow <3) Fluroxypyr-meptyl: Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Partition coefficient: n-octanol/water(log Pow): 5,04 Measured Bioconcentration factor (BCF): 26 <i>Oncorhynchus mykiss</i> (rainbow trout)Measured.
12.4 Mobility in soil	Picloram: Quickly degraded by light, in clear water or on plant surfaces. Degraded moderately slowly to slowly by soil micro-organisms, typical field DT50 30–90 d. Rate of degradation in soil strongly proportional to application rate. Aqueous photodegradation DT50 <3 d.
	Fluroxypyr-meptyl Soil Fluroxypyr methyl heptyl ester is almost completely degraded to fluroxypyr acid within one week in soil and water. Fluroxypyr acid is primarily degraded by microbial action. It has a half-life of about 3 to 6 days in soil under aerobic conditions depending on soil type and climatic conditions. In sterile water, fluroxypyr acid has a half-life of 185 to 265 days depending on the pH. Fluroxypyr is not expected to move into ground water. Residues typically remain in the top 10 centimetres of a soil profile. If used according to the label directions, the product will not be harmful to the environment.
12.5 Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
12.6 Other adverse effects	This substance / mixture contains no ingredients that are on the Montreal Protocol list of substances that deplete the ozone layer.
13) Disposal Considerations:	
13.1 Appropriate disposal methods:	In accordance with local and national regulations. This product and its container must be disposed of by a waste treatment facility authorised to destroy waste in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) and the relevant waste management regulations. Do not dispose into, or allow contact with, municipal sewerage systems or open water bodies. Do not bury.
Contaminated packaging:	Contaminated packaging should be emptied as far as possible. Triple or pressure rinse containers before disposal. If recycling, close container and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and take to a waste treatment facility authorised to destroy waste in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) and the relevant waste management regulations for disposal.
13.2 Special precautions during disposal:	Waste resulting from the use of this product cannot be reused or reprocessed. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers. Triple rinse containers, add rinsate to the spray tank, then offer the container for recycling/reconditioning, or puncture top, sides and bottom and take to a waste treatment facility authorised to destroy waste in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) and the relevant waste management regulations for disposal. If on-site container disposal is necessary, triple rinse empty container with water, add rinsate to the spray tank. Puncture top, sides and bottom, crush, and store appropriately until it can be taken to a waste treatment facility authorised to destroy waste in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) and the relevant waste management regulations for disposal. Empty containers and product should not be burnt.
14) Transportation Information:	1
Rail/road (RID/ADR) 14.1 UN Number 14.2 Proper shipping name 14.3 Transport hazard class(es) 14.4 Packing group 14.5 Environm. Hazardous Mark	3082 Environmentally hazardous substance, liquid, n.o.s. (fluroxypyr, picloram 9 III Environmentally hazardous

Sea (IMDG code):				
14.1 UN Number 14.2 Proper shipping name	3082			
14.3 Transport hazard class(es)	Environmentally hazardous substance, liquid, n.o.s. (fluroxypyr, picloram 9			
14.4 Packing group				
14.5 Marine pollutant	Environmentally hazardous			
Air (ICAO/IATA):				
14.1 UN Number	3082			
14.2 Proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (fluroxypyr, picloram			
14.3 Transport hazard class(es)	9			
14.4 Packing group				
14.5 Environm. Hazardous Mark 14.6 Special precautions for user	Environmentally hazardous See sections 6 to 8 of this Safety Data Sheet			
· · ·				
14.7 Transport in bulk according to	Not applicable.			
Annex II of MARPOL and the IBC Code				
15) Regulatory Information:				
15.1 Safety, health, and environme	ntal regulations/legislation specific for the substance or mixture.			
This safety data sheat complian with t	he requirements of Regulation (EC) No. 1007/2006			
This salety data sheet complies with	he requirements of Regulation (EC) No. 1907/2006.			
15.2 Chemical Safety Assessment				
For this product, a chemical safety as	sessment was not carried out.			
Approved handlers:	This product must be under the care of an approved handler at all times.			
	Records of use must be kept.			
Tracking:	Must be tracked.			
16) Other information:				
	ct, please refer to the approval conditions on the product label.			
Full text of H-Statements referred to	o under sections 2 and 3.			
H226 - Flammable liquid and vapour				
H315 - Causes skin irritation H318 - Causes serious eye damage				
H360 - May damage fertility or the un	born child			
H410 - Very toxic to aquatic life with lo				
Abbreviations and acronyms				
ACGIH American Conference of Gove				
	g the International Carriage of Dangerous Goods by Road			
CAS-Nr. Chemical Abstracts Service				
CLP Classification, Labelling and Pac				
EC-No. European community number ECx Effective concentration to x %				
EEC European Union regulation				
EU European Union				
ErC50 Concentration of the test substance which results in a 50 percent reduction in growth rate.				
GHS Globally Harmonized System				
IARC International Agency for Research on Cancer				
IATA International Air Transport Association				
IBC International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) ICAO International Civil Aviation Organization				
IMDG International Maritime Dangerous Goods				
LCx Lethal concentration to x %				
LDx Lethal dose to x %				
MARPOL: International Convention for the prevention of marine pollution from ships				
NTP U.S National Toxicology Program				
OSHA American Occupational Safety and Health Administration.				
PBT Persistence, Bioaccumulation and Toxic				
PEL Permissible Exposure Limit				
	vPvB Very persistent and very bioaccumulative PID Regulations concerning the International Carriage of Dangerous Goods by Rail			
RID Regulations concerning the International Carriage of Dangerous Goods by Rail SK 8hr TWA Skin 8-hour Time weighted average				
STEL Short term exposure limit	······································			
STOT SE Specific target organ toxicit	y single exposure.			
STOT RE Specific target organ toxicity repeated exposure.				
TLV Threshold Limit Value				
TWA Time weighted average				

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