

1. PRODUCT AND COMPANY IDENTIFICATION**SUPPLIER: DOW AGROSCIENCES (PTY) LTD**Private Bag X160,
Bryanston.
2021**EMERGENCY TELEPHONE NUMBERS****SPILLAGES:****Emergency telephone** (+27) 32 5330716 or
082 887 8079
Fax (+27) 32 5336134**POISONINGS:****National Poison Centre** 021-9386084 (office hours).
021-9316129 (after hours).
0800 333 444 (24 H)**UOFS Pharmacology/Toxicology information centre:**

082 491 0160

Trade name PLENUM 160 ME
HERBICIDE.**Use** Selective systemic herbicide for the
control of weeds as is indicated on
the label.**2. COMPOSITION / INFORMATION ON
INGREDIENTS****Picloram TIPA:** 2-pyridine- CAS # 001918-02-1 13.24%
carboxylic acid, 4-amino-
3,5,6-trichloro-, compound
with 1,1,1"-nitrilotris[2-propanol] (1:1)**Fluroxypyr MHE:** 1-methyl- CAS # 081406-37-3 10.64%
heptyl ester [(4-amino-3,5-dichloro-
6-fluoropyridin-2-yl)oxy]acetate**Inert Ingredients, Total, Including** 76.12%
Triisopropanolamine CAS # 000122-20-3
Dowanol DPM-GE CAS # 034590-94-8
Aromatic Solvent CAS # 064742-94-5
(Contains Naphthalene CAS # 000091-20-3)**UN no.** 3082**Risk Phrases:** R52/53**3. HAZARD IDENTIFICATION****Potential health effects:**

This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

Eye:

May cause severe eye irritation with corneal injury, which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Skin:

Prolonged contact may cause slight skin irritation with local redness. May cause drying and flaking of the skin. Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Ingestion:

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

Inhalation:

Prolonged exposure is not expected to cause adverse effects. Mist may cause irritation of upper respiratory tract (nose and throat) and lungs.

Systemic (Other target organ) Effects:

For picloram salt and Dowanol DPM-GE, observations in animals include liver and kidney effects. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

4. FIRST AID MEASURES**Eye:**

Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

Skin:

Wash skin with plenty of water.

Ingestion:

No emergency medical treatment necessary.

Inhalation:

Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Note to Physician:

No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Skin contact may aggravate preexisting dermatitis.

5. FIRE FIGHTING MEASURES

Flammable limits

LFL: Not determined

UFL: Not determined

Extinguishing media:

Foam, CO₂, Dry chemical

Fire and explosion hazards:

Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Toxic irritating gases may be formed under fire conditions.

Fire-fighting equipment:

Use positive-pressure, self-contained breathing apparatus and full protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Action to take for spills:

Absorb small spills with an absorbent such as sand and sweep up for disposal. Report large spills to Dow AgroSciences Emergency centre. Contain spills to keep out of sewers or any water sources.

7. HANDLING AND STORAGE

Precautions to be taken in handling and storage:

Keep out of reach of children. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapors and spray mist. Handle concentrate in ventilated area. Wash thoroughly with soap and water after handling and before eating, chewing gum, using tobacco, using the toilet or smoking. Keep away from food, feedstuffs, and water supplies.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

These precautions are suggested for conditions where a potential for exposure exists. Emergency conditions may require additional precautions.

Exposure guidelines:

Fluroxypyr 1-MHE:

Dow AgroSciences Industrial Hygiene Guide is 10 mg/M³.

Picloram TIPA Salt:

None established. For the acid ACGIH TLV is 10 mg/M³ and OSHA PEL is 15 mg/M³ total, 5 mg/M³ respirable.

Dowanol DPM-GE:

ACGIH TLV is 100 ppm TWA, 150 ppm STEL. OSHA PEL is 100 ppm TWA.

Petroleum solvent: None established. Supplier recommends a guideline of 100 ppm for the total product, which is a mixture of aromatic hydrocarbons.

Naphthalene:

ACGIH TLV is 10 ppm TWA, 15 ppm STEL, Skin, A4. OSHA PEL is 10 ppm TWA.

Triisopropanolamine:

Dow AgroSciences Industrial Hygiene Guide is 10 mg/M³.

A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

Engineering controls:

Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

Eye/Face protection:

Use chemical goggles. Eye wash fountain should be located in immediate work area.

Skin protection:

Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur.

Respiratory protection:

Atmospheric levels should be maintained below the exposure guidelines. If respiratory irritation is experienced, use a NIOSH approved air-purifying respirator.

Applicators and all other handlers:

Refer to the product label for personal protective clothing and equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Amber liquid

Odor: Amine odor

Solubility:

Emulsifiable in water

Density: 1.083 @ 20°C

Flash point: >100 °C (Closed cup)

10. STABILITY AND REACTIVITY

Stability: (conditions to avoid): Stable under normal handling and storage conditions.

Incompatibility: (specific materials to avoid):

None known.

Hazardous decomposition products:

Under fire conditions, hydrogen chloride and nitrogen oxides will be formed.

Hazardous polymerization:

Not known to occur.

11. TOXICOLOGICAL INFORMATION

Acute oral LD₅₀ :

>5000 mg/kg. in rats.

Acute dermal LD₅₀ :

> 5000 mg/kg in rats

Acute inhalation LC₅₀ :

>5.56 mg/L for 4 hours in rats.

Acute skin irritation:

May cause skin irritation.

Acute eye irritation:

May cause eye irritation. May cause corneal injury

Skin sensitization:

Did not cause allergic skin reactions when tested in guinea pigs.

Cancer information:

Contains naphthalene, which has caused cancer in some laboratory animals.

Teratology (Birth defects):

Birth defects are unlikely. Exposures having no adverse effects on the mother should have no effect on the fetus.

Reproductive effects:

In animal studies on the components tested, did not interfere with reproduction.

Mutagenicity:

For the components tested in-vitro and animal Mutagenicity studies were negative.

12. ECOLOGICAL INFORMATION

Movement & Partitioning:

Based largely or completely on information for fluroxypyr MHE, Dowanol DPM-GE, and triisopropanolamine.

Bioconcentration potential is low (BCF is <100 or Log Pow <3).

Based largely or completely on information for Picloram TIPA Salt.

Bioconcentration potential is moderate (BCF is between 100 and 3000 or Log Pow between 3 and 5).

Based largely or completely on information for the solvent.

Bioconcentration potential is high (BCF is >3000 or Log Pow between 5 and 7).

Degradation & Persistence:

Based largely or completely on information for fluroxypyr MHE and picloram TIPA Salt.

No relevant information found.

Based largely or completely on information for Dowanol DPM-GE.

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

ECOTOXICOLOGY:

The formulated product is toxic to aquatic organisms.

Based largely or completely on information for Dowanol DPM-GE.

Material is practically non-toxic to aquatic organisms on an acute basis (LC₅₀ or EC₅₀ is >100 mg/L in the most sensitive species tested).

Based largely or completely on information for picloram TIPA salt and triisopropanolamine.

Material is slightly toxic to aquatic organisms on an acute basis (LC₅₀ or EC₅₀ is between 10 and 100 mg/L in the most sensitive species tested).

Based largely or completely on information for the solvent.

The solvent is highly toxic to aquatic organisms on an acute basis (LC₅₀ or EC₅₀ is between 0.1 and 1 mg/L in the most sensitive species tested).

13. DISPOSAL CONSIDERATIONS

Disposal method:

Do not contaminate water, food, or feed by storage or disposal. Excess pesticide resulting from the use of this product may be disposed of on site according to label directions or at an approved waste disposal facility. Follow all local requirements for disposal.

14. TRANSPORT INFORMATION

UN NUMBER: 3082

ADR/IRD:

Shipping name: Environmentally hazardous substance, liquid, n.o.s. (Contains fluroxyppy, picloram, naphthalene)
Class: 9
Classification code: M6
Packaging group: III
Label: 9
Hazard ID no. 90

IMDG/IMO

Packaging group: III
Class: 9
Label: 9 Marine pollutant
Shipping name: Environmentally hazardous substance, liquid, n.o.s. (Contains fluroxyppy, picloram, naphthalene)

AIR/IATA

Shipping name: Environmentally hazardous substance, liquid, n.o.s. (Contains fluroxyppy, picloram, naphthalene)
Class: 9
Hazard Label: Miscellaneous
Packaging Group: III
Passenger Aircraft Y914 (max 30 Kg)
914 No limit
Cargo Aircraft 914 No limit

Tremcard number 90GM6-III

15. REGULATORY INFORMATION

Symbol : N
Indication of danger: Dangerous for the Environment
Risk phrases:
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Safety phrases:
S2 Keep out of reach children.
S 36/37 Wear suitable protective clothing and gloves.
S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

National legislation: In accordance with the South African National Road Traffic Act, 1996(Act 93 of 1996), the Fire Brigade Act, 1987(Act 99 of 1987) and the Occupational Health and Safety Act, 1993 (Act. No. 85 of 1993).

16. OTHER INFORMATION

Compiled by: Danie Fourie

REFERENCES

- Applicable own physical and chemical, toxicity and ecotoxicity research studies.
- *The Pesticide Manual*; Thirteenth Edition; Editor Clive Tomlin; Crop Protection Publications, 2003.
- *SABS 0265:1999*.
- *Dangerous Goods Regulations, IATA, 47th Edition, 1 January 2006*
- *ADR –Vol. 1, 2005*.
- *IMDG code, Vol. 2, 2006 Edition*.
- *ECB-ESIS (European chemical Substances Information System)*.

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in good faith and believed to be correct. This information applies to the PRODUCT AS SUCH. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons in receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produces formulations(s) containing this product, it is the recipients sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.

END MSDS.