	MATERIAL SAFETY DATA SHEET	Revised edition no: 3
		Date: 22/06/2016
	ADAMA 2,4-D Amine	

1. IDENTIFICATION OF THE SUBSTANCE/ PREPARATION AND THE COMPANY/ UNDERTAKING

Product name **:** Adama 2,4-D Amine

Use : Herbicide

Company identification: ADAMA South Africa (Pty) Ltd
21 Viben Street
Brankenfell
7560

Emergency telephone Number **:** + 27 82 807 7102
: + 27 21 982 1460

2. COMPOSITION/ INFORMATION ON INGREDIENTS

Common name : 2,4-D
Chemical name : (2,4-dichlorophenoxy) acetic acid (IUPAC)
Cas No. : 94-75-7
Chemical family : Phenoxy herbicide
Chemical formula : C8H6Cl2O3
Use : A selective herbicide for post-emergence control of broadleaved weeds
Formulation : 2,4-D (phenoxy compound): 480 g/l acid equivalent
(as dimethyl amine salt: 576 g/l) Soluble liquid

3. HAZARDS IDENTIFICATION

Toxicity Class : harmful. Chlorophenoxy herbicide are listed as Group 2B (limited evidence for carcinogenicity in humans) by the International Agency for Research on cancer.
The US EPA has given chlorophenoxy herbicides 2,4-D, MCPP and MCPA a class D classification (not classifiable as to human carcinogenicity. Resent lifetime feeding did not show carcinogenic effects and a recent WHO review of 2,4-D toxicology has concluded that 2,4-D is not a carcinogen.
WHO (a.i.) Group II

Likely routes of exposure : skin contact and ingestion.
Skin contact : may be mild irritant to skin.
Eye contact : Mild irritant to eyes causing redness, burning and blurred vision.
Ingestion : Harmful. In case of over-exposure to product and excessive amounts are swallowed, may cause nausea, vomiting, sweating, headaches, muscle soreness, abdominal pain and loss of coordination. May cause burns of mouth, throat and respiratory system.
Inhalation : Unlikely to cause harmful effects under normal conditions of handling and use. May be irritating and harmful to the respiratory system.

4. FIRST – AID MEASURES

Inhalation **:** Remove sources of contamination, or leave contaminated area to fresh air as rapidly as possible. Keep the affected person warm and at rest. Treat symptomatically and supportively. Administration of oxygen should be performed by a qualified personnel. Get medical attention immediately if effect persist.

Skin contact : Remove contaminated clothing, shoes and leather goods immediately. Gently wipe off excess chemical. Wash skin gently and thoroughly with non-abrasive soap and large amounts of water until no evidence of chemical remains (approximately 15 to 20 minutes). If irritation persists, seek medical advice immediately. Persons who become sensitized may require specialized medical management with anti-inflammatory agents.

Eye contact : immediately flush contaminated eyes with gently flowing clean water for 20 minutes, occasionally lifting upper and lower lids until no evidence of chemical remains (approximately 15 to 20 minutes). Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention if irritation persists.

Ingestion : If swallowed seek medical advice immediately and show the container, label, or this data sheet. Do Not induce vomiting. If the patient is alert and conscious, have the patient to rinse mouth thoroughly with water.

Note to Physician : The product contains a phenoxy herbicide. No specific antidote is available. Treat symptomatically and supportively when required. If large amounts have been ingested, perform gastric lavage and administer activated charcoal. Follow up with saline cathartic. Avoid oily laxatives.

5. FIRE – FIGHTING MEASURES

Flash point : >190 °C. Non-flammable. Non-combustible. Not explosive.
Extinguishing Media : For small fires, use foam, carbon dioxide, dry powder or halon extinguishing agents. For large fires, use foam or water-fog, avoid use of water jet. Contain run-off water with, for example, temporary barriers.

Fire Fighting : Remove spectators from surrounding area. Isolate the fire area and evacuate downwind. Use a recommended extinguishing agent for the type of surrounding fire.

Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Contain fire control agents for later disposal. Avoid inhaling hazardous vapours and fumes from burning materials. Keep upwind. Remove container from fire area if possible and without risk. Water can be used to cool unaffected containers but must be contained for later disposal. Dyke fire control water for later disposal. Do not scatter the material. Avoid pollution of waterways. Do not use high volume water jet due to contamination risk. Contain water used for fire fighting for later disposal. Avoid the accumulation of polluted run-off from the site.

Personal protective equipment: The product decomposes on heating, and toxic fumes may be produced, including hydrogen chloride and phosgene. Fire fighters and other that may be exposed should wear full protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal **:** Avoid contact with skin and eyes. Do not breath in spray or fumes. For personal protection see Section 8

Environmental **:** 2,4-D is toxic to fish. Do not allow drains or watercourses. Spillage or uncontrolled discharges into water courses (or public waters) to be reported immediately to the Police and to the Department of Water/Environmental Affairs. Considered a Marine Pollutant.

Occupational **:** Do not touch spilled material, stop leak if you can do it without risk. Keep out unprotected persons and animals.

For spills : Soak up with absorptive material such as damp earth or sand or other suitable non-combustible absorbent material. Place the material into a clean, dry container and cover for subsequent disposal. In situations where product comes in contact with water, contain contaminated water for later disposal. Prevent material from spreading by damming in with absorptive material. Do not flush spilled material into drains. Keep spectators away and upwind.

To decontaminate spill area, tools and equipment, wash with a suitable solution (i.e. organic solvent, detergent bleach or caustic). Add the solution to the drums already collected. Label drums with its content and dispose it in accordance with local regulations. Open burning and dumping of this material is prohibited. Do not get water inside containers.

7. HANDLING AND STORAGE

Handling : Avoid contact with eyes, skin and clothing. Avoid inhalation of spray and vapour. Use with adequate ventilation. Do not eat, drink or smoke while working. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Operators should change and wash clothing daily. Remove clothing immediately if the pesticide gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.

Storage : Keep under lock and key and out if reach of unauthorised persons, children and animals. Store in its original labelled container in isolated, dry, cool and well-ventilated area. Not to be stored next to feeds, food and water supplies. Local regulations should be complied with.

8. EXPOSURE CONTROL/ PERSONAL PROTECTION

It is essential to provide adequate ventilation. The measures appropriate for a particular work site depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire and other applicable regulations.

PERSONAL PROECTUIVE EQUIPMENT:

If engineering controls and work practices are not in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection.

Clothing : Employee must wear appropriate chemical-resistant gloves to prevent contact with this substance.

Gloves : Employee must wear appropriate chemical-resistant gloves to prevent contact with this substance.

Eye protection : The use of safety goggles is recommended.

Emergency : Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye fountain or appropriate alternative within the immediate work area for emergency use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Clear brownish liquid
Odour : Mild basic odour
Flash point : >190 °C
Solubility : Soluble in water
Density : 1.1 ± 0.05 g/ml
pH : 8 to 10
Explosive properties : Not explosive
Oxidizing properties : No oxidizing properties
Corrosive properties :Not corrosive

10. STABILITY AND REACTIVITY

Stability : Considered stable for a period of 2 years under recommended and normal warehouse and light conditions

Incompatibility : Incompatible with strong acids and alkaline agents

Hazardous decomposition/combustion products **:** The product decomposes on heating, and toxic fumes may be produced, including hydrogen chloride and phosgene.

11. TOXICOLOGICAL INFORMATION

Toxicity information
Rat oral LD50 [mg/kg} : > 750 mg/kg
Rat dermal LD50 [mg/kg] : > 1600 mg/kg
Rat inhalation LC50 [mg/kg] : > 1,79 mg/
Dermal irritation (rabbit) : slight irritant
Eyes Irritation (rabbits) : moderate irritant
Sensitization : may cause sensition.

Teratogenic effects : 2,4-D has a very limited ability to cause birth defects
Reproductive effects : Conflicting evidence about the reproductive effects in animals, most of the evidence suggests that 2,4-D causes reproductive effects at moderate doses in animals. This indicates that humans may be at risk though no direct evidence of reproductive problems associated with 2,4-D exposure exists.

Mutagenicity : 2,4-D has been very extensively tested and found to be non-mutagenic in most systems. However, significant increases of damage occurred in chromosomes in cultured human cell at low exposure levels. 2,4-D did not damage DNA in human lung cells. The evidence is too equivocal to draw any conclusions.

Carcinogenicity : Chlorophenoxy herbicides are listed as group 2B (limited evidence for carcinogenicity in humans) by the International Agency for Research on cancer (IARC).

12. ECOLOGICAL INFORMATION

Birds : Slightly to moderately toxic to birds.

LD50 **Japanese quail** : 668 mg/kg
Pheasants : 472 mg/kg

Fish : **Highly toxic to fish**

LC50 **Rainbow trout** : >100 mg/l
Cut-throat trout : 1,0 to 100 mg/l

Daphnia LC50 (21 d) : 235 mg/l
Bees LD50 (oral) : 104,5 ug/bee
Earthworms LD50 (7 day: 860 mg/kg

13. DISPOSAL CONSIDERATIONS

Disposal **:** Dispose of in a pesticide approval landfill, or in a chemical incinerator equipped with scrubbers. Dispose in a safe manner in accordance with local/ national regulations.

14. TRANSPORT INFORMATION

UN Number **: 3082**

Road Transport ADR
Class **: 9**
Packaging group **: III**
Shipping name **:** Environmentally hazardous substance, liquid, N.O.S (2,4-D 480 g/l)

15. REGULATORY INFORMATION

Symbol **:** Xn, N
Indication of danger **:** Harmful, Environmentally hazardous substance.
Risk Phrases
R 22 : Harmful if swallowed
R 36/37/38 : Irritating to eyes, respiratory system and skin
R 40 : Limited evidence of a carcinogenic effect
R 43 : May cause sensitization by skin contact.
R 51 : Toxic to aquatic organisms

Safety phrases :

S 1/2 : Keep locked up and out of the reach of children
S 24/25 : Avoid contact with skin and eyes
S 36/37/39 : Wear suitable protective clothing, gloves and eye/face protection
S 60 : This material and its container must be disposed of as hazardous waste
S 61 : Avoid release to the environment.

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16. OTHER INFORMATION

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