VITAX SAFETY INFORMATION SHEET

Date of Issue: October 2014
Supersedes MSDS: June 2009

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

1.1 Product Identifier: VITAX LAWNCLEAR^2 Ready to Use

1.2 Relevant uses of the substance or mixture and uses advised against:

Supplied for use as a retail lawn weedkiller

Uses advised against: The use of the substance should be limited to those specified on the label

1.3 Details of the supplier of the safety data sheet:

Vitax Limited,
Owen Street
Coalville
LE67 3DE

1.4 Emergency phone number Tel: 01530 510060 Fax: 01530 510299 Email: tech@vitax.co.uk

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (EU-GHS/CLP)

Not classified as hazardous

2.2 Label Elements

Signal word: n/a

Hazard statements: n/a

Supplemental Hazard Statements

EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary Statements n/a

2.3. Other hazards This product does not contain any PBT or vPvB substances.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixture

Chemical Name	CAS-No./ EINECS-No.	Annex Index or REACH number	Symbol(s) and phrases	Precautionary statements:	Concentration [%]
MCPA DMA salt	**CAS-No.** 2039-46-5 **EC-No.** 218-014-2		GHS07 Acute Tox., 4, H302, Harmful if swallowed Acute Tox., 4, H312 Acute Tox., 4, H332 Eye cor/irr, 1, H318 Causes serious eye damage Aquatic Acute, 1, H400 Aquatic Chronic, 1, H410	P273 P280 P301/312 P302/352 P305/351/338 P313	0.14 %
salts of 2,4-D	**CAS-No.** 2008-39-1 **EC-No.** 217-915-8	**Index** 607-040-00-3	Acute Tox., 4, H302 Eye Dam., 1, H318 Skin Sens., 1, H317 Aquatic Chronic, 2, H411		0.12 %
Clopyralid monoethanolamine salt	**CAS-No.** 57754-85-5 **EC-No.** 260-929-4		Not classified		0.03 %

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice: First Aid responders should pay attention to self-protection. If potential for exposure exists refer to Section 8 for specific personal protective equipment.

4.1.1 Inhalation Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration.

4.1.2 Skin & Eye exposure

Skin Contact: Take off contaminated clothing. Rinse skin immediately with plenty of water. If symptoms persist seek advice.

Eye Contact: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. . If symptoms persist seek advice.

Ingestion Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control centre or doctor. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Aside from the information found under Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.

4.3 Indication of immediate medical attention and special treatment needed

May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Chemical eye burns may require extended irrigation. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control centre or doctor, or going for treatment.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

Unsuitable extinguishing media Information not specified.

5.2 Special Hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Hydrogen chloride. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn. If exposed to fire from another source and water is evaporated, exposure to high temperatures may cause toxic fumes. Dense smoke is produced when product burns.

5.3. Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special Protective Equipment for Firefighters:

Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate area. Refer to Section 7, Handling, for additional precautionary measures. Only trained and properly protected personnel must be involved in clean-up operations. Keep upwind of spill. Ventilate area of leak or spill. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

6.2 Environmental Precautions Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

6.3 Methods and material for containment and cleaning up

Contain spilled material if possible.

Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labelled containers. Large spills: Contact Vitax Ltd for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

6.4 Reference to other sections See section 8 for personal protective equipment specification
See section 13 for information on disposal

7. HANDLING AND STORAGE

7.1 Precaution for safe handling Keep out of reach of children. Do not get in eyes. Do not swallow. Avoid breathing vapour or mist. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies

7.3 Specific end use(s) Refer to product label.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

Exposure Limits None established
RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

8.2 Exposure controls

Personal Protection

Eye/Face Protection: Use chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent.

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Hand protection: Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.
NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In misty atmospheres, use an approved particulate respirator. Use the following CE approved air-purifying respirator: Organic vapour cartridge with a particulate pre-filter, type AP2.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	
Physical State	Liquid.
Colour	Brown
Odour	mild phenolic
Odour Threshold	No test data available
pH	6.5 (@ 1 %) *CIPAC MT 75* 1% aqueous solution.
Melting Point	Not applicable
Freezing Point	No test data available
Boiling Point (760 mmHg)	No test data available.

Flash Point - Closed Cup *92/69/EEC A9* none below boiling point

Evaporation Rate (Butyl Acetate = 1) No test data available

Flammability (solid, gas)	Not applicable to liquids
Flammable Limits In Air Lower:	No test data available
Upper:	No test data available
Vapour Pressure	Not applicable
Vapour Density (air = 1)	Not applicable
Specific Gravity (H2O = 1)	1.001 24 °C/4 °C *EC Method A3*
Solubility in water (by weight)	Soluble
Autoignition Temperature	none below 400degC
Decomposition Temperature	No test data available
Dynamic Viscosity	No test data available
Kinematic Viscosity	No test data available
Explosive properties	No *EEC A14*
Oxidizing properties	No

9.2 Other Information

Liquid Density	1.001 g/cm^3 @ 24 °C

10. STABILITY AND REACTIVITY

10.1 Reactivity	No dangerous reaction known under conditions of normal use.
10.2 Chemical stability	Thermally stable at typical use temperatures.
10.3 Possibility of hazardous reactions	Polymerization will not occur.
10.4 Conditions to Avoid:	Active ingredient decomposes at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.
10.5 Incompatible Materials:	Avoid contact with: Strong acids. Strong bases. Strong oxidizers.
10.6 Hazardous decomposition products	Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Hydrogen chloride. Phosgene. Toxic gases are released during decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Ingestion	Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. As product: LD50, rat, male >2000 mg/kg
Aspiration hazard	Based on physical properties, not likely to be an aspiration hazard.
Dermal	Prolonged skin contact is unlikely to result in absorption of harmful amounts. As product: LD50, rabbit > 2,000 mg/kg
Inhalation	Mist may cause irritation of upper respiratory tract (nose and throat) and lungs. Prolonged excessive exposure to mist may cause adverse effects. As product: The LC50 has not been determined.
Eye damage/eye irritation	As product not classified as an eye irritant. Contains components that may cause severe irritation.
Skin corrosion/irritation	Prolonged contact is essentially non-irritating to skin.
Sensitization	
Skin	Based on extrapolation from similar products will not cause allergic skin reactions when tested in guinea pigs.
Respiratory	No relevant data found.
Repeated Dose Toxicity	For the active ingredient(s): In animals, effects have been reported on the following organs: Kidney. Liver. Blood. Bone marrow. Testes. Adrenal gland. Eye. Spleen. Thyroid.
Chronic Toxicity and Carcinogenicity	For similar active ingredient(s). 2-methyl-4-chlorophenoxyacetic acid (MCPA). Clopyralid. Did not cause cancer in laboratory animals. Various animal cancer tests have shown no reliably positive association between 2,4-D exposure and cancer. Epidemiology studies on herbicide use have been both positive and negative with the majority being negative.
Developmental Toxicity	For similar active ingredient(s). 2-methyl-4-chlorophenoxyacetic acid (MCPA). Has caused birth defects in laboratory animals only at doses toxic to the mother. Has been toxic to the foetus in laboratory animals at doses toxic to the mother. For similar active ingredient(s). Clopyralid caused birth defects in test animals, but only at greatly exaggerated doses that were severely toxic to the mothers. No birth defects were observed in animals given clopyralid at doses several times greater than those expected during normal exposure. For similar active ingredient(s). 2,4-Dichlorophenoxyacetic acid. Has been toxic to the foetus in laboratory animals at doses toxic to the mother. For similar active ingredient(s).

2,4-Dichlorophenoxyacetic acid. Did not cause birth defects in laboratory animals.

Reproductive Toxicity For similar active ingredient(s). 2,4-Dichlorophenoxyacetic acid. In laboratory animals, excessive doses toxic to the parent animals caused decreased weight and survival of offspring. For similar active ingredient(s). 2-methyl-4-chlorophenoxyacetic acid (MCPA). Clopyralid. In animal studies, did not interfere with reproduction.

Genetic Toxicology For the active ingredient(s): In vitro genetic toxicity studies were negative in some cases and positive in other cases. For the active ingredient(s): Animal genetic toxicity studies were inconclusive

Component Toxicology - MCPA DMA Salt

Inhalation Maximum attainable concentration. LC50, 4 h, Aerosol, rat, male and female > 4.72 mg/l

Component Toxicology - 2,4-D Dimethylamine Salt

Inhalation The LC50 has not been determined. For similar material(s): LC50, 4 h, Aerosol, rat > 1.79 mg/l

Component Toxicology - Clopyralid monoethanolamine salt

Inhalation As product: As product: LC50, 4 h, Mist, rat > 2.6 mg/l Maximum attainable concentration.

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12. ECOLOGICAL INFORMATION

Values are based on a concentrated mixture subject to dilution to 0.75% v/v

12.1 Ecotoxicity

By calculation the material is not harmful to aquatic organisms (LC50/EC50/IC50 greater than 100 mg/L in the most sensitive species). Material is not toxic to birds on an acute basis (LD50 > 2000 mg/kg).

Fish Acute & Prolonged Toxicity LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 h: > 100 mg/l

Aquatic Invertebrate Acute Toxicity EC50, Daphnia magna (Water flea), 48 h, mortality: >100 mg/l

Aquatic Plant Toxicity ErC50, Pseudokirchneriella subcapitata (green algae), biomass growth inhibition, 72 h: > 100 mg/l
EC50, Lemna minor (duckweed), 14 d: 11 mg/l

Toxicity to Above Ground Organisms oral LD50, Colinus virginianus (Bobwhite quail): >2000 mg/kg bodyweight.
oral LD50, Apis mellifera (bees): > 1200 micrograms/bee
contact LD50, Apis mellifera (bees): > 200 micrograms/bee

Toxicity to Soil Dwelling Organisms LC50, Eisenia fetida (earthworms), 14 d: > 1,000 mg/kg

12.2 Persistence and Degradability

Data for Component: **MCPA DMA Salt**

For similar active ingredient(s). 2-methyl-4-chlorophenoxyacetic acid (MCPA). Biodegradation under aerobic laboratory conditions is below detectable limits (BOD20 or BOD28/ThOD < 2.5%). Biodegradation rate may increase in soil and/or water with acclimation.

Data for Component: **salts of 2,4-D** For similar active ingredient(s). 2,4-Dichlorophenoxyacetic acid. Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Data for Component: **Clopyralid monoethanolamine salt**

For similar active ingredient(s). Clopyralid. Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

Data for Component: **4-chloro-o-cresol; 4-chloro-2-methyl phenol**

No relevant information found.

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
-	32 h	-

12.3 Bioaccumulative potential

Data for Component: **MCPA DMA Salt**

Bioaccumulation: For similar active ingredient(s). 2-methyl-4-chlorophenoxyacetic acid (MCPA). Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Data for Component: **salts of 2,4-D**

Bioaccumulation: For similar active ingredient(s). 2,4-Dichlorophenoxyacetic acid. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Data for Component: **Clopyralid monoethanolamine salt**

Bioaccumulation: For similar active ingredient(s). Clopyralid. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Data for Component: **4-chloro-o-cresol; 4-chloro-2-methyl phenol**

Bioaccumulation: Bioconcentration potential is low (BCF less than 100 or log Pow greater than 7).

12.4 Mobility in soil

Data for Component: **MCPA DMA Salt**

Mobility in soil: No relevant data found.

Data for Component: **salts of 2,4-D**

Mobility in soil: For similar active ingredient(s)., 2,4-Dichlorophenoxyacetic acid., Potential for mobility in soil is very high (Koc between 0 and 50).

Data for Component: **Clopyralid monoethanolamine salt**

Mobility in soil: For similar active ingredient(s)., Clopyralid., Potential for mobility in soil is very high (Koc between 0 and 50).

Data for Component: **4-chloro-o-cresol; 4-chloro-2-methyl phenol**

Mobility in soil: Potential for mobility in soil is high (Koc between 50 and 150).

Partition coefficient, soil organic carbon/water (Koc): 124 – 645

Henry's Law Constant (H): 1.1E-06 atm*m3/mole

12.5 Results of PBT and vPvB

Data for Component: **MCPA DMA Salt**

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Data for Component: **salts of 2,4-D** This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Data for Component: **Clopyralid monoethanolamine salt**

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Data for Component: **4-chloro-o-cresol; 4-chloro-2-methyl phenol**

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

12.6 Other adverse effects

Data for Component: **MCPA DMA Salt**

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

Data for Component: **salts of 2,4-D** This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

Data for Component: **Clopyralid monoethanolamine salt**

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

Data for Component: **4-chloro-o-cresol; 4-chloro-2-methyl phenol**

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods European waste catalogue:

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

13.2 Uncleaned packagings:

Recommendation: Disposal according to official regulations

14. TRANSPORT INFORMATION

14.1 UN number: Product is unclassified for transport

14.2 UN proper shipping name: Product is unclassified for transport

14.3 Transport hazard: Product is unclassified for transport

14.4 Packing group: Product is unclassified for transport

14.5 Environmental hazards: Product is unclassified for transport

14.6 Special precautions for user: Product is unclassified for transport

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code

Applicable for Maritime bulk transport only. Check with carrier.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture.

European Inventory of Existing Commercial Chemical Substances (EINECS)

The components of this product are on the EINECS inventory or are exempt from inventory requirements.

15.2 Chemical Safety Assessment For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

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16. OTHER INFORMATION

Hazard statement in the composition section

H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H332 Harmful if inhaled.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.

Reason for revision: MSDS re-formatted in-line with regulation 453/2010 all sections affected.

Legend:

Acute Tox. 4:	Acute toxicity category 4
Skin Irrit. 2:	Skin irritation category 2
Eye Irrit. 2:	Eye irritation category 2
RID:	Reglement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO:	International Civil Aviation Organization
ADR:	Accord europeen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG:	International Maritime Code for Dangerous Goods
lATA:	International Air Transport Association
GHS:	Globally Harmonized System of Classification and Labelling of Chemicals
EINECS:	European Inventory of Existing Commercial Chemical Substances
CAS:	Chemical Abstracts Service (division of the American Chemical Society)
PNEC:	Predicted No-Effect Concentration (REACH)
LC50:	Lethal concentration, 50 percent
LD50:	Lethal dose, 50 percent

MSDS information: This Material Safety data sheet is compiled using data submitted for raw materials and practical experience. This Safety Data Sheet is prepared in compliance with Directive 1999/45/EC, 1272/2008 and Annex I of the REACH regulation 453/2010. THE INFORMATION GIVEN HEREIN IS, TO THE BEST OF OUR KNOWLEDGE, CORRECT AND IS PRESENTED IN GOOD FAITH BUT NO WARRANTY, EXPRESSED OR IMPLIED IS GIVEN.