SAFETY DATA SHEET

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

1.1 Product identifiers SBK BRUSHWOOD KILLER / SBK TREE STUMP KILLER

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

Plant Protection Product

1.3 Details of the supplier of the safety data sheet

Vitax Limited, Owen Street, Coalville, Leicestershire LE67 3DE
Tel: +44 (0) 1530 510060 Fax: +44 (0) 1530 510299

1.4. Emergency telephone number Tel: +44 (0) 1530 510060 Mon - Fri 9am - 5pm (GMT)

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EU) 1272/2008:

Aquatic chronic Cat. 4

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]:

Hazard pictograms	None
Signal word:	None
Hazard statements	H413 May cause long lasting effects to aquatic life.
Precautionary statements	P102 Keep out of reach of children. P273 Avoid release to the environment. P501 Dispose of contents/container to a household waste recycling centre as hazardous waste except for empty containers which can be disposed of in the dustbin.
Supplementary labelling	EUH401 To avoid risks to human health and the environment, comply with the instructions for use. SP1 Do not contaminate water with the product or its container.

2.3 Other hazards no data available

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixture

REGULATION (EC) No 1272/2008

Component	CASRN / EC-No	Index-No./REACH Registration Number	Classification:	Concentration
Triclopyr Triethylamine Salt	57213-69-1/ 260-625-1		Flam. Liq. - 3 - H226 Eye Irrit. - 2 - H319 STOT SE - 3 - H335	6.4%
triethylamine	121-44-8/ 204-469-4	612-004-00-5/ 01-2119475467-26	Flam. Liq. - 2 - H225 Acute Tox. - 4 - H302 Acute Tox. - 3 - H331 Acute Tox. - 3 - H311 Skin Corr. - 1A - H314 STOT SE - 3 - H335	< 2.0%
Alkylphenol alkoxylate	69029-39-6/ Polymer		Eye Irrit. - 2 - H319 Aquatic Chronic - 2 - H411	< 0.5 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice:	First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Inhalation:	Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration.
Skin contact:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Get medical attention if symptoms are severe or persist.
Eye contact:	Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Get medical attention if symptoms are severe or persist.

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 Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician:	May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. 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.

SECTION 5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:	To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function.
Unsuitable extinguishing media:	no data available

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products:	Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.
Unusual Fire and Explosion Hazards:	This material will not burn until the water has evaporated. Residue can burn.

5.3 Advice for firefighters

Fire Fighting Procedures:	Keep people away. Isolate fire and deny unnecessary entry. Eliminate ignition sources. 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 firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant firefighting 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.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Eliminate all sources of ignition in vicinity of spill or released vapour to avoid fire or explosion. Vapour explosion hazard. Keep out of sewers. Refer to section 7, Handling, for additional precautionary measures. 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 materials for containment and cleaning up:

Contain spilled material if possible. Pump with explosion-proof equipment. If available, use foam to smother or supress. 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: References to other sections, if applicable, have been provided in the previous sub-sections.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling: Keep out of reach of children. Keep away from heat, sparks and flame. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapour or mist. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. No smoking, open flames or sources of ignition in handling and storage area. Electrically ground and bond all equipment. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION. Containers, even those that have been emptied, can contain vapours. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

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. Minimize sources of ignition, such as static build-up, heat, spark or flame.

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

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Triclopyr Triethylamine Salt	Dow IHG	TWA	2 mg/m^3
triethylamine	ACGIH	TWA	1 ppm, Absorbed via skin
	ACGIH	STEL	3 ppm Absorbed via skin
	2000/39/EC	TWA	8.4 mg/m^3 2 ppm, Absorbed via skin
	2000/39/EC	STEL	12.6 mg/m^3 3 ppm, Absorbed via skin
	GB EH40	TWA	8 mg/m^3 2 ppm, Absorbed via skin
	GB EH40	STEL	17 mg/m^3 4 ppm, Absorbed via skin
Alkylphenol alkoxylate	Dow IHG	TWA	2 mg/m^3

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 Engineering controls: 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.

Individual protection measures

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

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Neoprene.

	Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. 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.
Other protection:	When prolonged or frequently repeated contact could occur, 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.
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, use an approved respirator. Selection of air-purifying or positive pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. Use the following CE approved air-purifying respirator: Organic vapour cartridge with a particulate pre-filter, type AP2.
Environmental exposure controls	See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	
Physical state	Liquid.
Colour	Pale yellow
Odour	Not applicable
Odour Threshold	No test data available
pH	8.7 CIPAC MT 75 (1% aqueous suspension)
Melting point/range	Not applicable
Freezing point	No test data available
Boiling point (760 mmHg)	No test data available
Flash point closed cup	65.5 °C EC Method A9
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	No Flammability (contact with water)
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapour Pressure	Not applicable
Relative Vapour Density (air = 1)	Not applicable
Relative Density (water = 1)	1.049 at 22 °C / 4 °C EC Method A3
Water solubility	Soluble
Partition coefficient: noctanol/water	no data available
Auto-ignition temperature	400 °C 92/69/EEC A15
Decomposition temperature	No test data available
Dynamic Viscosity	2.34 mPa.s at 20 °C
Kinematic Viscosity	2.23 cSt at 20 °C
Explosive properties	Not explosive EEC A14
Oxidizing properties	No test data available

9.2 Other information

Liquid Density	1.020 g/cm^3 at 22 °C Pycnometer

NOTE: The physical data presented above are typical values and should not be construed as a specification.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity:	no data available
10.2 Chemical stability:	Thermally stable at recommended temperatures and pressures.
10.3 Possibility of hazardous reactions:	Polymerization will not occur.
10.4 Conditions to avoid:	Some components of this product can decompose at elevated temperatures.
10.5 Incompatible materials:	Avoid contact with: Strong acids. Strong oxidizers.
10.6 Hazardous decomposition products:	Decomposition products depend upon temperature, air supply and the presence of other materials.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

11.1 Information on toxicological effects

Acute toxicity	
Acute oral toxicity	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 (by calculation):	LD50, rat, >4000 mg/kg
Acute dermal toxicity	Prolonged skin contact is unlikely to result in absorption of harmful amounts.
As product:	The dermal LD50 has not been determined.
For similar material(s):	LD50, rabbit, male and female, > 5,000 mg/kg
Acute inhalation toxicity	Prolonged excessive exposure may cause adverse effects. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. In humans, symptoms may include: Headache.
As product:	The LC50 has not been determined.
Skin corrosion/irritation	Brief contact is essentially non-irritating to skin.
Serious eye damage/eye irritation	Does nt meet criteria for classification as an eye irritant.
Sensitization	Did not demonstrate the potential for contact allergy in mice.
For respiratory sensitization:	No relevant data found.
Specific Target Organ Systemic Toxicity (Single Exposure)	
	May cause respiratory irritation.
Specific Target Organ Systemic Toxicity (Repeated Exposure)	
For the active ingredient(s):	In animals, effects have been reported on the following organs: Kidney.
Carcinogenicity	
For similar active ingredient(s).	Triclopyr. Did not cause cancer in laboratory animals.
Teratogenicity	
For the active ingredient(s):	Has been toxic to the foetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.
Reproductive toxicity	
For similar active ingredient(s). Triclopyr.	In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.
Mutagenicity	
For the active ingredient(s):	In vitro genetic toxicity studies were negative.
For the minor component(s):	In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative in some cases and positive in other cases.
Aspiration Hazard	Based on physical properties, not likely to be an aspiration hazard.
COMPONENTS INFLUENCING TOXICOLOGY:	
Triclopyr Triethylamine Salt	
Acute inhalation toxicity	Maximum achievable concentration. LC50, rat, 4 Hour, dust/mist, > 2.6 mg/l No deaths occurred at this concentration.
triethylamine	
Acute inhalation toxicity	Vapour concentrations are attainable which could be hazardous on single exposure. Prolonged excessive exposure may cause serious adverse effects, even death. Vapour may cause irritation of the upper respiratory tract (nose and throat). In humans, symptoms may include: Headache. LC50, rat, 1 Hour, vapour, 14.4 mg/l

Alkylphenol alkoxylate	
Acute inhalation toxicity	At room temperature, exposure to vapour is minimal due to low volatility; vapour from heated material or mist may cause respiratory irritation and other effects. As product: The LC50 has not been determined.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

12.1 Toxicity

Acute toxicity to fish	Material is not harmful to aquatic organisms (LC50/EC50/IC50 between > 100 mg/L in the most sensitive species). By calculation LC50, *Oncorhynchus mykiss* (rainbow trout), semi-static test, 96 Hour, > 500 mg/l, OECD Test Guideline 203 or Equivalent
Acute toxicity to aquatic invertebrates	EC50, *Daphnia magna* (Water flea), 48 Hour, > 250 mg/l, OECD Test Guideline 202 or Equivalent
Acute toxicity to algae/aquatic plants	EbC50, *Pseudokirchneriella subcapitata* (green algae), 72 Hour, 112.5 mg/l, OECD Test Guideline 201 or Equivalent

12.2 Persistence and degradability

Triclopyr Triethylamine Salt	
Biodegradability:	For similar active ingredient(s). Triclopyr. Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.
triethylamine	
Biodegradability:	Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability). 10-day Window: Pass Biodegradation: 96 % Exposure time: 21 d Method: OECD Test Guideline 301A or Equivalent 10-day Window: Not applicable Biodegradation: 25 - 34 % Exposure time: 28 d Method: OECD Test Guideline 302C or Equivalent
Alkylphenol alkoxylate	
Biodegradability:	Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

12.3 Bioaccumulative potential

Triclopyr Triethylamine Salt	
Bioaccumulation:	For similar active ingredient(s). Bioconcentration potential is low (BCF <100 or Log Pow < 3).
triethylamine	
Bioaccumulation:	Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient n-octanol/water(log Pow):	1.45 Measured
Bioconcentration factor (BCF):	< 4.9 *Cyprinus carpio* (Carp) 42 d Measured
Alkylphenol alkoxylate	
Bioaccumulation:	No bioconcentration is expected because of the relatively high water solubility. May foam in water.

12.4 Mobility in soil

Triclopyr Triethylamine Salt	
For similar active ingredient(s).	Potential for mobility in soil is very high (Koc between 0 and 50).
triethylamine	Potential for mobility in soil is very high (Koc between 0 and 50). Partition coefficient (Koc): 11 - 146 Estimated.
Alkylphenol alkoxylate	No data available.

12.5 Results of PBT and vPvB assessment

Triclopyr Triethylamine 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).

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

12.6 Other adverse effects

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

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

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. The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

SECTION 14. TRANSPORT INFORMATION

Classification for ROAD and Rail transport (ADR/RID):

14.1 UN number	Not applicable
14.2 Proper shipping name	Not regulated for transport
14.3 Class	Not applicable
14.4 Packing group	Not applicable
14.5 Environmental hazards	Not considered environmentally hazardous based on available data.
14.6 Special precautions for user	No data available.

Classification for SEA transport (IMO-IMDG):

14.1 UN number	Not applicable
14.2 Proper shipping name	Not regulated for transport
14.3 Class	Not applicable
14.4 Packing group	Not applicable
14.5 Environmental hazards	Not considered as marine pollutant based on available data.
14.6 Special precautions for user	No data available.

14.7 Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code

Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

14.1 UN number	Not applicable
14.2 Proper shipping name	Not regulated for transport
14.3 Class	Not applicable
14.4 Packing group	Not applicable
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user	No data available.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15. REGULATORY INFORMATION

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

This product contains only components that have been either pre-registered, registered, are exempt from registration or are regarded as registered according to Regulation (EC) No. 1907/2006 (REACH).
The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer´s/user´s responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

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.

SECTION 16. OTHER INFORMATION

Reason for revision:

MSDS re-formatted in-line with regulation 453/2010 all sections affected.
Replaces MSDS dated 09/06/2009

Full text of H-Statements

H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H335 May cause respiratory irritation.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

Legend

2000/39/EC Europe.	Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
Absorbed via skin	Absorbed via skin
ACGIH USA.	ACGIH Threshold Limit Values (TLV)
Dow IHG	Dow Industrial Hygiene Guideline
GB EH40 UK.	EH40 WEL - Workplace Exposure Limits
STEL	Short-term exposure limit
TWA	8-hour, time-weighted average

Disclaimer

This (M)SDS should be studied carefully and appropriate expertise consulted as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.