SAFETY INFORMATION SHEET

Date of issue: February 2004
Revision date: January 2018

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

1.1 Product identifier WILTPRUF S600

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

Agricultural/horticultural spray adjuvant/antitranspirant

1.3 Details of the supplier of the safety data sheet

Vitax Limited
Owen Street
Coalville
LE67 3DE Tel: 01530 510060 Email: info@vitax.co.uk

1.4 Emergency Contact: Tel: 01530 510060 (Office Hours)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification CLP Classification (Regulation (EC) 1272/2008):

Physical hazards	Not Classified
Health hazards	Skin Irrit. 2 - H315
	Skin Sensitisation Category 1 – H317
Environmental hazards	Aquatic Chronic 2 - H411

2.2 Label elements



Pictogram	
Signal word	WARNING
Hazard statements	H315 Causes skin irritation
	H317 May cause an allergic skin reaction
	H411 Toxic to aquatic life with long-lasting effects
Precautionary statements	P261 Avoid breathing spray.
	P280 Wear protective gloves.
	P302 + P353 IF ON SKIN: Wash with plenty of soap and water.
	P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
	P362 Take off contaminated clothing and wash before reuse.
	P391 Collect spillage
	P501 Dispose of container as hazardous waste.

2.3 Other hazards The properties of the substance do not meet the specific criteria detailed in Annex XIII of Regulation (EC) No. 1907/2006 or do not allow a direct comparison with all the criteria in Annex XIII, but nevertheless indicate that the substance would not have PBT/vPvB properties so the substance is not considered a PBT/vPvB.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Component	CAS No	EC No	REACH Reg	Concentration	Classification
Pinene oligomerrs	34363-01-4	417-870-6	01-2119488053-38	23% w/w	Skin Irritant Cat. 2, Skin Sens. Cat. 1, Aquatic Acute Cat. 1, Aquatic Chronic Cat. 1
Alcohols, C12-16, ethoxylated	68551-12-2			<1%	Eye damage Cat.1, Aquatic acute Cat. 1.
Benzenesulphonic acid, 4-C10-14 alkyl derives., calcium salts	90194-26-6	290-635-1		<0.5%	Eye damage Cat. 1, Skin irritant Cat.2

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Eye contact:	Flush immediately with copious amounts of water or saline, including under eyelids.
Skin contact:	Wash affected area with soap and water
Inhalation:	Remove promptly to air. If not breathing, administer artificial respiration. Administer oxygen if breathing is difficult.

Ingestion: Do not induce vomiting and seek immediate medical assistance from a doctor.

4.2 Most important symptoms and effects

Localised skin irritation or contact sensitisation may be possible following significant, prolonged or repeated skin contact.

4.3 Indication of any immediate medical attention and special treatment needed

If ingestion occurs seek immediate medical assistance from a doctor.

SECTION 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Dry powder, carbon dioxide, foam

Unsuitable extinguishing media: None specified

5.2 Special hazards arising from the substance or mixture

None known, but may produce oxides of carbon

5.3 Advice for fire-fighters Full protection by suitable clothing and positive pressure, self-contained breathing apparatus.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear suitable personal protection as specified in section 8.2.

6.2 Environmental precautions Contain spillage. Avoid contamination of surface waters or release into drains.

6.3 Methods and material for containment and cleaning up

Collect spillage directly or after absorption into dry sand or other suitable material.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling When mixing spray formulations, avoid splashing/aerosol generation. When spraying diluted formulation, observe all specified restrictions and wear appropriate protective equipment: see section 7.3.

7.2 Conditions for safe storage, including any incompatibilities

Store and use in the open air, or in well ventilated areas. Store in tightly sealed containers. Store at ambient temperatures.

7.3 Specific end use(s)

Spray application onto agricultural or horticultural crops: spray away from surface waters. See Annex 1 for specific risk management measures, including no-spray buffer zones.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters No occupational exposure limits have been established. DNEL and PNEC values for pinene oligomers are given below:

Worker Derived No-Effect Level (DNEL) values:

- Inhalation: 2493 mg/m3 (acute, systemic), 12.2 mg/m3 (chronic, systemic)
- Dermal: 1526 mg/kg (acute, systemic), 3.47 mg/kg/day (chronic, systemic)

General population Derived No-Effect Level (DNEL) values:

- Inhalation: 1772 mg/m3 (acute, systemic), 3.63 mg/ m3 (chronic, systemic)
- Dermal: 727 mg/kg (acute, systemic), 2.08 mg/kg/day (chronic, systemic)

Predicted No-Effect Concentration (PNEC) values:

PNEC Freshwater: 2 µg/l
PNEC Intermittent: 2.4 µg/l
PNEC STP: 1000 µg/l
PNEC Freshwater Sediment: 1.26 mg/kg dw
PNEC Soil: 1 mg/kg dw
PNEC Oral: 33.3 mg/kg

8.2 Exposure controls Engineering controls: not applicable (mix in the open or a well-ventilated work area).

Eye/face protection: Use goggles/glasses with sideshield (e.g. EN166), or full-face respirator.

Skin/hand protection: Use impermeable gloves (e.g. EN374, nitrile) and wear suitable protective clothing (e.g. EN368 chemical protection suit).

Respiratory protection: Use respiratory protection with vapour/aerosol filter cartridges e.g. EN405 FFA1 half-face respirator or EN136 full-face respirator).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	Milky white viscous liquid
Odour:	not specified
pH:	7.5 – 7.7
Melting point/freezing point:	< -12 ºC (pinene oligomers)
Initial boiling point:	325 ºC (pinene oligomers)
Flash point:	> 100 ºC (not considered flammable)
Vapour pressure:	not available
Relative density:	0.98 – 0.99 g/cm^3 at 20 ºC
Solubility:	8.84E-04 g/l at 20 ºC in water (pinene oligomers)
Partition coefficient, n-octanol/water:	> 6.5 at 30 ºC (pinene oligomers)
Auto-ignition temperature:	268 ºC (pinene oligomers)
Viscosity:	not available
Explosive properties:	Chemical structure suggests no explosive properties
Oxidising properties:	Chemical structure suggests no oxidising properties

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Not considered chemically reactive
10.2 Chemical stability	Stable under normal ambient conditions and under the anticipated conditions of use
10.3 Possibility of hazardous reactions	None known
10.4 Conditions to avoid	None known
10.5 Incompatible materials	None known
10.6 Hazardous decomposition products	None known

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information in toxicological effects

Acute toxicity:	low
- Inhalation LC50:	> 4.43 mg/l (rat, OECD 403 study)
- Dermal LD50:	> 4000 mg/kg (rat, OECD 402 study)
- Oral LD50:	> 16000 mg/kg rat, OECD 401 study)
Skin corrosion/irritation:	Irritant (in rabbit study following EPA OPP 81-5).
Serious eye damage/irritation:	Non-irritant (in rabbit study following EPA OPP 81-4).
Respiratory or skin sensitisation:	did not cause contact sensitisation in Guinea pigs (OECD 406 Enhanced Buehler test) or human volunteers (Closed Patch Test in 53 volunteers: pinene oligomers tested). Positive in Guinea Pig maximisation test (EU Method B.6), which used intradermal injection and adjuvant (immune system stimulant). Risk of dermal sensitisation for man therefore uncertain, but classified as sensitising.
Germ cell mutagenicity:	negative in vitro (Ames test, OECD 471 and cytogenetic test, OECD 473). Negative in vivo (mouse micronucleus test, EU Method B.12 and rat liver UDS test, OECD486).
Carcinogenicity:	predicted not carcinogenic (based on read-across to close chemical analogue, rat and mouse oral oncogenicity studies).
Reproductive toxicity:	Not considered to cause reprotoxic effects (based on read-across to close chemical analogues, rat and rabbit oral studies).
STOT-single exposure:	acute studies revealed no toxic effects at doses up to 16000 mg/kg in rats.
STOT-repeated exposure:	in a 4-week rat study, no toxic effects were observed at 1000 mg/kg (rats, OECD guideline 407).
Aspiration hazard:	Not considered to be an aspiration hazard.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity Based on calculation from pinene oligomer concentrate

Acute toxicity to fish:

- Oncorhynchus mykiss, (OECD guideline 203) 96h LC50: 22.8 mg/l
- Oncorhynchus mykiss, (OECD guideline 203) 96h LC50: 30 mg/l
- Oncorhynchus mykiss, (OECD guideline 203) 96h LC50: > 26 mg/l

Acute toxicity to aquatic invertebrates:

- Daphnia magna, (OECD guideline 202) 48h EC50: 1.04 mg/l
- Daphnia magna, (EU Method C.2) 48h EC50: ≥ 8.64 - ≤ 39 mg/l

Toxicity to algae:

- Pseudokirchnerella subcapitata, (OECD guideline 201) 72h ErC50: 1.002 mg/l, 72h NOEC: 0.4 mg/l.

Toxicity to bacteria:
- Activated sludge (growth inhibition), (OECD guideline 209) EC50: >100 mg/l

Chronic toxicity to aquatic invertebrates:
- Daphnia magna, 21d NOEC: 0.48 mg/l (read-across to close chemical analogue)
- Daphnia magna, 21d NOEC: 1.04 mg/l (read-across to close chemical analogue)

Aqueous spray application onto water surface at approximately 4 g/sq.m water surface caused no evident toxicity in fish. In Daphnia physical entrapment and a maximum of 40% immobilisation was observed.

Toxicity to soil macroorganisms except arthropods:
- Eisenia fetida, 14d LC50: > 1000 mg/kg

Toxicity to honeybees:
- Apis mellifera 48h LD50: > 200 µg per animal (for both ingestion and direct contact)

Toxicity to terrestrial plants: - No adverse effects were observed after spray application of the substance to orange trees, grapevines and cereal crops (wheat and barley).

12.2 Persistence and degradability

Pinene oligomer not readily biodegradable: 8% degradation over 28 days in OECD 301D Closed Bottle test. Not rapidly biodegraded in a test for inherent biodegradability (3% degradation over 28 days, OECD 301B method using acclimated, mixed soil/sludge inoculum). Slow biodegradation predicted, based on chemical analogy to ubiquitous phytoterpenes.

12.3 Bioaccumulative potential Not determined experimentally. QSAR calculations of BCF based on chemical structure and physical properties give BCF values of 175 (based on QSAR-estimated log Kow, 9.29) and 6295 (based on log Kow 6.5). BCF indicator for bioaccumulation is concluded to be >2000 but <5000.

12.4 Mobility in soil Koc: >28840 (Log Koc: >4.46)
Method: HPLC estimation method
Remarks: Pinene oligomers are expected to bind strongly to organic matter.

12.5 Results of PBT and vPvB assessment Pinene oligomers are not considered to be persistent, bioaccumulating or toxic (neither PBT or vPvB).

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods National, local and EU regulations concerning waste disposal must be respected. Disposal by incineration is recommended.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number UN 3082

14.2 UN proper shipping name Environmentally Hazardous Substance, Liquid, N.O.S. (Terpenoid)

14.3 Transport hazard class(es) Class 9 hazard diamond applies

14.4 Packing group Packing group III

14.5 Environmental hazards Environmentally hazardous substance: Marine Pollutant

14.6 Special precautions for user None known

14.7 Transport in bulk Drums with non-removable heads should be used if containers holding more than 250 litres are shipped.

SECTION 15: REGULATORY INFORMATION

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

No substance-specific regulations apply.

15.2 Chemical safety assessment A chemical safety assessment has been carried out for pinene oligomers. Exposure scenarios for the two supported product uses (mixing and spray applications) are attached as Annex 1 to this safety data sheet.

SECTION 16: OTHER INFORMATION

Reason for revision: Replaces version dated June 2009. MSDS re-formatted in-line with regulation 453/2010 all sections affected.

Disclaimer The information given in this Material Safety Data Sheet is believed to be accurate at the time of its preparation and has been prepared as required by Regulation 435/2010. However the supplier of this Safety Data Sheet gives no warranty relating to its accuracy or completeness. Conditions of handling, storage, use and disposal of the product are beyond the supplier's control: accordingly we assume no responsibility, and expressly disclaim liability, for loss, damage, or expense arising out of, or in any way whatsoever connected with, handling, storage, use, or disposal of this product.

SAFETY INFORMATION SHEET

Date of issue: February 2004
Revision date: January 2018

Annex 1: Exposure Scenarios
Pinene Oligomers - Exposure Scenario for Identified Use 1

1. SCENARIO TITLE IU1 – ES.

Scenario descriptor	Industrial formulation

2. PROCESSES AND ACTIVITIES COVERED BY THIS EXPOSURE SCENARIO

General description	Workers repackaging or mixing supplied pinene oligomer products with other liquids to prepare formulated mixtures which are supplied to end-users.
REACH use descriptors	SU3 (industrial use). PROC 5 (batch mixing/blending). PROC 8b (transfer to/from vessels at dedicated facilities). ERC 2 (formulation of preparations).

3. OPERATIONAL CONDITIONS – TASK DURATION AND FREQUENCY

Workers in an industrial setting	Up to 8h working day, 150 days/year.

4. OPERATIONAL CONDITIONS – SUBSTANCE USAGE

4.1 Substance physical form	Liquid.
4.2 Concentration of substance	Supplied liquid (substance content 23%) used to formulate diluted mixtures (e.g. up to 2% substance content).
4.3 Substance quantity used	Up to 100 tonnes/year at formulation site.

5. OPERATIONAL CONDITIONS – WORKPLACE

Process parameters	Process temperature ca. 20oC (ambient). Non-dispersive use – no aerosol generation. Segregated work area.

6. RISK MANAGEMENT MEASURES

6.1 Human health - Personal Protective Equipment	Goggles/glasses with sideshield (e.g. EN166), or full-face respirator. Impermeable gloves (e.g. EN374, nitrile). Protective clothing (e.g. EN368 chemical protection suit). Respiratory protection with vapour/aerosol filter cartridges (e.g. EN405 FFA1 half-face respirator or EN136 full-face respirator).
6.2 Environment – emission controls	Pass site wastewaters to sewage treatment plant with minimum outflow dilution 25-fold at river discharge point; no sludge from this treatment plant to be spread onto agricultural soil (grassland spreading is acceptable).

7. WASTE MANAGEMENT

Site waste control measures	Collect emptied containers, spillages and any washings from contaminated areas for safe disposal – avoid release to drains.

8. EXPOSURE ESTIMATION

Exposure assessment method	EASE module within EUSES 2.1.1.
Worker exposure – dermal	Calculated to be negligible. Further limited by use of PPE.
Worker exposure – inhalation	Calculated maximum atmospheric exposure 1.18 mg/cu.m. This is less than 1/10th of the calculated worker long-term inhalation (systemic) DNEL (12.2 mg/cu.m).
Worker exposure – oral	Not relevant – standard industrial hygiene avoids ingestion.

9. EXPOSURE SCENARIO BOUNDARIES - DOWNSTREAM USER GUIDANCE

This exposure scenario relates only to the processes and operational conditions specified above. Downstream users should satisfy themselves that their use is compatible with this or another supplied exposure scenario, or make their own chemical safety assessment. In addition to the control and risk management measures specified here and elsewhere in this Safety Data Sheet, product labelling information must be noted. Final responsibility for safe use rests with the end user.

Pinene Oligomers - Exposure Scenario for Identified Use 2

1. SCENARIO TITLE IU2, ES1-8 (covers various sprayer equipment and application rates – see section 5).

Scenario descriptor	Agricultural/horticultural spray application

2. PROCESSES AND ACTIVITIES COVERED BY THIS EXPOSURE SCENARIO

General description	Professional fieldworkers mixing adjuvant/antitranspirant spray products with water and then spraying crops.
REACH use descriptors	SU22 (professional use). PROC 8a (transfer to/from vessels at non-dedicated facilities). PROC 11 (non-industrial spraying). ERC 8d (wide dispersive outdoor use, processing aids/open systems).

3. OPERATIONAL CONDITIONS – TASK DURATION AND FREQUENCY

Professionals following appropriate spray application code of practice (open air)

Up to 30 mixing operations/day (tractor-mounted spray tank).
Up to 200 mixing operations/day (hand-held spray tank).
Up to 6h spraying day; frequent use by spray operators.

4. OPERATIONAL CONDITIONS – SUBSTANCE USAGE

4.1 Substance physical form	Liquid.
4.2 Substance concentration	Up to 23%w/w (spray concentrate) mixed with water in spray tank to maximum final spray concentration of 2%w/w
4.3 Substance quantity used	Up to 8976g/ha/year at one field site (see 5 below).

5. OPERATIONAL CONDITIONS – SPRAY APPLICATION

Spray application rates	ES1-AR1: 40 l concentrate/8976g substance per ha once/year, tractor broadcast sprayer. ES2-AR1: 40 l concentrate/8976g substance per ha once/year, hand-held atomiser. ES3-AR2: 4 l concentrate/898g substance per ha twice/year, tractor boom sprayer. ES4-AR2: 4 l concentrate/898g substance per ha twice/year, tractor broadcast sprayer. ES5-AR3: 1.2 l concentrate/269g substance per ha 12x/year, tractor boom sprayer. ES6-AR3: 1.2 l concentrate/269g substance per ha 12x/year, tractor broadcast sprayer. ES7-AR4: 20 l concentrate/4488g substance per ha once/year, tractor broadcast sprayer. ES8-AR4: 20 l concentrate/4488g substance per ha once/year, hand-held atomiser.

6. RISK MANAGEMENT MEASURES

6.1 Human health - Personal Protective Equipment

Avoid splashing when mixing. Wear impermeable gloves plus protective clothing/coverall for mixing and spraying. Read and follow product label instructions.
For IU2-ES2, IU2-ES8 (high-level, hand-held spraying): also wear impermeable protective suit with head covering, eye/face and respiratory protection (e.g. EN368 chemical protection suit, EN166 goggles/glasses with sideshield, EN405 FFA1 half-face respirator with vapour/aerosol filter cartridges or EN136 full-face respirator).

6.2 Environment – emission controls

Apply no-spray buffer zones (distance from nearest watercourse bank):
ES1-AR1, ES2-AR1: 100m
ES3-AR2, ES4-AR2, ES5-AR3, ES6-AR3: 10m
ES7-AR4, ES8-AR4: 40m.

7. WASTE MANAGEMENT

Waste control measures	Collect container/spray tank washings for re-use, do not release to drains or watercourses

8. EXPOSURE ESTIMATION

Exposure assessment methods	Spray operators: Predicted Operator Exposure Level from UK POEM 7. Re-entry and Bystander exposures – recognised pesticide spray models.
Operator exposure	Maximum POELs during spraying: dermal 2.77 mg/kg/day, inhalation 0.10 mg/kg/day. Maximum re-entry exposure (dermal): 0.12 mg/kg/day. Long-term Derived No-Effect Levels: dermal 3.47 mg/kg/day, inhalation 1.53 mg/kg/day.
Bystander exposure	Maximum exposure (1/day): dermal 1.107 mg/kg/day, inhalation 0.018 mg/kg/day.

Long-term Derived No-Effect Levels: dermal 2.08 mg/kg/day, inhalation 1.45 mg/kg/day.

9. EXPOSURE SCENARIO BOUNDARIES - DOWNSTREAM USER GUIDANCE

This exposure scenario relates only to the processes and operational conditions specified above. Downstream users should satisfy themselves that their use is compatible with this or another supplied exposure scenario, or make their own chemical safety assessment. Final responsibility for safe use rests with the end user