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

1.1 Product identifier

Trade name	BAYER FLYING INSECT KILLER
Product code (UVP)	05685493

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

Use	Insecticide

1.3 Details of the supplier of the safety data sheet

Supplier	Bayer Environmental Science 230 Cambridge Science Park Milton Road Cambridge Cambridgeshire CB4 0WB United Kingdom
Telephone	00800-1214 9451
Telefax	+44(0)1223 426240
Responsible Department	Email: ukinfo@bayercropscience.com

1.4 Emergency telephone no.

Emergency telephone no.	0800-220876 (UK 24 hr)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.

Aerosols: Category 1
H222 Extremely flammable aerosol.

Acute aquatic toxicity: Category 1
H400 Very toxic to aquatic life.

Chronic aquatic toxicity: Category 1
H410 Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.

Hazard label for supply/use required.

Hazardous components which must be listed on the label:

- d-Tetramethrin
- d-Phenothrin
- Propane
- Butane
- Isobutane

Signal word: Danger

Hazard statements

H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.
H410	Very toxic to aquatic life with long lasting effects.
EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary statements

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.
P501	Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

2.3 Other hazards

Cutaneous sensations may occur, such as burning or stinging on the face and mucosae. However, these sensations cause no lesions and are of a transitory nature (max. 24 hours).
Pressurised container, heating will cause pressure rise with a risk of bursting.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical nature

Aerosol dispenser (AE)
Tetramethrin/d-Phenothrin 0.15:0.15 % w/w

Hazardous components

Hazard statements according to Regulation (EC) No. 1272/2008

Name	CAS-No. / EC-No. / REACH Reg. No.	Classification REGULATION (EC) No 1272/2008	Conc. [%]
d-Tetramethrin	1166-46-7 214-619-0	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	0.15
d-Phenothrin	188023-86-1	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	0.15
Distillates (petroleum),	64742-47-8	Asp. Tox. 1, H304	> 1 – < 10

hydrotreated light	265-149-8		
Butane	106-97-8 203-448-7 01-2119474691-32-xxxx	Flam. Gas 1, H220 Press. Gas	> 1
Propane	74-98-6 200-827-9 01-2119486944-21-xxxx	Press. Gas Flam. Gas 1, H220	> 1
Isobutane	75-28-5 200-857-2	Flam. Gas 1, H220 Press. Gas	> 1

Further information

d-Tetramethrin	1166-46-7	M-Factor: 100 (acute), 100 (chronic)
d-Phenothrin	188023-86-1	M-Factor: 100 (acute), 100 (chronic)

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

Remove contaminated clothing immediately and dispose of safely.

Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.

Inhalation

If abnormal over-exposure and inhalation of the aerosol occurs, the following advice is applicable: Move to fresh air. Keep patient warm and at rest. Call a physician or poison control center immediately.

Skin contact

Immediately wash with plenty of soap and water for at least 15 minutes. Warm water may increase the subjective severity of the irritation/paresthesia. This is not a sign of systemic poisoning. In case of skin irritation, application of oils or lotions containing vitamin E may be considered. If symptoms persist, call a physician.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Warm water may increase the subjective severity of the irritation/paresthesia. This is not a sign of systemic poisoning. Apply soothing eye drops, if needed anaesthetic eye drops. Get medical attention if irritation develops and persists.

Ingestion

Keep at rest. Rinse mouth. Do NOT induce vomiting. Call a physician or poison control center immediately.

Ingestion of the liquid of the aerosol is unlikely. However, if ingested, the following advice is applicable. Call a physician or poison control center immediately. Do not induce vomiting: contains petroleum distillates and/or aromatic solvents. Risk of product entering the lungs on vomiting after ingestion. Rinse mouth.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms

Inhalation may provoke the following symptoms:

	Local:, Skin and eye paraesthesia which may be severe, Usually transient with resolution within 24 hours, Skin, eye and mucous membrane irritation, Cough, Sneezing
	Systemic:, discomfort in the chest, Tachycardia, Hypotension, Nausea, Abdominal pain, Diarrhoea, Vomiting, Dizziness, Blurred vision, Headache, Anorexia, Somnolence, Coma, Convulsions, Tremors, Prostration, Airway hyperreaction, Pulmonary oedema, Palpitation, Muscular fasciculation, Apathy
	Symptoms and hazards refer to effects observed after intake of significant amounts of the active ingredient(s).
	Aspiration may cause pulmonary oedema and pneumonitis.
	Symptoms and hazards refer to the solvent.

4.3 Indication of any immediate medical attention and special treatment needed

Risks	This product contains a pyrethroid. Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning. Contains hydrocarbon solvents. May pose an aspiration pneumonia hazard.
Treatment	In case of skin irritation, application of oils or lotions containing vitamin E may be considered.
	Monitor: respiratory and cardiac functions. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. Keep respiratory tract clear. Oxygen or artificial respiration if needed. In case of convulsions, a benzodiazepine (e.g. diazepam) should be given according to standard regimens. If not effective, phenobarbital may be used. There is no specific antidote. Contraindication: atropine. Contraindication: derivatives of adrenaline. Recovery is spontaneous and without sequelae. In case of aspiration intubation and bronchial lavage should be considered. Monitor: kidney, liver and pancreas function.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable	High volume water jet
5.2 Special hazards arising from the substance or mixture	Dangerous gases are evolved in the event of a fire., Heating can lead to increased pressure with risk of explosion.

5.3 Advice for firefighters

Special protective equipment for firefighters	In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.
Further information	Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Whenever possible, contain fire-fighting water by diking area with sand or earth.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Precautions	Keep people away from and upwind of spill/leak. Consider the need for evacuation. Avoid contact with spilled product or contaminated surfaces. Ensure adequate ventilation. When dealing with a spillage do not eat, drink or smoke.
6.2 Environmental precautions	Do not allow to get into surface water, drains and ground water. If spillage enters drains leading to sewage works inform local water company immediately. If spillage enters rivers or watercourses, inform the Environment Agency (emergency telephone number 0800 807060).

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	The nature of this product, when contained in commercial packs, makes spillage unlikely. However, if significant amounts are spilled nevertheless, the following advice is applicable. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Clean floors and contaminated objects with plenty of water.
Additional advice	Check also for any local site procedures.
6.4 Reference to other sections	Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling	No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice. Ensure adequate ventilation.
Advice on protection against fire and explosion	The product is extremely flammable. Vapours may form explosive mixture with air. Fire or intense heat may cause violent rupture of packages. Keep away from heat and sources of ignition.
Hygiene measures	Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands before breaks and immediately after handling the product. Wash hands immediately after work, if necessary take a shower. Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt).

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	BEWARE: Aerosol is pressurized. Keep away from direct sun exposure and temperatures over 50 °C. Do not open by force or throw into fire even after use. Do not spray on flames or red-hot objects. Store in original container and out of the reach of children, preferably in a locked storage area. Keep away from direct sunlight. Protect from freezing. Keep containers tightly closed in a dry, cool and well-ventilated place.
Advice on common storage	Keep away from food, drink and animal feedingstuffs.
7.3 Specific end use(s)	Refer to the label and/or leaflet.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Butane	106-97-8	1,810 mg/m3/750 ppm (STEL)	12 2011	EH40 WEL
Butane	106-97-8	1,450 mg/m3/600 ppm (TWA)	12 2011	EH40 WEL

8.2 Exposure controls

Refer to COSHH assessment (Control of Substances Hazardous to Health (Amendment) Regulations 2004). Engineering controls should be used in preference to personal protective equipment wherever practicable. Refer also to COSHH Essentials.

Personal protective equipment
In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection
Personal protective equipment is not normally required when using the aerosol. However, if there is a risk of uncontrolled exposure to the contents, the following should be considered.
Wear respirator with an organic vapours and gas filter mask (protection factor 10) conforming to EN140 type A or equivalent.
Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

Hand protection
Personal protective equipment is not normally required when using the aerosol. However, if there is a risk of uncontrolled exposure to the contents, the following should be considered.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.
Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.

Material	Nitrile rubber
Rate of permeability	> 480 min

	Glove thickness	> 0.4 mm
	Directive	Protective gloves complying with EN 374.
Eye protection	Personal protective equipment is not normally required when using the aerosol. However, if there is a risk of uncontrolled exposure to the contents, the following should be considered. Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).	
Skin and body protection	Personal protective equipment is not normally required when using the aerosol. However, if there is a risk of uncontrolled exposure to the contents, the following should be considered. Wear standard coveralls and Category 3 Type 6 suit. If there is a risk of significant exposure, consider a higher protective type suit. Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.	

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form	aerosol
Flash point	-60 °C The value mentioned relates to the aerosol propellant.
Ignition temperature	288 °C The value mentioned relates to the aerosol propellant.
Upper explosion limit	8.4 %(V) The value mentioned relates to the aerosol propellant.
Lower explosion limit	1.8 %(V) The value mentioned relates to the aerosol propellant.
Relative vapour density	2.9 The value mentioned relates to the aerosol propellant.
Density	ca. 0.81 g/cm³ at 20 °C
Partition coefficient: n-octanol/water	Tetramethrin: log Pow: 4.58 d-Phenothrin: log Pow: 6.1
9.2 Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Thermal decomposition	Stable under normal conditions.
10.2 Chemical stability	Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.
10.4 Conditions to avoid	Extremes of temperature and direct sunlight.
10.5 Incompatible materials	Store only in the original container.
10.6 Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity	ATE (Mix) > 2,000 mg/kg Calculation method
Acute inhalation toxicity	ATE (Mix) > 5 mg/l Exposure time: 4 h Calculation method
Acute dermal toxicity	ATE (Mix) > 2,000 mg/kg Calculation method
Skin irritation	No skin irritation (Rabbit) The information is derived from the properties of the individual components.
Eye irritation	No eye irritation (Rabbit) The information is derived from the properties of the individual components.
Sensitisation	Non-sensitizing. (Guinea pig) The information is derived from the properties of the individual components.

Assessment STOT Specific target organ toxicity – single exposure

Tetramethrin: Based on available data, the classification criteria are not met.

d-Phenothrin: Based on available data, the classification criteria are not met.

Assessment STOT Specific target organ toxicity – repeated exposure

Tetramethrin did not cause specific target organ toxicity in experimental animal studies.
d-Phenothrin did not cause specific target organ toxicity in experimental animal studies.

Assessment mutagenicity

Tetramethrin was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
d-Phenothrin was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Tetramethrin caused at high dose levels an increased incidence of tumours in mice in the following organ(s): Testes. The mechanism that triggers tumours in rodents and the type of tumours observed are not relevant to humans.
d-Phenothrin was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction

Tetramethrin did not cause reproductive toxicity in a two-generation study in rats.
d-Phenothrin did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Tetramethrin did not cause developmental toxicity in rats and rabbits.
d-Phenothrin did not cause developmental toxicity in rats and rabbits.

Aspiration hazard

Based on available data, the classification criteria are not met.

Further information

Cutaneous sensations may occur, such as burning or stinging on the face and mucosae. However, these sensations cause no lesions and are of a transitory nature (max. 24 hours).

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 (Oncorhynchus mykiss (rainbow trout)) 0.0010 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient D-tetramethrin.
	LC50 (Danio rerio (Zebra fish)) 0.00559 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient d-phenothrin.
Toxicity to aquatic invertebrates	EC50 (Daphnia magna (Water flea)) 0.0046 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient d-phenothrin.
Toxicity to aquatic plants	(Desmodesmus subspicatus (green algae)) > 5 mg/l Exposure time: 72 h The value mentioned relates to the active ingredient d-phenothrin.

12.2 Persistence and degradability

Biodegradability	Tetramethrin: Not rapidly biodegradable d-Phenothrin: Not rapidly biodegradable
Koc	Tetramethrin: Koc: 1249 - 2939 d-Phenothrin: Koc: 141000

12.3 Bioaccumulative potential

Bioaccumulation	Tetramethrin: Potential bioaccumulation d-Phenothrin: Bioconcentration factor (BCF) 730 Does not bioaccumulate.

12.4 Mobility in soil

Mobility in soil	Tetramethrin: Slightly mobile in soils d-Phenothrin: Immobile in soil

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment	Tetramethrin: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB). d-Phenothrin: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

12.6 Other adverse effects

Additional ecological information	No other effects to be mentioned.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product	Disposal of the liquid product when not contained in the aerosol container by incineration in an appropriately licensed commercial incinerator. Advice may be obtained from the local waste regulation authority (part of the Environment Agency in the UK).
Contaminated packaging	Ensure aerosol container is empty before disposal. Dispose of empty and cleaned packaging safely.
Waste key for the unused product	**16 05 04*** gases in pressure containers (including halons) containing dangerous substances

SECTION 14: TRANSPORT INFORMATION

ADR/RID/ADN

14.1 UN number	**1950**
14.2 Proper shipping name	AEROSOLS
14.3 Transport hazard class(es)	2.1
14.4 Packing group	NOT APPLICABLE.
14.5 Environm. Hazardous Mark	YES
Hazard no.	NOT APPLICABLE.
Tunnel Code	D

This classification is in principle not valid for carriage by tank vessel on inland waterways. Please refer to the manufacturer for further information.

IMDG

14.1 UN number	**1950**
14.2 Proper shipping name	AEROSOLS (TETRAMETHRIN)
14.3 Transport hazard class(es)	2.1
14.4 Packing group	NOT APPLICABLE.
14.5 Marine pollutant	YES

IATA

14.1 UN number	**1950**
14.2 Proper shipping name	AEROSOLS, FLAMMABLE

14.3 Transport hazard class(es)	2.1
14.4 Packing group	NOT APPLICABLE.
14.5 Environm. Hazardous Mark	NO

UK 'Carriage' Regulations

14.1 UN number	**1950**
14.2 Proper shipping name	AEROSOLS
14.3 Transport hazard class(es)	2.1
14.4 Packing group	NOT APPLICABLE.
14.5 Environm. Hazardous Mark	YES

14.6 Special precautions for user
See sections 6 to 8 of this Safety Data Sheet.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No transport in bulk according to the IBC Code.

SECTION 15: REGULATORY INFORMATION

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

UK and Northern Ireland Regulatory References

This material may be subject to some or all of the following regulations (and any subsequent amendments). Users must ensure that any uses and restrictions as indicated on the label and/or leaflet are followed.

Transport

Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No 1348)
Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997 (SI 1997 No 2367)
Air Navigation Dangerous Goods Regulations 2002 (SI 2002 No 2786)

Supply and Use

Chemical (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No 716)
Chemical (Hazard Information and Packaging for Supply) (Northern Ireland) Regulations 2009
Control of Substances Hazardous to Health Regulations 2002 (SI 2002 No 2677)
EH40 Occupational Exposure Limits - Table 1 List of approved workplace exposure limits
Control of Pesticide Regulations 1986
Dangerous Substances and Explosive Atmospheres Regulations 2002

Waste Treatment

Environmental Protection Act 1990, Part II
Environmental Protection (Duty of Care) Regulations 1991
The Waste Management Licensing Regulations 1994 (as amended)
Hazardous Waste Regulations 2005 (Replacing Special Waste Regulations 1996 as amended)
Landfill Directive
Regulation on Substances That Deplete the Ozone Layer 1994 (EEC/3093/94)
Water Resources Act 1991
Anti-Pollution Works Regulations 1999

Further information

WHO-classification: III (Slightly hazardous)

15.2 Chemical Safety Assessment

A chemical safety assessment is not required.

SECTION 16: OTHER INFORMATION

Text of the hazard statements mentioned in Section 3

H220	Extremely flammable gas.
H304	May be fatal if swallowed and enters airways.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Abbreviations and acronyms

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number
Conc.	Concentration
EC-No.	European community number
ECx	Effective concentration to x %
EH40 WEL	Worker Exposure Limit
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
EN	European Standard
EU	European Union
IATA	International Air Transport Association
IBC	International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
ICx	Inhibition concentration to x %
IMDG	International Maritime Dangerous Goods
LCx	Lethal concentration to x %
LDx	Lethal dose to x %
LOEC/LOEL	Lowest observed effect concentration/level
MARPOL	MARPOL: International Convention for the prevention of marine pollution from ships
N.O.S.	Not otherwise specified
NOEC/NOEL	No observed effect concentration/level
OECD	Organization for Economic Co-operation and Development
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SI	Statutory Instrument
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

The above information is intended to give general health and safety guidance on the storage and transport of the product.
It is not intended to apply to the use of the product for which purposes the product label and any appropriate technical usage literature available should be consulted and any relevant licenses, consents or approvals complied with.

The requirements or recommendations of any relevant site or working procedure, system or policy in force or arising from any risk assessment involving the substance or product should take precedence over any of the guidance contained in this safety data sheet where there is a difference in the information given.
The information provided in this safety data sheet is accurate at the date of publication and will be updated as and when appropriate.
No liability will be accepted for any injury, loss or damage resulting from any failure to take account of information or advice contained in this safety data sheet.

Reason for Revision: Safety Data Sheet according to Regulation (EU) No. 2015/830. The following sections have been revised: Section 2: Hazards Identification. Section 4: First Aid Measures. Section 7: Handling and Storage. Section 8: Exposure Controls / Personal Protection.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.