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

PRODUCT INFORMATION

Product name	:	MATCH 050 EC
Design code	:	A7814K
Use	:	Insecticide
Company	:	Syngenta Crop Protection AG Postfach CH-4002 Basel Switzerland
Telephone	:	+41 61 323 11 11
Telefax	:	+41 61 323 12 12
Emergency telephone number	:	+44 1484 538444
E-mail address	:	safetydatasheetcoordination@syngenta.com

Harmful

Dangerous for the environment

2. HAZARDS IDENTIFICATION

Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye damage.
May cause drowsiness or dizziness.
Very toxic to aquatic life with long lasting effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

Chemical Name	CAS-No.	EC-No. (REACH Registration Number)	Symbol(s)	R-phrase(s)	Concentration
lufenuron	103055-07-8		N, Xi	R43 R50/53	5 % W/W
cyclohexanone *	108-94-1	203-631-1	Xn	R10 R20	20 - 30 % W/W
solvent naphtha (petroleum), heavy arom.	64742-94-5	265-198-5	N, Xn	R20 R37 R51/53 R65 R66 R67	60 - 80 % W/W
benzenesulfonic acid, tetrapropylene-, calcium salt	11117-11-6	234-360-7	Xi	R36/38	0 - 5 % W/W

2-methylpropan-1-ol	78-83-1	201-148-0	Xi	R10 R37/38 R41 R67	0 - 5 % W/W

* Substances for which there are Community workplace exposure limits.
For the full text of the R-phrases mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

General advice : Have the product container, label or Material Safety Data Sheet with you when calling the Syngenta emergency number, a poison control center or physician, or going for treatment.

Inhalation : Move the victim to fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Keep patient warm and at rest.
Call a physician or poison control centre immediately.

Skin contact : Take off all contaminated clothing immediately.
Wash off immediately with plenty of water.
If skin irritation persists, call a physician.
Wash contaminated clothing before re-use.

Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses.
Immediate medical attention is required.

Ingestion : If swallowed, seek medical advice immediately and show this container or label.
Do not induce vomiting: contains petroleum distillates and/or aromatic solvents.

Medical advice : There is no specific antidote available.
Treat symptomatically.
Do not induce vomiting: contains petroleum distillates and/or aromatic solvents.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Extinguishing media - small fires
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Extinguishing media - large fires
Alcohol-resistant foam

Extinguishing media which shall not be used for safety reasons : Do not use a solid water stream as it may scatter and spread fire.

Specific hazards during fire fighting : As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10).
Exposure to decomposition products may be a hazard to health.
Flash back possible over considerable distance.

Special protective equipment for fire-fighters : Wear full protective clothing and self-contained breathing apparatus.

Further information : Do not allow run-off from fire fighting to enter drains or water courses.
Cool closed containers exposed to fire with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Refer to protective measures listed in sections 7 and 8.
Keep people away from and upwind of spill/leak.
Beware of vapours accumulating to form explosive concentrations.
Vapours can accumulate in low areas.
Remove all sources of ignition.
Pay attention to flashback.

Environmental precautions : Prevent further leakage or spillage if safe to do so.
Do not flush into surface water or sanitary sewer system.

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

Additional advice : If the product contaminates rivers and lakes or drains inform respective authorities.

7. HANDLING AND STORAGE

HANDLING

Advice on safe handling : Avoid contact with skin and eyes.
When using do not eat, drink or smoke.
Use only in an area containing flame proof equipment.
Take precautionary measures against static discharges.
For personal protection see section 8.

STORAGE

Requirements for storage areas and containers : Keep containers tightly closed in a dry, cool and well-ventilated place.
Keep out of the reach of children.
Keep away from combustible material.
Keep in an area equipped with sprinklers.
Keep away from food, drink and animal feedingstuffs.
No smoking.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	Exposure limit(s)	Type of exposure limit	Source
lufenuron	5 mg/m3	8 h TWA	SYNGENTA

cyclohexanone	100 mg/m3 200 mg/m3 80 mg/m3 100 mg/m3 700 ppm 10 ppm, 41 mg/m3 (Skin) 20 ppm, 82 mg/m3 (Skin) 10 ppm, 40.8 mg/m3 (Skin) 20 ppm, 81.6 mg/m3	8 h TWA 15 min STEL 8 h TWA 8 h TWA IDLH 8 h TWA 15 min STEL 8 h TWA 15 min STEL	SUVA SUVA DFG ACGIH NIOSH UK HSE UK HSE IOELV IOELV
solvent naphtha (petroleum), heavy arom.	100 mg/m3	8 h TWA	SUPPLIER
2-methylpropan-1-ol	1,600 ppm 50 ppm 100 ppm 50 ppm 100 ppm 50 ppm, 231 mg/m3	 8 h TWA 15 min STEL 8 h TWA 8 h TWA 8 h TWA	NIOSH SUVA SUVA ACGIH DFG UK HSE

ENGINEERING MEASURES

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.
The extent of these protection measures depends on the actual risks in use.
If airborne mists or vapors are generated, use local exhaust ventilation controls.
Assess exposure and use any additional measures to keep airborne levels below any relevant exposure limit.
Where necessary, seek additional occupational hygiene advice.

PERSONAL PROTECTIVE EQUIPMENT

Protective measures : The use of technical measures should always have priority over the use of personal protective equipment.
When selecting personal protective equipment, seek appropriate professional advice.
Personal protective equipment should be certified to appropriate standards.

Respiratory protection : A combination gas, vapor and particulate respirator may be ne-cessary until effective technical measures are installed. Protection provided by air-purifying respirators is limited.
Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any circums-tances where air-purifying respirators may not provide adequate protection.

Hand protection : Chemical resistant gloves should be used.
Gloves should be certified to an appropriate standard.
Gloves should have a minimum breakthrough time that is appropriate to the duration of exposure.
The breakthrough time of gloves varies according to the thickness, material and manufacturer.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Suitable material
Nitrile rubber

Eye protection : If eye contact is possible, use tight-fitting chemical safety goggles and a face shield.

Skin and body protection : Assess the exposure and select chemical resistant clothing based on the potential for contact and the permeation / penetration characteristics of the clothing material.
Wash with soap and water after removing protective clothing.
Decontaminate clothing before re-use, or use disposable equip-ment (suits, aprons, sleeves, boots, etc.)
Wear as appropriate:
impervious protective suit

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: liquid
Form	: liquid
Colour	: light yellow to brownish
pH	: 3 - 7 at 1 % w/v
Flash point	: 51 °C at 763 mmHg
Density	: 0.933 g/cm3
Viscosity, dynamic	: 1.8 mPa.s at 40 °C
	: 2.6 mPa.s at 20 °C
Surface tension	: 32.4 mN/m at 20 °C

10. STABILITY AND REACTIVITY

Hazardous decomposition products : Combustion or thermal decomposition will evolve toxic and irritant vapors.

Hazardous reactions : None known.
Hazardous polymerisation does not occur.
Stable under normal conditions.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity : LD50 male and female Rat, > 3,000 mg/kg
GHS-Classification
None

Acute inhalation toxicity	:	LC50 Rat, > 5.3 mg/l, 4 h GHS-Classification None
Acute dermal toxicity	:	LD50 Rat, > 4,000 mg/kg GHS-Classification None
Skin irritation	:	Rabbit: irritating GHS-Classification Category 2
Eye irritation	:	Rabbit: Risk of serious damage to eyes. GHS-Classification Category 1
Sensitisation	:	guinea pig: A skin sensitizer GHS-Classification Category 1
Long term toxicity lufenuron	:	Did not show carcinogenic, teratogenic or mutagenic effects in animal experiments.
2-methylpropan-1-ol	:	Did not show carcinogenic, teratogenic or mutagenic effects in animal experiments.

12. ECOLOGICAL INFORMATION

ELIMINATION INFORMATION (PERSISTENCE AND DEGRADABILITY)

Stability in water lufenuron	:	Degradation half life: 112 d Lufenuron is not persistent in water.
Stability in soil lufenuron	:	Degradation half life : 28 d Lufenuron is not persistent in soil.
Mobility lufenuron	:	Lufenuron is immobile in soil.
Bioaccumulation lufenuron	:	Lufenuron bioaccumulates.

ECOTOXICITY EFFECTS

Toxicity to fish	:	LC50 Lepomis macrochirus (Bluegill sunfish), 20 mg/l , 96 h Based on test results obtained with similar product. GHS-Classification Category 3

Toxicity to aquatic invertebrates	:	EC50 Daphnia magna (Water flea), 0.0072 mg/l , 48 h Based on test results obtained with similar product. GHS-Classification Category 1
Toxicity to aquatic plants	:	EbC50 Pseudokirchneriella subcapitata (green algae), 2.63 mg/l , 72 h Based on test results obtained with similar product. GHS-Classification Category 2

13. DISPOSAL CONSIDERATIONS

Product	:	Do not contaminate ponds, waterways or ditches with chemical or used container. Do not dispose of waste into sewer. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations.
Contaminated packaging	:	Empty remaining contents. Triple rinse containers. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

14. TRANSPORT INFORMATION

Land transport

ADR/RID:	
UN number:	1224
Class:	3
Labels:	3
Packaging group:	III
Proper shipping name:	KETONES, LIQUID, N.O.S. (ALKYL (C3-C5) BENZENES AND CYCLOHEXANONE AND LUFENURON)
Environmentally hazardous:	Environmentally hazardous

Sea transport

IMDG:	
UN number:	1224
Class:	3
Labels:	3
Packaging group:	III
Proper shipping name:	KETONES, LIQUID, N.O.S. (ALKYL (C3-C5) BENZENES AND CYCLOHEXANONE AND LUFENURON)
Marine pollutant :	Marine pollutant

Air transport

IATA-DGR:

UN/ID No.:	UN 1224
Class:	3
Labels:	3
Packaging group:	III
Proper shipping name:	KETONES, LIQUID, N.O.S. (ALKYL (C3-C5) BENZENES AND CYCLOHEXANONE AND LUFENURON)

15. REGULATORY INFORMATION

Labelling according to EC Directives

Hazardous components which must be listed on the label:
- lufenuron
- solvent naphtha (petroleum), heavy arom.

Symbol(s)	:	Xn	Harmful
		N	Dangerous for the environment
R-phrase(s)	:	R10	Flammable.
		R38	Irritating to skin.
		R41	Risk of serious damage to eyes.
		R43	May cause sensitisation by skin contact.
		R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
		R65	Harmful: may cause lung damage if swallowed.
		R67	Vapours may cause drowsiness and dizziness.
S-phrase(s)	:	S 2	Keep out of the reach of children.
		S13	Keep away from food, drink and animal feedingstuffs.
		S20/21	When using do not eat, drink or smoke.
		S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
		S35	This material and its container must be disposed of in a safe way.
		S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
		S57	Use appropriate container to avoid environmental contamination.
		S62	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Note : The product is classified and labelled in accordance with Directive 1999/45/EC.

Special labelling of certain mixtures : To avoid risks to man and the environment, comply with the instructions for use.

GHS-Labelling

Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

Pictogram

Signal word	:	Danger	
Hazard statements	:	H226	Flammable liquid and vapour.
		H304	May be fatal if swallowed and enters airways.
		H315	Causes skin irritation.
		H317	May cause an allergic skin reaction.
		H318	Causes serious eye damage.
		H336	May cause drowsiness or dizziness.
		H410	Very toxic to aquatic life with long lasting effects.
Precautionary statements	:	P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
		P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
		P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
		P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
		P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P331	Do NOT induce vomiting.
		P391	Collect spillage.
		P501	Dispose of contents/ container to an approved waste disposal plant.
Remarks	:	Classified using all GHS hazard classes and categories. Where the GHS contains options, the most conservative option has been chosen. Regional or national implementations of GHS may not implement all hazard classes and categories.	

Hazardous components which must be listed on the label:
- lufenuron
- solvent naphtha (petroleum), heavy arom.

16. OTHER INFORMATION

Further information

Text of R-phrases mentioned in Section 3:

R10	Flammable.
R20	Harmful by inhalation.
R36/38	Irritating to eyes and skin.
R37	Irritating to respiratory system.
R37/38	Irritating to respiratory system and skin.
R41	Risk of serious damage to eyes.
R43	May cause sensitisation by skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.
R67	Vapours may cause drowsiness and dizziness.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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