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

1.1 Product identifier
Product name : TOPIK
Design code : A8588F

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

1.3 Details of the supplier of the safety data sheet
Company : Syngenta UK Limited
CPC4, Capital Park
Fulbourn, Cambridge
CB21 5XE
Telephone : (01223) 883400
Telefax : (01223) 882195
Website : www.syngenta.co.uk

1.4 Emergency telephone number
Emergency telephone number : +44 (0) 1484 538444

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
Classification according to Regulation (EU) 1272/2008

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Category</th>
<th>H-Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspiration hazard</td>
<td>Category 1</td>
<td>H304</td>
</tr>
<tr>
<td>STOT- repeated exposure</td>
<td>Category 2</td>
<td>H373</td>
</tr>
<tr>
<td>Acute aquatic toxicity</td>
<td>Category 1</td>
<td>H400</td>
</tr>
<tr>
<td>Chronic aquatic toxicity</td>
<td>Category 1</td>
<td>H410</td>
</tr>
</tbody>
</table>

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

Labelling: Regulation (EC) No. 1272/2008

Hazard pictograms

Signal Word: Danger

Hazard Statements:
- **H304**: May be fatal if swallowed and enters airways.
- **H373**: May cause damage to the nervous system through prolonged exposure or repeated exposure.
- **H410**: Very toxic to aquatic life with long lasting effects.

Precautions Statements:
- **P102**: Keep out of reach of children
- **P260**: Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
- **P273**: Avoid release to the environment.
- **P301/310**: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
- **P331**: Do NOT induce vomiting.
- **P391**: Collect spillage.
- **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.

Supplemental Information:
- **EUH066**: Repeated exposure may cause skin dryness or cracking.
- **EUH401**: To avoid risks to human health and the environment comply with the instructions for use. Contains clodinafop-propargyl and cloquintocet-mexyl. May produce an allergic reaction.

Hazardous components which must be listed on the label:
- clodinafop-propargyl
- solvent naphtha (petroleum), highly arom.

2.3 Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>EC-No. Registration number</th>
<th>Classification (REGULATION (EC) No 1272/2008)</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>solvent naphtha (petroleum), highly arom.</td>
<td>64742-94-5</td>
<td>265-198-5</td>
<td>01-2119451097-39</td>
<td>Asp. Tox.1; H304 Aquatic Chronic2; H411</td>
</tr>
</tbody>
</table>
### Section 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 centre 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.

#### 4.1 Most important symptoms and effects, both acute and delayed

**Symptoms:** Aspiration may cause pulmonary oedema and pneumonitis.

#### 4.2 Indication of any immediate medical attention and special treatment

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

---

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
<th>Health Statements</th>
<th>Exposure Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>clodinafop-propargyl</td>
<td>105512-06-9</td>
<td>Acute Tox.4; H302 Skin Sens.1; H317 STOT RE2; H373 Aquatic Acute1; H400 Aquatic Chronic1; H410</td>
<td>22.1 % W/W</td>
</tr>
<tr>
<td>dihydro-2(3H)-furanon</td>
<td>96-48-0 202-509-5 01-2119471839-21-0 000</td>
<td>Acute Tox.4; H302 Eye Dam.1; H318 STOT SE3; H336</td>
<td>10 - 20 % W/W</td>
</tr>
<tr>
<td>cloquintocet-mexyl</td>
<td>99607-70-2 01-2119381871-32-0 000 01-2119387592-28-0 000</td>
<td>Skin Sens.1; H317 Aquatic Acute1; H400 Aquatic Chronic1; H410</td>
<td>5.5 % W/W</td>
</tr>
<tr>
<td>calcium dodecylbenzene sulphonate</td>
<td>26264-06-2 84989-14-0 90194-26-6 247-557-8 284-903-7 290-635-1</td>
<td>Skin Irrit.2; H315 Eye Dam.1; H318</td>
<td>1 - 5 % W/W</td>
</tr>
<tr>
<td>poly(oxy-1,2-ethanediyl), alpha-[tris(1-phenyl ethyl)phenyl]-omega-hydroxy-</td>
<td>99724-09-5 70639-25-0</td>
<td>Aquatic Chronic3; H412</td>
<td>1 - 5 % W/W</td>
</tr>
</tbody>
</table>

Substances for which there are Community workplace exposure limits. For the full text of the H-Statements mentioned in this Section, see Section 16.
SECTION 5. FIREFIGHTING MEASURES

5.1 Extinguishing media
Extinguishing media - small fires
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Extinguishing media - large fires
Use alcohol-resistant foam or water spray.
Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture
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.

5.3 Advice for fire-fighters:
Wear full protective clothing and self-contained breathing apparatus. Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Refer to protective measures listed in sections 7 and 8.

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

6.3 Methods and materials for containment and 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). If the product contaminates rivers and lakes or drains inform respective authorities.

6.4 Reference to other sections
Refer to protective measures listed in sections 7 and 8.
Refer to disposal considerations listed in section 13.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling
No special protective measures against fire required. Avoid contact with skin and eyes. When using do not eat, drink or smoke. For personal protection see section 8.

7.2 Conditions for safe storage, including any incompatibilities
No special storage conditions required. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs.

7.3 Specific end use(s)
Registered Crop Protection products: For proper and safe use of this product, please refer to the approval conditions laid down on the product label.
SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>Exposure limit(s)</th>
<th>Type of exposure limit</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>clodinafop-propargyl</td>
<td>1 mg/m3</td>
<td>8 h TWA</td>
<td>SYNGENTA</td>
</tr>
<tr>
<td>cloquintocet-mexyl</td>
<td>10 mg/m3</td>
<td>8 h TWA</td>
<td>SYNGENTA</td>
</tr>
<tr>
<td>solvent naphtha (petroleum), highly arom.</td>
<td>20 ppm, 100 mg/m3</td>
<td>8 h TWA</td>
<td>SUPPLIER</td>
</tr>
</tbody>
</table>

The following recommendations for exposure controls/personal protection are intended for the manufacture, formulation and packaging of the product.

8.2 Exposure controls

**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 mist or vapours 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.

**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 necessary 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 circumstances where air-purifying respirators may not provide adequate protection.

**Hand protection**: Chemical resistant gloves are not usually required. Select gloves based on the physical job requirements.

**Eye Protection**: Eye protection is not usually required. Follow any site specific eye protection policies.

**Skin and body protection**: No special protective equipment required. Select skin and body protection based on the physical job requirements.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Form</td>
<td>Liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>Yellow to brown</td>
</tr>
<tr>
<td>Odour</td>
<td>aromatic</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>4 – 8 at 1 % w/v</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>86 °C at 764 mm Hg</td>
</tr>
</tbody>
</table>
Evaporation rate : No data available
Flammability (solid, gas) : No data available
Lower explosion limit : No data available
Upper explosion limit : No data available
Vapour pressure : No data available
Relative vapour density : No data available
Density : 1.09 g/cm³
Solubility in other solvents : No data available
Partition Coefficient n-octanol/water : No data available
Autoignition temperature : 490 °C
Thermal decomposition : No data available
Viscosity, dynamic : 11.4 mPa.s at 20 °C
Viscosity, kinematic : No data available
Explosive properties : Not explosive
Oxidizing properties : Not oxidising
Surface tension : 33.5 mN/m at 20 °C

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity : No information available.
10.2 Chemical Stability : No information available.
10.3 Possibility of hazardous reactions : None known. Hazardous polymerisation does not occur.
10.4 Conditions to avoid : No information available.
10.5 Incompatible materials : No information available.
10.6 Hazardous decomposition products : Combustion or thermal decomposition will evolve toxic and irritant vapours.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity : LD50 female rat, > 2,000 mg/kg
Acute inhalational toxicity : Acute toxicity estimate, > 5 mg/l
Acute dermal toxicity : LD50 male and female rat, > 5,000 mg/kg
Skin corrosion/irritation : Rabbit: non-irritating
Serious eye damage/eye irritation : Rabbit: non-irritating
Respiratory or skin sensitisation : Buehlet Test guinea pig: not sensitising.
Germ cell mutagenicity : Did not show mutagenic effects in animal experiments.
Solvent naphtha (petroleum), highly arom.
Clodinafop-propargyl : Did not show mutagenic effects in animal experiments.
Dihydro-2(3H)-furanone : In vitro tests did not show mutagenic effects
Cloquintocet-mexyl : Did not show mutagenic effects in animal experiments.
Calcium : Did not show mutagenic effects in animal experiments.
dodecylbenzene sulphonate : 
Carcinogenicity : 

Version 5
Did not show carcinogenic effects in animal experiments.
Did not show carcinogenic effects in animal experiments.
Did not show carcinogenic effects in animal experiments.

Did not show carcinogenic effects in animal experiments.

Did not show teratogenic effects in animal experiments.
Did not show teratogenic effects in animal experiments.
Did not show teratogenic effects in animal experiments.

Did not show reproductive toxicity effects in animal experiments.
Did not show reproductive toxicity effects in animal experiments.
Did not show reproductive toxicity effects in animal experiments.

Did not show reproductive toxicity effects in animal experiments.

No adverse effect has been observed in chronic toxicity tests.
No adverse effect has been observed in chronic toxicity tests.
No adverse effect has been observed in chronic toxicity tests.

12.1 Toxicity

Toxicity to fish: LC50 Oncorhynchus mykiss (rainbow trout), > 3.6 mg/l, 96h
Toxicity to aquatic invertebrates: EC50 Daphnia magna (Water flea), 9.5 mg/l, 48h
Toxicity to aquatic plants: EbC50 Pseudokirchneriella subcapitata (green algae), 1.3 mg/l, 72 h
ErC50 Pseudokirchneriella subcapitata (green algae), 7.6 mg/l, 72 h

12.2 Persistence and degradability

Biodegradability:
Solvent naphtha (petroleum), highly arom.: Expected to be biodegradable.
Clofendiazole: Not readily biodegradable.
Clofendiazole: Not readily biodegradable.
Stability in water:
Clofendiazole: Degradation half life: < 1 d at 20 ºC. Not persistent in water.
Clofendiazole: Degradation half life: 0.4 d. Not persistent in water.
Stability in soil:
Clofendiazole: Degradation half life: < 0.5 d. Not persistent in soil.
Clofendiazole: Degradation half life: 2.4 d. Not persistent in soil.

12.3 Bioaccumulative potential

Solvent naphtha (petroleum), highly arom.: Accumulation in aquatic organisms is expected.
Clofendiazole: Does not bioaccumulate.
Clofendiazole: Does not bioaccumulate.
12.4 Mobility in soil

clodinafop-propargyl: Clodinafop-propargyl has low mobility in soil.
cloquintocet-mexyl: Cloquintocet-mexyl is immobile in soil.

12.5 Results of PBT and vPvB assessment

clodinafop-propargyl, cloquintocet-mexyl: These substances are not considered to be persistent, bioaccumulating nor toxic (PBT).
These substances are not considered to be very persistent nor very bioaccumulating (vPvB).

12.6 Other adverse effects

Other information: Classification of the product is based on the summation of the concentrations of classified components.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

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 for local recycling or waste disposal. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

Land transport (ADR/RID)

<table>
<thead>
<tr>
<th>14.1 UN Number</th>
<th>UN 3082</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2 UN proper shipping name</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CLODINAFOP-PROPARGYL AND SOLVENT NAPHTHA)</td>
</tr>
<tr>
<td>14.3 Transport hazard class(es)</td>
<td>9</td>
</tr>
<tr>
<td>14.4 Packing Group</td>
<td>III</td>
</tr>
<tr>
<td>14.5 Labels</td>
<td>9</td>
</tr>
<tr>
<td>14.5 Environmental hazards</td>
<td>Environmentally hazardous</td>
</tr>
</tbody>
</table>

Sea transport (IMDG)

<table>
<thead>
<tr>
<th>14.1 UN Number</th>
<th>UN 3082</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2 UN proper shipping name</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CLODINAFOP-PROPARGYL AND SOLVENT NAPHTHA)</td>
</tr>
<tr>
<td>14.3 Transport hazard class(es)</td>
<td>9</td>
</tr>
<tr>
<td>14.4 Packing Group</td>
<td>III</td>
</tr>
<tr>
<td>14.5 Labels</td>
<td>9</td>
</tr>
<tr>
<td>14.5 Environmental hazards</td>
<td>Marine pollutant</td>
</tr>
</tbody>
</table>

Air transport (IATA-DGR)

<table>
<thead>
<tr>
<th>14.1 UN Number</th>
<th>UN 3082</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2 UN proper shipping name</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CLODINAFOP-PROPARGYL AND SOLVENT NAPHTHA)</td>
</tr>
<tr>
<td>14.3 Transport hazard class(es)</td>
<td>9</td>
</tr>
</tbody>
</table>
**SAFETY DATA SHEET** according to Regulation (EC) No. 1907/2006

**TOPIK**
Version 5 - This version replaces all previous versions.
Revision Date 23.09.2013

<table>
<thead>
<tr>
<th>14.4</th>
<th>Packing Group</th>
<th>: III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labels</td>
<td>: 9</td>
<td></td>
</tr>
<tr>
<td>14.6</td>
<td>Special precautions for user</td>
<td>: none</td>
</tr>
</tbody>
</table>

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

not applicable

**SECTION 15. REGULATORY INFORMATION**

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

**GHS-Labelling**

<table>
<thead>
<tr>
<th>Hazard pictograms</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Hazard pictograms" /></td>
</tr>
</tbody>
</table>

**Signal Word**: Danger

**Hazard Statements**

: **H304** May be fatal if swallowed and enters airways.

: **H373** May cause damage to the nervous system through prolonged exposure or repeated exposure.

: **H410** Very toxic to aquatic life with long lasting effects.

**Precautions Statements**

: **P102** Keep out of reach of children

: **P260** Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

: **P273** Avoid release to the environment.

: **P301/310** IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

: **P331** Do NOT induce vomiting.

: **P391** Collect spillage.

: **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.

**Supplemental Information**

: **EUH066** Repeated exposure may cause skin dryness or cracking.

: **EUH401** To avoid risks to human health and the environment comply with the instructions for use. Contains clodinafop-propargyl and cloquintocet-mexyl. May produce an allergic reaction.

Hazardous components which must be listed on the label:

- clodinafop-propargyl
- solvent naphtha (petroleum), highly arom.

**15.2 Chemical Safety Assessment**

A Chemical Safety Assessment is not required for this substance.

**SECTION 16. OTHER INFORMATION**

Version 5
Use plant protection products safely. Always read the label and product information before use.

Based upon SDS release dated 23/09/2013, version 5 with local amendment.

Full text of H-Statements referred to under sections 2 and 3.

H302 Harmful if swallowed.
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.
H373 May cause damage to organs through prolonged or repeated exposure.
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.
H412 Harmful to aquatic life with long lasting effects.

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 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.

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