


## Safety Data Sheet

# SOLSAN SC L9590 (Act 36 of 1947)

1) PRODUCT AND COMPANY IDENTIFICATION	
Product name:	SOLSAN SC
Other means of identification:	Chlorothalonil 720 g/L SC
Chemical Name:	(RS)-1-[2,5-dichloro-4-(1,1,2,3,3,3-hexafluoropropoxy)phenyl]-3-(2,6-difluorobenzoyl)urea
Recommended use:	Fungicide
Restrictions on use:	Agriculture
UN No:	3082
Distributed by:	MERIDIAN AGRITECH P O BOX 436 MODDERFONTEIN TEL 011 8228509 FAX 0866901386 MOBILE: 0834006056 www.agritech.co.za
Emergency Number:	POISON CENTRE (UNITAS HOSPITAL) 012 664 1100 TYGERBERG:021 931 6129 RED CROSS: 021 689 5227 RAPID SPILL RESPONSE 0800 775 3305 GRIFFON POISON CENTRE: 082 446 8946
2) HAZARDS IDENTIFICATION:	
Classification of the substance/mixture:	Acute Toxicity (Inhalation) Category 2 Acute Toxicity (Oral) Category 4 Skin Irritation Category 3 Skin Sensitisation Category 1 Eye Damage Category 1 Respiratory Sensitisation Category 1 Mutagenicity Category 1B Carcinogenicity Category 2 (Inhalation) Reproductive Toxicity Category 1B STOT SE Category 3 STOT SE Category 3 STOT RE Category 2 Aquatic Acute Category 1 Aquatic Chronic Category 1
Label Elements: Globally Harmonized System, EU (GHS):	<p><b>Pictograms:</b></p>  <p>Signal word: Danger</p> <p><b>Hazard Statements:</b>  <b>H302:</b> Harmful if swallowed.  <b>H315:</b> Causes skin irritation.  <b>H317:</b> May cause an allergic skin reaction.</p>

According to Directive 67/548/EEC No. 1272/2008 [CLP]

**H318:** Causes serious eye damage.  
**H319:** Causes serious eye irritation.  
**H330:** Fatal if inhaled.  
**H332:** Harmful if inhaled.  
**H334:** May cause an allergy or asthma symptoms or breathing difficulties in inhaled.  
**H335:** May cause respiratory irritation.  
**H336:** May cause drowsiness and dizziness.  
**H340:** May cause genetic defects.  
**H351:** Suspected of causing cancer.  
**H360:** May damage fertility or the unborn child.  
**H371:** May cause damage to organs.  
**H372:** Causes damage to organs through prolonged or repeated exposure.  
**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.  
**H412:** Harmful to aquatic life with long-lasting effects.

**Precautionary Statements:**

**P201:** Obtain special instructions before use.  
**P202:** Do not handle until all safety precautions have been read and understood.  
**P260:** Do not breathe fumes/mist/vapors/spray.  
**P262:** Do not get in eyes, on skin, or on clothing.  
**P263:** Avoid contact during pregnancy or while nursing.  
**P270:** Do not eat, drink or smoke when using the product.  
**P271:** Use only outdoors or in a well-ventilated area.  
**P272:** Contaminated work clothing should not be allowed out of the workplace.  
**P273:** Avoid release to the environment.  
**P280:** Wear protective gloves, protective clothing, eye protection.  
**P321:** Specific treatment (See First aid measures on this label)  
**P362+P364:** Take off contaminated clothing and wash it before reuse.  
**P405:** Store locked up.

**Hazard Symbol(s):**

Xn – dangerous to health  
Xi - Irritant  
N – dangerous for the environment

**R-phrases(s):**

**R22:** Harmful if swallowed.  
**R26:** Very toxic by inhalation.  
**R36/37:** Irritating to eyes and respiratory system.  
**R38:** Irritating to skin.  
**R40:** Limited evidence of a carcinogenic effect.  
**R41:** Risk of serious damage to eyes.  
**R43:** May cause sensitisation by skin contact.  
**R46:** May cause heritable genetic damage.  
**R48/20/21/22:** Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.  
**R50/53:** Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
**R60:** May impair fertility.

**S-phrases(s):**

**S1/2:** Keep locked up and out of the reach of children.  
**S7:** Keep container tightly closed.  
**S13:** Keep away from food, drink and animal feeding stuffs.  
**S18:** Handle and open container with care.  
**S20/21:** When using, do not eat drink or smoke.  
**S23:** Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).  
**S24/25:** Avoid contact with skin and eyes.  
**S26:** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
**S29/56:** Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.  
**S36/37/39:** Wear suitable protective clothing, gloves and eye/face protection.  
**S35:** This material and its container must be disposed of in a safe way.  
**S38:** In case of insufficient ventilation, wear suitable respiratory equipment.  
**S42:** During fumigation/spraying wear suitable respiratory equipment (appropriate wording to be specified by the manufacturer).  
**S46:** If swallowed, seek medical advice immediately and show this container.

**S53:** Avoid exposure — obtain special instructions before use.  
**S57:** Use appropriate containment to avoid environmental contamination.  
**S60:** This material and its container must be disposed of as a hazardous waste.  
**S62:** If swallowed, do not induce vomiting: seek medical advice immediately

**3) COMPOSITION / INFORMATION ON INGREDIENTS:**

**3.1 Substances:**

Not applicable

**3.2 Mixtures:**

Chemical name	Concentration	CAS No.	EC No.	Classification according to Regulation EC 1272/2008 (CLP)
Chlorothalonil	720 g/L (51%)	1897-45-6	608-014-00-4	Eye Dam. Cat. 1 (H318) Skin Sens. Cat. 1 (H317) Acute Tox. Cat. 2 (H330) STOT SE Cat. 3 (H335) Carc. Cat. 2 (H351) Aquatic Acute Cat. 1 (H400) Aquatic Chronic Cat. 1 (H410)
Ethylene glycol	50 g/L (3.5%)	107-21-1	203-473-30	Acute Tox. Cat. 4 (H302) STOT RE Cat. 2 (H373, kidney, heart, central nervous system, liver, oral) STOT SE Cat. 3 (H336) Skin Irrit. Cat. 2 (H315) Muta. Cat. 1B (H340) Repr. Cat. 1B (H360) Aquatic Chronic Cat. 3 (H412) Eye Irrit. Cat. 2 (H319)
Soprophor FL	30 g/L (2%)	105362-40-1	600-650-0	Skin Irrit. Cat. 2 (H315) Eye Irrit. Cat. 2 (H319)
Bentonite	6 g/L (0.4%)	1302-78-9	215-108-5	Skin Irrit. Cat. 2 (H315) Eye Irrit. Cat. 2 (H319) STOT SE Cat. 3 (H335, Lungs) STOT SE Cat. 2 (H371, Respiratory System) Acute Tox. Cat. 4 (H332) Acute Tox. Cat. 4 (H302) Carc. Cat. 2 (H351, inhalation) STOT RE Cat. 1 (H372, Lungs) Skin Sens. Cat. 1 (H317) Resp. Sens. Cat. 1 (H334)
Xanthum gum	2 g/L (0.1%)	11138-66-2	234-394-2	Skin Irrit. Cat. 2 (H315) Eye Irrit. Cat. 2 (H319) Skin Sens. Cat. 1 (H317)

**4) FIRST AID MEASURES:**

**Description of First-Aid Measures:**

**Inhalation:**

Remove patient to fresh air. Loosen clothing around neck. Lie down and keep warm and at rest. If breathing is shallow or has stopped ensure airway is clear and apply resuscitation. **Seek medical assistance immediately.**

**Skin contact:**

Immediately flush body and clothes with large amounts of water. Remove contaminated clothing and footwear. Wash affected areas with soap and water. Do not rub skin. Seek medical assistance if irritation persists.

**Eye contact:**

Flush eyes with plenty of water for 15 minutes holding eyelids open if necessary. Remove contact lenses **Seek medical assistance immediately.**

**Ingestion:**

Never give anything by mouth to an unconscious person. **Do not induce vomiting.** For advice, contact the National Poisons Centre. **Seek medical assistance immediately.**

None known.


**Most important symptoms and effects, both acute and delayed:**

No specific antidote known. Treat symptomatically.

**Indication of any immediate medical attention and special treatment needed:**

<b>5) FIRE-FIGHTING MEASURES:</b>							
<b>Extinguishing Media:</b>  <b>Unsuitable Extinguishing Media:</b>  <b>Specific Hazards arising from the substance/mixture:</b>  <b>Fire Fighting:</b>        <b>Protective clothing:</b>	<p>Small fires: Water spray, alcohol-resistant foam, dry chemical, carbon dioxide. Large fires: Alcohol-resistant foam, water spray.</p> <p>Do not use high volume water jet, due to contamination risk.</p> <p>When heated to decomposition, irritant or dangerous fumes may be emitted.</p> <p>Remove spectators from surrounding area. Isolate the fire area and evacuate downwind. Use a recommended extinguishing agent for the type of surrounding fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Contain fire control agents for later disposal. Avoid inhaling hazardous vapours and fumes from burning materials. Keep upwind. Remove container from fire area if possible and without risk. Water can be used to cool unaffected containers but must be contained for later disposal. Do not scatter the material. Avoid pollution of waterways.</p> <p><b>UNUSUAL FIRE OR EXPLOSION HAZARDS:</b> Combustion products are toxic and/or irritant.</p> <p>Full protective clothing and self-contained breathing apparatus</p>						
<b>6) ACCIDENTAL RELEASE MEASURES:</b>							
<b>Personal precautions, protective equipment and emergency procedures:</b>  <b>Environmental precautions:</b>  <b>Methods and material for containment and cleaning up:</b>	<p>Avoid contact with skin and eyes. Do not breathe in spray or fumes. For personal protection see Section 8.</p> <p>Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system. Do not allow to enter drains or watercourses. If contamination of water courses is unavoidable, report to the Police and the Department of Water/Environmental Affairs immediately.</p> <p>Wear protective clothing. Clear area of unprotected personnel. Contain and absorb liquid spills with an inert material such as sand, earth, diatomaceous earth or vermiculite, remove by scoop or vacuum. Use approved industrial vacuum cleaner for removal and place in labelled waste containers for later disposal. Wash area with water and detergent and absorb with further inert material. Heavily contaminated soil layers have to be dug out down to clean soil. If spill does enter waterways contact the local authority. Spilled product cannot be re-used and must be disposed of by incineration or disposal in a chemical waste disposal facility. If containers cannot be recycled, they should be disposed of together with the waste chemical.</p>						
<b>7) HANDLING &amp; STORAGE:</b>							
<b>Precautions for Safe Handling:</b>  <b>Conditions for Safe Storage, including any incompatibilities:</b>	<p>Avoid skin and eye contact and inhalation of spray mist. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke. Wash contaminated clothing before re-use.</p> <p><b>APPROVED HANDLER:</b> This product must be under the control of an approved handler when applied in a wide dispersive manner; or used by a commercial contractor. <b>BEWARE:</b> Spray drift hazard. Apply this product carefully. Spray drift may cause serious damage to other desirable plants.</p> <p>Store in original container tightly closed and in a locked, dry, cool area away from foodstuffs, fertilisers and seeds. Keep away from children or uninformed persons. Avoid extreme temperatures.</p>						
<b>8) EXPOSURE CONTROL / PERSONAL PROTECTION:</b>							
<b>Appropriate Engineering Controls:</b>  <b>Control Parameters: Occupational exposure limits:</b>  <b>PERSONAL PROTECTIVE EQUIPMENT:</b>  <b>Clothing:</b>	<p>It is essential to provide adequate ventilation. The measures appropriate for a particular work site depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.</p> <table border="1"> <thead> <tr> <th>Ingredient</th> <th>CAS#</th> <th>Limit</th> </tr> </thead> <tbody> <tr> <td>Chlorothalonil</td> <td>1897-45-6</td> <td>TWA: 0.1 mg/m<sup>3</sup></td> </tr> </tbody> </table>	Ingredient	CAS#	Limit	Chlorothalonil	1897-45-6	TWA: 0.1 mg/m <sup>3</sup>
Ingredient	CAS#	Limit					
Chlorothalonil	1897-45-6	TWA: 0.1 mg/m <sup>3</sup>					

<p><b>Respiratory protection:</b></p> <p><b>Gloves:</b></p> <p><b>Eye protection:</b></p> <p><b>Emergency eye wash:</b></p>	<p>Consult supplier to confirm that the equipment is suitable.</p> <p>Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance. Assess the exposure and select chemically resistant clothing based on the potential for contact as well as the permeation or penetration characteristics of the clothing material. As appropriate: Impervious protective suit.</p> <p>A particulate filter respirator may be needed until effective technical measures are installed. The protection provided by air-purifying respirators is limited. Use self-contained breathing apparatus in the case of emergency spills, when exposure levels are unknown or under any circumstances where air-purifying respirators may not provide adequate protection.</p> <p>Employee must wear appropriate chemical-resistant gloves to prevent contact with this substance. The gloves should be certified to an appropriate standard. The gloves should have a minimum breakthrough time that is appropriate to the duration of the exposure. The breakthrough time of gloves varies according to the thickness, material and the manufacturer. Gloves should be discarded and replaced if there is any sign of degradation or chemical breakthrough. Suitable material: Nitrile.</p> <p>Not usually required. Follow any site-specific eye protection policies.</p> <p>Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.</p>
<b>9) PHYSICAL &amp; CHEMICAL PROPERTIES:</b>	
<b>Appearance:</b>	White Liquid
<b>Odour:</b>	Characteristic
<b>Solubility:</b>	Suspends in water
<b>pH:</b>	6.5 – 8.0
<b>Odour threshold:</b>	Not available
<b>Melting point / Freezing point</b>	Not available
<b>Initial boiling point and boiling range</b>	Not available
<b>Flash point:</b>	Not applicable
<b>Evaporation rate:</b>	Not available
<b>Flammability (solid, gas)</b>	Not flammable
<b>Upper/ lower flammability or explosive limits:</b>	Not available
<b>Vapour pressure:</b>	Not available
<b>Vapour density:</b>	Not available
<b>Relative density:</b>	1.403
<b>Partition coefficient: n-octanol/water</b>	Not available
<b>Auto-ignition temperature:</b>	Not available
<b>Decomposition Temperature:</b>	Not available
<b>Viscosity:</b>	Not available
<b>10) STABILITY &amp; REACTIVITY:</b>	
<b>Reactivity:</b>	Stable under normal conditions.
<b>Chemical Stability:</b>	When stored appropriately this product should show no significant degradation for 2 years from the date of manufacture.
<b>Possibility of hazardous reactions:</b>	None known.
<b>Conditions to avoid:</b>	Avoid extreme temperatures.
<b>Incompatible materials:</b>	None known.
<b>Hazardous decomposition product(s):</b>	When heated to decomposition, irritant or dangerous fumes may be emitted.
<b>11) TOXICOLOGICAL INFORMATION:</b>	
<b>Acute Toxicity:</b>	
<b>Oral:</b>	LD <sub>50</sub> (Rat): > 2,000 mg/kg.
<b>Dermal:</b>	LD <sub>50</sub> (Rat): > 6,000 mg/kg
<b>Inhalation:</b>	LC <sub>50</sub> (Rat, 4 hours): 1.5 mg/L air.
<b>Skin Corrosion/Irritation:</b>	Mild irritant
<b>Serious Eye Damage/Irritation:</b>	Mild irritant
<b>Respiratory or Skin Sensitization:</b>	May cause sensitisation.
<b>Germ Cell Mutagenicity:</b>	May cause genetic defects.
<b>Carcinogenicity:</b>	Suspected of causing cancer.

<b>Reproductive Toxicity:</b>	May damage fertility or the unborn child.
<b>STOT-SE:</b>	May cause drowsiness and dizziness.
<b>STOT-RE:</b>	May cause damage to organs through prolonged or repeated exposure.
<b>Aspiration Hazard:</b>	No data available.
<b>12) ECOLOGICAL INFORMATION: BASED ON TECHNICAL MATERIAL</b>	
<b>Ecotoxicity:</b>	
<b>Birds:</b>	Acute oral LD <sub>50</sub> for mallard ducks >4640 mg/kg. Dietary LC <sub>50</sub> (8 d) for mallard ducks and bobwhite quail >10 000 mg/kg diet.
<b>Fish:</b>	Acute LC <sub>50</sub> (96 h, static) for rainbow trout 47, bluegill sunfish 59, channel catfish 48 µg/l.
<b>Daphnia:</b>	LC <sub>50</sub> (48 h, static) 70 µg/l.
<b>Algae:</b>	EC <sub>50</sub> (120 h) for <i>Selenastrum capricornutum</i> 210 µg/l; EC <sub>50</sub> (72 h) for <i>Navicula pelliculosa</i> 5.1 µg/l.
<b>Worms:</b>	LC <sub>50</sub> (14 d) for earthworms >404 mg/kg.
<b>Bees:</b>	LD <sub>50</sub> for honeybees (oral) >63 µg/bee; (contact) >101 µg/bee.
<b>Persistence and Degradability:</b>	In aerobic and anaerobic soil studies, DT <sub>50</sub> is 0.3–28 d (20 °C). Stable to hydrolysis at pH 5–7; at pH 9 (22 °C), DT <sub>50</sub> is 38 d. Degradation is faster in biotic aquatic systems; typical DT <sub>50</sub> (aerobic) <2 h, (anaerobic) <10 d. A wide variety of metabolites are formed, which are, in turn, degraded further.
<b>Bio-accumulative Potential:</b>	None known.
<b>Mobility in Soil:</b>	K <sub>oc</sub> 1600 (sand) to 14 000 (silt), indicating low mobility to immobile
<b>13) DISPOSAL CONSIDERATIONS:</b>	
<b>Waste Disposal:</b>	Do not contaminate ponds, waterways or ditches with any chemical or used container. Do not dispose of waste into the sewer. Where possible, recycling is preferable to disposal or incineration. If recycling is not practicable, dispose of in accordance with local and national regulations Do not contaminate water, food or feed by disposal.
<b>Container Disposal:</b>	Refer to the product label for instructions. Empty the remaining contents. Triple rinse the container. Empty containers must be taken to an approved waste handling site for recycling or disposal. If the container is to be refilled, do not rinse with any material or introduce any pesticide other than this product. DO NOT REUSE THE CONTAINER FOR ANY OTHER PURPOSE. Do not transport if this container is damaged or leaking.
<b>14) TRANSPORTATION INFORMATION:</b>	
<b>Road Transport ADR / IRD:</b>	UN NUMBER: 3082 UN Proper Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Chlorothalonil) Transport Hazard Class: 9 Miscellaneous Dangerous Goods Packaging group: III Labelling no: 9 Environmental Hazards: Not applicable Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling.
<b>Maritime Transport IMDG / IMO:</b>	UN NUMBER: 3082 UN Proper Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Chlorothalonil)  Transport Hazard Class: 9 Miscellaneous Dangerous Goods Packaging group: III Labelling no: 9 Environmental Hazards: Marine Pollutant Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling.
	
<b>Air Transport ICAO / IATA:</b>	UN NUMBER: 3082 UN Proper Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Chlorothalonil) Transport Hazard Class: 9 Miscellaneous Dangerous Goods Packaging group: III Labelling no: 9 Environmental Hazards: Not applicable

	Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling.
<b>Transport in Bulk (according to Annex II of MARPOL 73/78 and the IBC Code):</b>	No transport in bulk according to the IBC Code.
<b>15) REGULATORY INFORMATION:</b>	
<b>Safety, health and environmental regulations/legislation specific for the substance/mixture:</b>	For the user of this plant-protective product applies: 'To avoid risks to man and the environment, comply with the instructions for use.' (Directive 1999/45/EC, Article 10, No. 1.2)
<b>Chemical Safety Assessment:</b>	Advice on product handling can be found in sections 7 and 8 of this safety data sheet.
<b>16) OTHER INFORMATION:</b>	
<p>All information and instructions provided in this Safety Data Sheet (SDS) are based on the current state of scientific and technical knowledge at the date indicated on the present SDS and are presented in good faith and believed to be correct. This information applies to the product as such. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear.</p> <p>It is the responsibility of persons in receipt of this SDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with this product. If the recipient subsequently produces formulation(s) containing this product, it is the recipient's sole responsibility to ensure the transfer of all relevant information from this SDS to their own SDS. The information contained herein is provided in good faith but makes no representation as to its comprehensiveness or accuracy. A properly trained person using this product intends this document only as a guide to the appropriate handling of the material. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.</p> <p>MERIDIAN AGRITECH MAKES NO REPRESENTATION OR WARRANTIES, EITHER EXPRESSES OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANT ABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MERIDIAN AGRITECH (PTY) LTD WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.</p> <p>Date of issue: 07/11/2014 Date of revision: 28/05/2019</p> <p><b>Abbreviations and acronyms:</b></p> <ol style="list-style-type: none"> <li>1. CAS number: Chemical Abstracts Service number.</li> <li>2. CLP: Classification, Labelling, Packaging.</li> <li>3. LD<sub>50</sub>: Lethal Dose for 50% of the test population.</li> <li>4. LC<sub>50</sub>: Lethal Concentration for 50% of the test population.</li> <li>5. DT<sub>50</sub>: Half-life.</li> <li>6. GHS: Globally Harmonised System (of Classification and Labelling of Chemicals).</li> <li>7. TWA: Time-weighted average.</li> </ol> <p><b>Literature References:</b></p> <ul style="list-style-type: none"> <li>• GHS: <a href="http://www.ccohs.ca/oshanswers/chemicals/ghs.html">www.ccohs.ca/oshanswers/chemicals/ghs.html</a></li> <li>• ECHA: <a href="https://echa.europa.eu/search-chemicals">https://echa.europa.eu/search-chemicals</a></li> </ul>	