

Section 1 - Identification of The Material and Supplier

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Chemical nature: Emulsifiable concentrate containing clethodim
Trade Name: **F.S.A. Clethodim 360 Herbicide**
APVMA Code: 88745
Product Use: Agricultural herbicide for use as described on the product label.
Creation Date: **February, 2020**
This version issued: **February, 2020** and is valid for 5 years from this date.
Poisons Information Centre: Phone 13 1126 from anywhere in Australia

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: Xn, Harmful. Xi, Irritating. N, Dangerous to the environment. Hazardous according to the criteria of SWA.

Not a Dangerous Good according to Australian Dangerous Goods (ADG) Code, IATA or IMDG/IMSBC criteria.

SUSMP Classification: S5

ADG Classification: None allocated. Not a Dangerous Good according to Australian Dangerous Goods (ADG) Code, IATA or IMDG/IMSBC criteria.

UN Number: None allocated



GHS Signal word: DANGER

Flammable liquids Category 4

Acute Toxicity Oral Category 4

Aspiration Hazard Category 1

Skin Irritation Category 2

Skin Sensitisation Category 1

Eye irritation Category 2B

Specific Target Organ Toxicity - Single Exposure Category 3

Hazardous to aquatic environment Short term/Chronic Category 3

HAZARD STATEMENT:

H227: Combustible liquid.

H302: Harmful if swallowed.

H304: May be fatal if swallowed and enters airways.

H315: Causes skin irritation.

H317: May cause an allergic skin reaction.

H320: Causes eye irritation.

H335: May cause respiratory irritation.

H412: Harmful to aquatic life with long lasting effects.

PREVENTION

P210: Keep away from heat, sparks, open flames and hot surfaces. - No smoking.

P261: Avoid breathing fumes, mists, vapours or spray.

P262: Do not get in eyes, on skin, or on clothing.

P270: Do not eat, drink or smoke when using this 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 and eye or face protection.

RESPONSE

P362: Take off contaminated clothing and wash before reuse.

P301+P312: IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.

SAFETY DATA SHEET

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P333+P313: If skin irritation or rash occurs: Get medical advice.

P337+P313: If eye irritation persists: Get medical advice.

P370+P378: In case of fire, use carbon dioxide, dry chemical, foam.

STORAGE

P410: Protect from sunlight.

P402+P404: Store in a dry place. Store in a closed container.

P403+P235: Store in a well-ventilated place. Keep cool.

DISPOSAL

P501: Dispose of contents and containers as specified on the registered label.

Emergency Overview

Physical Description & Colour: Brown liquid

Odour: Mild fragrance.

Major Health Hazards: Effects of acute exposure to Clethodim or formulated products may include eye or skin irritation or central nervous system effects, e.g., salivation, decreased motor activity, incoordination, unsteady gait and hyperactivity. Irritating to eyes and skin, harmful if swallowed, possible skin sensitiser, if aspirated, may cause lung damage.

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc, g/L	TWA (mg/m ³)	STEL (mg/m ³)
Clethodim	99129-21-2	360	not set	not set
Aromatic hydrocarbons	64742-94-5	500-600	not set	not set
Other non hazardous ingredients	secret	to 1 L	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak "is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

Inhalation: First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Skin Contact: Wash gently and thoroughly with warm water (use non-abrasive soap if necessary) for 10-20 minutes or until product is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts) and completely decontaminate them before reuse or discard. If irritation persists, repeat flushing and seek medical attention.

Eye Contact: Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 15 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention immediately. Take special care if exposed person is wearing contact lenses.

Ingestion: If swallowed, do NOT induce vomiting. Wash mouth with water and contact a Poisons Information Centre, or call a doctor.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: In case of fire, use carbon dioxide, dry chemical or foam.

SAFETY DATA SHEET

Fire Fighting: When fighting fires involving significant quantities of this product, wear a splash suit complete with self contained breathing apparatus.

Flash point: >61°C

Upper Flammability Limit: No data.

Lower Flammability Limit: No data.

Autoignition temperature: No data.

Flammability Class: Flammable Category 4 (GHS), C1 combustible (AS 1940)

Section 6 - Accidental Release Measures

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. Wear full protective clothing including eye/face protection. All skin areas should be covered. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include no specific manufacturer recommendations. Use impermeable gloves with care. Eye/face protective equipment should comprise, as a minimum, protective goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned below (section 8).

Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. Refer to product label for specific instructions. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this SDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: Note that this product is GHS Flammable Class 4 and therefore, for Storage, meets the definition of Dangerous Goods. If you store large quantities (tonnes) of such products, we suggest that you consult your state's Dangerous Goods authority in order to clarify your obligations regarding their storage.

Protect this product from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Some liquid preparations settle or separate on standing and may require stirring before use. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

SWA Exposure Limits

TWA (mg/m³)

STEL (mg/m³)

Exposure limits have not been established by SWA for any of the significant ingredients in this product.

The ADI for Clethodim is set at 0.01mg/kg/day. The corresponding NOEL is set at 1mg/kg/day. ADI means Acceptable Daily Intake; NOEL means No-observable-effect-level. Data from Australian ADI List, March 2017.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: This product should only be used in a well ventilated area. If natural ventilation is inadequate, use of a fan is suggested.

Eye Protection: Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where this product is being used.

Skin Protection: If you believe you may have a sensitisation to this product or any of its declared ingredients, you should prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered. See below for suitable material types.

SAFETY DATA SHEET

Protective Material Types: There is no data that enables us to recommend any type except that it should be impermeable.

Respirator: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above.

Eyebaths or eyewash stations and safety deluge showers should, if practical, be provided near to where this product is being handled commercially.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	Brown liquid
Odour:	Mild fragrance.
Boiling Point:	Not available.
Freezing/Melting Point:	No specific data. Liquid at normal temperatures.
Volatiles:	No data.
Vapour Pressure:	No data.
Vapour Density:	No data.
Specific Gravity:	0.98
Water Solubility:	Emulsifiable.
pH:	No data.
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	No data.
Coeff Oil/water Distribution:	No data.
Autoignition temp:	No data.

Section 10 - Stability and Reactivity

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid: Protect this product from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

Incompatibilities: strong acids, strong bases, strong oxidising agents.

Fire Decomposition: Combustion forms carbon dioxide, and if incomplete, carbon monoxide and possibly smoke. Water is also formed. May form nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation: This product will not undergo polymerisation reactions.

Section 11 - Toxicological Information

Toxicity: An information profile for Clethodim is available at <http://extoxnet.orst.edu/pips/ghindex.html>

Acute Toxicity: Clethodim is harmful by ingestion. The reported oral LD₅₀ is 1,630 mg/kg and 1,360 mg/kg in male and female rats, respectively. Clethodim is practically non-toxic by dermal absorption. The reported dermal LD₅₀ is greater than 5,000 mg/kg. The technical product did not cause skin irritation in the rabbit, but formulation caused moderate skin as well as eye irritation in the rabbit. Eye irritation was reversible within 8-21 days. No data regarding skin sensitization or eye irritation were available for the technical product. Clethodim is practically non-toxic by the inhalation route. The reported rodent 4-hour inhalation LC₅₀ for Clethodim technical is greater than 3.9 mg/L. Effects of acute exposure to Clethodim or formulated products may include eye or skin irritation or central nervous system effects, e.g., salivation, decreased motor activity, incoordination, unsteady gait and hyperactivity. These latter effects may be in large measure due to the aromatic constituents of the formulation, as these effects commonly occur upon exposure to such compounds.

Chronic Toxicity: In a one-year feeding study of dogs, doses of 75 mg/kg/day resulted in increased relative and absolute liver weights, with anaemia-like alterations in blood chemistry such as reduced haemoglobin, erythrocyte and haematocrit counts. In a two-year chronic study of rats, no compound-related effects on the structure and function of the liver were observed, and no changes in liver weights were observed at the highest dose tested, approximately 100 mg/kg/day. Reduced body weight gain was observed in another study on rats at 350 mg/kg/day, but not at 100 mg/kg/day, over an unspecified period.

Reproductive Effects: No effects on fertility, length of gestation or growth and development of offspring were observed at doses up to and including the highest dose tested, 263 mg/kg/day.

Teratogenic Effects: Data suggests that while there have been documented teratological effects in animal studies, such effects are unlikely in humans under normal conditions of exposure.

SAFETY DATA SHEET

Mutagenic Effects: The available data for mutagenicity and genotoxicity yield no evidence for mutagenic or genotoxic activity.

Carcinogenic Effects: No carcinogenic effects were observed in mice administered Clethodim at doses of 24 mg/kg/day over an 18 month period. Based on the available data, it appears that Clethodim is not carcinogenic.

Organ Toxicity: The liver was the primary organ affected in chronic animal studies. Although potential effects associated with acute exposure are reported to include central nervous system effects, no available chronic data pointed to such effects.

Fate in Humans & Animals: Clethodim is readily absorbed in the gastrointestinal tract, with approximately 90% absorption of oral doses. It is rapidly metabolized and eliminated (primarily sulfoxide metabolites, ca 63%) with less than 1% recoverable unchanged.

Classification of Hazardous Ingredients

Ingredient	Risk Phrases
Clethodim	
<ul style="list-style-type: none"> Acute toxicity – category 4 Skin sensitisation – category 1 Hazardous to the aquatic environment (chronic) – category 3 	
Aromatic Hydrocarbons	Conc>=10%: Xn; R65
<ul style="list-style-type: none"> Aspiration hazard – category 1 	

Potential Health Effects

Inhalation:

Short Term Exposure: Available data indicates that this product is not harmful. In addition product is unlikely to cause any discomfort or irritation.

Long Term Exposure: No data for health effects associated with long term inhalation.

Skin Contact:

Short Term Exposure: Classified as a potential sensitiser by skin contact. Exposure to a skin sensitiser, once sensitisation has occurred, may manifest itself as skin rash or inflammation, and in some individuals this reaction can be severe. In addition product is a skin irritant. Symptoms may include itchiness and reddening of contacted skin. Other symptoms may also become evident, but all should disappear once exposure has ceased.

Long Term Exposure: No data for health effects associated with long term skin exposure.

Eye Contact:

Short Term Exposure: This product is an eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment may cause permanent damage.

Long Term Exposure: No data for health effects associated with long term eye exposure.

Ingestion:

Short Term Exposure: Significant oral exposure is considered to be unlikely. Because of the low viscosity of this product, it may directly enter the lungs if swallowed, or if subsequently vomited. Once in the lungs, it is very difficult to remove and can cause severe injury or death. However, this product may be irritating to mucous membranes but is unlikely to cause anything more than transient discomfort.

Long Term Exposure: No data for health effects associated with long term ingestion.

Carcinogen Status:

SWA: No significant ingredient is classified as carcinogenic by SWA.

NTP: No significant ingredient is classified as carcinogenic by NTP.

IARC: No significant ingredient is classified as carcinogenic by IARC.

Section 12 - Ecological Information

Harmful to aquatic organisms, may cause long-term adverse effects to the aquatic environment.

Effects on Birds: Clethodim is practically non-toxic to birds. Under likely conditions of use, it is unlikely to pose a hazard to avian species.

Effects on Aquatic Organisms: Clethodim is slightly toxic to fish and aquatic invertebrate species. No effects were seen at concentrations of 5.5 mg/L in Daphnia. No significant bioaccumulation has been observed in fish. Under likely conditions of use, it is unlikely to pose a hazard to aquatic species.

SAFETY DATA SHEET

Effects on Other Animals (Nontarget species): Clethodim is practically non-toxic to honeybees with reported LD50s of greater than 100 µg/bee for both the technical product and formulated product. EPA has stated that "available wildlife data indicate that the proposed uses on cotton and soybeans will result in minimal hazard to nontarget and endangered beneficial insect, avian and freshwater fish and mammalian species". Clethodim is selectively toxic to plants, affecting only grass species.

ENVIRONMENTAL FATE

Breakdown of Chemical in Soil and Groundwater: Clethodim is of low persistence in most soils with a reported half-life of approximately 3 days. Breakdown is mainly by aerobic processes, although photolysis may make some contribution.

Breakdown of Chemical in Surface Water: Clethodim may be highly persistent in the aquatic environment. Reported half-lives for Clethodim in the aquatic environment are 128 days in the aqueous phase and 214 days in the sediment. The reported hydrolysis half-life at pH 7-9 is approximately 300 days.

Breakdown of Chemical in Vegetation: Clethodim is rapidly degraded on the leaf surfaces by an acid-catalysed reaction and photolysis. Remaining Clethodim will rapidly penetrate the cuticle and enter the plant. Section 13 - Disposal Considerations

Disposal: Special help is available for the disposal of Agricultural Chemicals. The product label will give general advice regarding disposal of small quantities, and how to cleanse containers. However, for help with the collection of unwanted rural chemicals, contact ChemClear 1800 008 182 <http://www.chemclear.com.au/> and for help with the disposal of empty drums, contact DrumMuster <http://www.drummuster.com.au/> where you will find contact details for your area.

Section 14 - Transport Information

UN Number: This product is not classified as a Dangerous Good by ADG, IATA or IMDG/IMSBC criteria. No special transport conditions are necessary unless required by other regulations.

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations. The following ingredient: Clethodim, is mentioned in the SUSMP.

Section 16 - Other Information

This SDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail (7 th edition)
AICS	Australian Inventory of Chemical Substances
SWA	Safe Work Australia, formerly ASCC and NOHSC
CAS number	Chemical Abstracts Service Registry Number
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
UN Number	United Nations Number

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (Feb 2016)

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SAFETY DATA SHEET