



CROWNBRIDGE

CROWNBRIDGE MANAGEMENT L.P.
SUITE 260,2323 - 32 AVENUE N.8
CALGARY, ALBERTA T2E623,
CANADA
WWW.CROWNBRIDGETRADING.COM

MATERIAL SAFETY DATA SHEET

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

Product identifier

Trade name ELEMENT

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

Use Insecticide, Miticide
Restrictions on use See product label for restrictions

COMPANY CROWNBRIDGE MANAGEMENT L.P.
Suite 260,2323 - 32 Avenue N.8.,
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Emergency number
80004249300

SECTION 2: HAZARDS IDENTIFICATION

Classified in accordance with Part 2 of the Hazardous Products Regulations

Skin sensitisation, Carcinogenicity: Category 1B
Reproductive toxicity, Specific target organ toxicity - repeated exposure: Category 2

Labelling in accordance with Part 3 of the Hazardous Products Regulations



Signal word: Danger

Hazard statements

May cause an allergic skin reaction.
May cause cancer.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.



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Precautionary statements

Do not breathe gas/ mist/ vapours/ spray.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
IF ON SKIN: Wash with plenty of water/ soap.
If skin irritation or rash occurs: Get medical advice/ attention.
Specific measures (see supplemental first aid instructions on this label).
Wash contaminated clothing before reuse.
IF exposed or concerned: Get medical advice/ attention.
Store locked up.
Dispose of contents/container in accordance with local regulation.

Hazards Not Otherwise Classified (HNOC)

No physical hazards not otherwise classified.
No health hazards not otherwise classified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Concentration % by weight
Spirodiclofen	148477-71-8	22.3

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
Eye contact	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Most important symptoms and effects, both acute and delayed

Symptoms	To date no symptoms are known.
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Indication of any immediate medical attention and special treatment needed

Treatment There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Water, Dry chemical, Foam

Unsuitable High volume water jet

Special hazards arising from the substance or mixture In the event of fire the following may be released:, Hydrogen chloride (HCl), Carbon monoxide (CO)

Advice for firefighters

Special protective equipment for firefighters Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

Flash point Not relevant; aqueous solution

Auto-ignition temperature No data available

Lower explosion limit No data available

Upper explosion limit No data available

Explosivity Not applicable

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional advice Use personal protective equipment. If the product is accidentally spilled, do not allow to enter soil, waterways or waste water canal.



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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

Precautions for safe handling

Advice on safe handling Use only in area provided with appropriate exhaust ventilation. Handle and open container in a manner as to prevent spillage.

Hygiene measures Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.
Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area. Protect from freezing.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Spirodiclofen	148477-71-8	0.39 mg/m ³ (SK-SEN)		OES BCS*

Exposure controls

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 When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Hand protection Chemical resistant nitrile rubber gloves

Eye protection Safety glasses with side-shields

Skin and body protection Wear long-sleeved shirt and long pants and shoes plus socks.

General protective measures Follow manufacturer's instructions for cleaning/maintaining PPE. If



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no such instructions for washables, use detergent and warm/tepid water.
Keep and wash PPE separately from other laundry.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	white to beige
Physical State	suspension
Odor	slight
Odour Threshold	No data available
pH	4.0 - 6.0 (100 %) (23 °C)
Vapor Pressure	No data available
Vapor Density (Air = 1)	No data available
Density	1.09 g/cm ³ (20 °C)
Evaporation rate	No data available
Boiling Point	No data available
Melting / Freezing Point	-17.8 °C / 0.04- °F
Water solubility	miscible
Minimum Ignition Energy	Not applicable
Decomposition temperature	Not applicable
Partition coefficient: n-octanol/water	No data available
Viscosity	250 - 350 mPa.s (20 °C) Velocity gradient 20 /s 80 - 120 mPa.s (20 °C) Velocity gradient 100 /s 700 - 1,000 cps (25 °C)
Flash point	Not relevant; aqueous solution
Auto-ignition temperature	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Explosivity	Not applicable

SECTION 10: STABILITY AND REACTIVITY

Reactivity	
Thermal decomposition	Not applicable
Chemical stability	Stable under normal conditions.



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Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatible materials	No data available
Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes Skin contact, Ingestion, Eye contact

Immediate Effects

Skin Harmful if absorbed through skin. May cause sensitisation by skin contact.

Ingestion Harmful if swallowed.

Information on toxicological effects

Acute oral toxicity LD50 (male/female combined Rat) > 2,000 mg/kg

Acute inhalation toxicity LC50 (male/female combined Rat) > 3.146 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.
Highest attainable concentration.

Acute dermal toxicity LD50 (male/female combined Rat) > 4,000 mg/kg

Skin corrosion/irritation No skin irritation (Rabbit)

Serious eye damage/eye irritation No eye irritation (Rabbit)

Respiratory or skin sensitisation Skin: Sensitising (Guinea pig)
OECD Test Guideline 406, Magnusson & Kligman test

Assessment STOT Specific target organ toxicity – repeated exposure

Spirodiclofen : May cause damage to organs through prolonged or repeated exposure.

Assessment mutagenicity

Spirodiclofen was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Spirodiclofen caused at high dose levels an increased incidence of tumours in mice in the following organ(s): Liver.

Spirodiclofen caused at high dose levels an increased incidence of tumours in rats in the following organ(s): uterus, Testes. The tumours seen with Spirodiclofen were caused through a non-genotoxic mechanism, which is not relevant at low doses. The mechanism that triggers tumours in rodents is not relevant for the low exposures encountered under normal use conditions.

Spirodiclofen: May cause cancer.



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ACGIH

None.

NTP

None.

IARC

None.

OSHA

None.

Assessment toxicity to reproduction

Spirodiclofen: is suspected to affect male reproductive function.

Spirodiclofen did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Spirodiclofen did not cause developmental toxicity in rats and rabbits.

Further information

Only acute toxicity studies have been performed on the formulated product.

The non-acute information pertains to the active ingredient(s).

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish

LC50 (Oncorhynchus mykiss (rainbow trout)) > 0.035 mg/l

Exposure time: 96 h

The value mentioned relates to the active ingredient spirodiclofen.

No acute toxicity was observed at its limit of water solubility.

Chronic toxicity to fish

Oncorhynchus mykiss (rainbow trout)

Early-life Stage

NOEC: 0.00195 mg/l

Exposure time: 97 d

The value mentioned relates to the active ingredient spirodiclofen.

Toxicity to aquatic invertebrates

EC50 (Daphnia magna (Water flea)) > 0.045 mg/l

Exposure time: 48 h

The value mentioned relates to the active ingredient spirodiclofen.

No acute toxicity was observed at its limit of water solubility.

Toxicity to aquatic plants

IC50 (Raphidocelis subcapitata (freshwater green alga)) > 0.06 mg/l

Growth rate; Exposure time: 72 h

The value mentioned relates to the active ingredient spirodiclofen.

No acute toxicity was observed at its limit of water solubility.

Biodegradability

Spirodiclofen:

Not rapidly biodegradable



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Koc	Spirodiclofen: Koc: 31097
Bioaccumulation	Spirodiclofen: Bioconcentration factor (BCF) 491 Does not bioaccumulate.
Mobility in soil	Spirodiclofen: Immobile in soil
Environmental precautions	Do not allow to get into surface water, drains and ground water. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not apply when weather conditions favor runoff or drift. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area. Apply this product as specified on the label.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product	Follow container label instructions for disposal of wastes generated during use in compliance with the product label. Dispose in accordance with all local, state/provincial and federal regulations.
Contaminated packaging	Triple rinse containers. Puncture container to avoid re-use. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning. If burned, stay out of smoke.

SECTION 14: TRANSPORT INFORMATION

TDG

UN number	3082
Labels	9
Packaging group	III
Marine pollutant	Marine pollutant
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (SPIRODICLOFEN)

49CFR

Not dangerous goods / not hazardous material

IMDG

UN number	3082
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (SPIRODICLOFEN SOLUTION)



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IATA

UN number	3082
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (SPIRODICLOFEN SOLUTION)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

Further Information	Exempt from regulation when transported by road or rail, in accordance with TDG Regulations 1.45.1. This exemption provides that this product does not require dangerous goods shipping documentation or safety marks when transported on land by road or rail.
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Freight Classification:	INSECTICIDES OR FUNGICIDES, N.O.I., OTHER THAN POISON
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SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

49CFR	Code of Federal Regulations, Title 49
ACGIH	US. ACGIH Threshold Limit Values
ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
N.O.S.	Not otherwise specified
NTP	US. National Toxicology Program (NTP) Report on Carcinogens
OECD	Organization for Economic Co-operation and Development
TDG	Transportation of Dangerous Goods
TWA	Time weighted average
UN	United Nations



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WHO World health organisation

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 1 Instability - 0 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1 Flammability - 1 Physical Hazard - 0 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: Revised according to the current Canadian WHMIS standard (WHMIS 2015).

Prepared by the HSE Department of CROWNBRIDGE MANAGEMENT L.P.

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