SAFETY DATA SHEET

CORTEVA AGRISCIENCE NEW ZEALAND LIMITED

Product name: Korvetto™ Herbicide **Issue Date**: 18.09.2023

CORTEVA AGRISCIENCE NEW ZEALAND LIMITED encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container. This Safety Data Sheet adheres to the standards and regulatory requirements of New Zealand and may not meet the regulatory requirements in other countries.

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Korvetto™ Herbicide
Identified uses: End use herbicide product

COMPANY IDENTIFICATION
CORTEVA AGRISCIENCE NEW ZEALAND LIMITED
Private Bag 2017
NEW PLYMOUTH 4342
NEW ZEALAND

Customer Information Number: 0800-803-939
NZCustomerservice@corteva.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: +64 6 751 2407
Local Emergency Contact: 0800 844 455

For medical advice, contact the New Zealand Poisons Information Centre:
0800 POISON (0800 764 766)
Transport Emergency Only Dial: 111

This SDS may not provide exhaustive guidance for all the GHS controls assigned to this substance. The NZ EPA website www.epa.govt.nz should be consulted for a full list of triggered controls and cited regulations.

2. HAZARDS IDENTIFICATION

Hazard classification
NEW ZEALAND HAZARDOUS SUBSTANCES CLASSIFICATION: Classified as hazardous according to criteria in the New Zealand Hazardous Substances (Minimum Degrees of Hazard) Notice 2017, and the Hazardous Substances (Classification) Notice 2017. Refer to Section 15 for EPA Approval Number.

GHS classifications:
Flammable liquid - Category 4
Eye irritation - Category 2
Specific target organ toxicity - repeated exposure (Respiratory system) - Category 2
Hazardous to soil organisms
Hazardous to the aquatic environment acute - Category 1
Hazardous to the aquatic environment chronic - Category 1

Signal word: **WARNING!**

Hazards
Combustible liquid.
Causes serious eye irritation.
May cause damage to organs (Kidney. Liver. Thyroid.) through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.
Very toxic to the soil environment.

Prevention
Read label before use.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Wear protective gloves/ protective clothing/ eye and face protection.
Do not breathe mist/vapour/spray.
Wash skin thoroughly after handling.
Avoid release to the environment.

Response
In case of fire: Use Water fog or fine spray; dry chemical fire extinguishers; carbon dioxide fire extinguishers or foam (Alcohol resistant foams (ATC type) are preferred).
Get medical advice if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/ attention.
Collect spillage.

Storage
Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal
Dispose of contents/ container to an approved waste disposal plant.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CASRN	Concentration
Clopyralid (ISO)	1702-17-6	12.2 %
Halauxifen-methyl	943831-98-9	0.5 %
Dipropylene glycol monomethyl ether	34590-94-8	25 – 30 %
Reaction mass of N,N-dimethyldecan-1-amide and N,N-dimethyloctanamide	Not available	20 – 25%
Benzenesulfonic acid, 4-C10-13- sec-alkyl derivs., compds. with 2- propanamine	84961-74-0	3 – 10%

4. FIRST AID MEASURES

Consult the National Poisons Information Centre (0800 POISON (0800 764 766)) or a doctor in every case of suspected chemical poisoning. Never give fluids or induce vomiting if a patient is unconscious or convulsing regardless of cause of injury. If breathing difficulties occur seek medical attention immediately.

Description of first aid measures
General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

Skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Suitable emergency safety shower facility should be available in work area.

Eye contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor or going for treatment.

5. FIREFIGHTING MEASURES

Hazchem code: ●3Z

Suitable extinguishing media: Water spray. Dry chemical. Carbon dioxide. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function but will be less effective. Water fog applied gently may be used as a blanket for fire extinguishment.

Unsuitable extinguishing media: Do not use direct water stream. May spread fire.

Special hazards arising from the substance or mixture
Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.

Unusual Fire and Explosion Hazards: Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is produced when product burns.

Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Consider feasibility of a controlled burn to minimize environment damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog applied gently may be used as a blanket for fire extinguishment. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire-fighting clothing (includes fire-fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7: Handling, for additional precautionary measures. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Use appropriate safety equipment. For additional information, refer to Section 8: Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12: Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Recovered material should be stored in a vented container. The vent must prevent the ingress of water as further reaction with spilled materials can take place which could lead to over-pressurization of the container. Keep in suitable, closed containers for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Neutralize with chalk, alkali solution or ammonia. Large spills: Contact Corteva Agriscience for clean-up assistance. See Section 13: Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep away from heat, sparks and flame. Keep out of reach of children. Do not swallow. Avoid breathing vapour or mist. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Keep container closed. Used with adequate ventilation. Containers, even those that have been emptied, can contain vapours. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Spills of these organic materials on hot fibrous insulations may lead to lowering of the auto-ignition temperatures possibly resulting in spontaneous combustion. See Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies. Do not store near acids or strong oxidizing agents.

This substance is subject to a requirement for an emergency management plan, secondary containment and signage, whenever it is held in quantities of 100 L or more, either alone or in aggregate with other hazardous substances. See Hazardous Substances Emergency Management and Identification Regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters: Exposure limits are listed below, if they exist:

Component	Regulation	Type of listing	Value/Notation
Clopyralid (ISO)	Dow IHG	TWA	10 mg/m^3
Dipropylene glycol monomethyl ether	Dow IHG	TWA – Skin absorption	10 ppm
	Dow IHG	STEL – Skin aabsorption	30 ppm
	NZ OEL	WES-STEL – Skin absorption	909 mg/m^3 150 ppm
	NZ OEL	WES-TWA - Skin	606 mg/m^3 100 ppm

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration
Dipropylene glycol monomethyl ether	34590-94-8				100 mg/g

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use chemical goggles.

Hand protection: Use chemical resistant gloves classified under standard AS/NZS 2161.10: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Neoprene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. When prolonged or frequently repeated contact may occur, a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to AS/NZS 2161.10) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to AS/NZS 2161.10) is recommended.

NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In misty atmospheres, use an approved particulate respirator
The following should be effective types of air-purifying respirators: Organic vapour cartridge with a particulate pre-filter.

Other Information: Selection and use of personal protective equipment should be in accordance with the recommendations in one or more of the relevant Australian/New Zealand Standards, including:
AS/NZS 1336: Eye and Face protection - Guidelines.
AS/NZS 1337: Personal eye protection - Eye and face protectors for occupational applications.
AS/NZS 1715: Selection, use and maintenance of respiratory protective equipment.
AS/NZS 2161: Occupational protective gloves.
AS/NZS 2210: Occupational protective footwear.
AS/NZS 4501: Occupational protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance - Physical state	Liquid.
- Colour	Yellow
Odour	Solvent
Odour Threshold	No data available
pH	2.45 *pH Electrode* (1% solution)
Melting point/range	Not applicable to liquids
Freezing point	No data available
Boiling point (760 mmHg)	No data available
Flash point	86.0 °C *PMCC, ASTM D93*
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	Not applicable to liquids
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapour Pressure	No data available
Relative Vapour Density (air = 1)	No data available
Relative Density (water = 1)	No data available
Water solubility	Emulsifies in water
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	232 °C *EC Method A15*
Decomposition temperature	No data available
Dynamic Viscosity	25.3 mPa.s at 20 °C *OECD 114*
Kinematic Viscosity	No data available
Explosive properties	Not explosive *EC Method A.14*
Oxidizing properties	No *EC Method A.21*
Liquid density	0.9805 g/ml at 20.0 °C *OECD 109*

Molecular weight	No data available
Surface tension	30.5 mN/m at25 °C *EC Method A5*

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.

Chemical stability: No decomposition if stored and applied as directed. Stable under normal conditions.

Possibility of hazardous reactions: Stable under recommended storage conditions.

Conditions to avoid: Some components of this product can decompose at elevated temperatures.

Incompatible materials: Avoid contact with: Strong oxidizers. Strong acids. Strong bases.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon monoxide. Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	:	LD50 (Rat, female): > 2,000 mg/kg Method: OECD Test Guideline 423 Symptoms: No deaths occurred at this concentration. Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 5.79 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Symptoms: No deaths occurred at this concentration. Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rat, male and female): > 2,000 mg/kg Method: OECD Test Guideline 402 Symptoms: No deaths occurred at this concentration. Assessment: The substance or mixture has no acute dermal toxicity

Components:

Clopyralid (ISO):

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 1 mg/l Exposure time: 4 h

		Test atmosphere: dust/mist Symptoms: No deaths occurred at this concentration., The LC50 value is greater than the Maximum Attainable Concentration. Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg Symptoms: No deaths occurred at this concentration. Assessment: The substance or mixture has no acute dermal toxicity

Halauxifen-methyl:

Acute oral toxicity	:	LD50 (Rat, female): > 5,000 mg/kg
Acute dermal toxicity	:	LD50 (Rat, male and female): > 5,000 mg/kg

Dipropylene glycol monomethyl ether:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 3.35 mg/l Exposure time: 7 h Test atmosphere: vapour Symptoms: No deaths occurred at this concentration. Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rabbit): 9,510 mg/kg

Reaction mass of N,N-dimethyldecan-1-amide and N,N-dimethyloctanamide:

Acute oral toxicity	:	LD50 (Rat): > 2,000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 3.551 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rat): > 2,000 mg/kg

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with 2-propanamine:

Acute oral toxicity	:	LD50 (Rat, female): > 2,000 mg/kg Assessment: The substance or mixture has no acute oral toxicity
Acute dermal toxicity	:	For similar material(s): LD50 (Rat, male and female): > 2,000 mg/kg Assessment: The substance or mixture has no acute dermal toxicity.

Skin corrosion/irritation

Product:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	Mild skin irritation

Components:

Dipropylene glycol monomethyl ether:

Species	:	Rabbit
Result	:	No skin irritation

Reaction mass of N,N-dimethyldecan-1-amide and N,N-dimethyloctanamide:

Species	:	Rabbit
Result	:	Skin irritation

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with 2-propanamine:

Result	:	Skin irritation

Serious eye damage/eye irritation

Product:

Species	:	Rabbit
Result	:	Eye irritation
Method	:	OECD Test Guideline 405

Components:

Clopyralid (ISO):

Species	:	Rabbit
Result	:	Corrosive

Dipropylene glycol monomethyl ether:

Species	:	Rabbit
Result	:	No eye irritation

Reaction mass of N,N-dimethyldecan-1-amide and N,N-dimethyloctanamide:

Species	:	Rabbit
Result	:	Corrosive

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with 2-propanamine:

Result	:	Eye irritation

Respiratory or skin sensitisation

Product:

Test Type	:	Local lymph node assay (LLNA)
Species	:	Mouse

Assessment	:	Does not cause skin sensitisation.
Method	:	OECD Test Guideline 429

Components:

clopyralid (ISO):

Species	:	Guinea pig
Assessment	:	Does not cause skin sensitisation.

Halauxifen-methyl:

Remarks	:	Did not demonstrate the potential for contact allergy in mice.
Remarks	:	For respiratory sensitization: No relevant data found.

Dipropylene glycol monomethyl ether:

Species	:	human
Result	:	Does not cause skin sensitisation.

Reaction mass of N,N-dimethyldecan-1-amide and N,N-dimethyloctanamide:

Species	:	Guinea pig
Assessment	:	For similar material(s): Does not cause skin sensitisation.
Remarks	:	

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with 2-propanamine:

Assessment	:	Does not cause skin sensitisation.
Remarks	:	Did not cause allergic skin reactions when tested in guinea pigs.
Remarks	:	For respiratory sensitization: No relevant data found.

Chronic toxicity

Germ cell mutagenicity

Components:

clopyralid (ISO):

Germ cell mutagenicity - Assessment	:	In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Halauxifen-methyl:

Germ cell mutagenicity - Assessment	:	In vitro genetic toxicity studies were negative.

Dipropylene glycol monomethyl ether:

Germ cell mutagenicity - Assessment	:	In vitro genetic toxicity studies were negative.

Reaction mass of N,N-dimethyldecan-1-amide and N,N-dimethyloctanamide:

Germ cell mutagenicity - Assessment	:	In vitro genetic toxicity studies were negative.

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with 2-propanamine:

Germ cell mutagenicity - Assessment	:	In vitro genetic toxicity studies were negative.

Carcinogenicity

Components:

clopyralid (ISO):

Carcinogenicity - Assessment	:	Did not cause cancer in laboratory animals.

Halauxifen-methyl:

Carcinogenicity - Assessment	:	For similar active ingredient(s). Halauxifen. Did not cause cancer in laboratory animals.

Dipropylene glycol monomethyl ether:

Carcinogenicity - Assessment	:	For similar material(s): Did not cause cancer in laboratory animals.

Reproductive toxicity

Components:

clopyralid (ISO):

Reproductive toxicity - Assessment	:	In animal studies, did not interfere with reproduction. Clopyralid caused birth defects in test animals, but only at greatly exaggerated doses that were severely toxic to the mothers. No birth defects were observed in animals given clopyralid at doses several times greater than those expected during normal exposure.

Halauxifen-methyl:

Reproductive toxicity - Assessment	:	For similar active ingredient(s). Halauxifen. In animal studies, did not interfere with reproduction. Has been toxic to the foetus in laboratory animals at doses toxic to the mother., Did not cause birth defects in laboratory animals.

Dipropylene glycol monomethyl ether:

Reproductive toxicity - Assessment	:	For similar material(s): In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. Did not cause birth defects or any other foetal effects in laboratory animals.

Reaction mass of N,N-dimethyldecan-1-amide and N,N-dimethyloctanamide:

Reproductive toxicity - Assessment	:	For similar material(s): Did not cause birth defects or any other foetal effects in laboratory animals.

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with 2-propanamine:

Reproductive toxicity - Assessment	:	Has been toxic to the foetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

STOT - single exposure

Product:

Exposure routes	:	Inhalation
Target Organs	:	Respiratory system
Assessment	:	May cause respiratory irritation.

Components:

clopyralid (ISO):

Assessment	:	Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Halauxifen-methyl:

Assessment	:	Available data are inadequate to determine single exposure specific target organ toxicity.

Dipropylene glycol monomethyl ether:

Assessment	:	Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Reaction mass of N,N-dimethyldecan-1-amide and N,N-dimethyloctanamide:

Exposure routes	:	Inhalation
Assessment	:	May cause respiratory irritation.

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with 2-propanamine:

Assessment	:	Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Repeated dose toxicity

Components:

Clopyralid (ISO):

Remarks	:	Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Halauxifen-methyl:

Remarks	:	In animals, effects have been reported on the following organs: Kidney. Liver. Thyroid.

Dipropylene glycol monomethyl ether:

Remarks	:	Symptoms of excessive exposure may be anaesthetic or narcotic effects; dizziness and drowsiness may be observed.

Reaction mass of N,N-dimethyldecan-1-amide and N,N-dimethyloctanamide:

Remarks	:	For similar material(s): Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with 2-propanamine:

Remarks	:	Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Aspiration toxicity

Product:

Based on physical properties, not likely to be an aspiration hazard.

Components:

clopyralid (ISO):

Based on physical properties, not likely to be an aspiration hazard.

Halauxifen-methyl:

Based on physical properties, not likely to be an aspiration hazard.

Dipropylene glycol monomethyl ether:

Based on physical properties, not likely to be an aspiration hazard.

Reaction mass of N,N-dimethyldecan-1-amide and N,N-dimethyloctanamide:

May be harmful if swallowed and enters airways.

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with 2-propanamine:

Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 22 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 80.0 mg/l Exposure time: 48 h Test Type: semi-static test Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	

Remarks: Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

ErC50 (Pseudokirchneriella subcapitata (green algae)): 41.6 mg/l
Exposure time: 72 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201

ErC50 (Lemna gibba): 27.0 mg/l
Exposure time: 7 d
Test Type: Growth inhibition
Method: OECD Test Guideline 221

ErC50 (Myriophyllum spicatum): 0.0938 mg/l
End point: Growth inhibition
Exposure time: 14 d

NOEC (Myriophyllum spicatum): 0.0063 mg/l
End point: Growth inhibition
Exposure time: 14 d

Toxicity to soil dwelling organisms : LC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg
Exposure time: 14 d
Method: OECD Test Guideline 207

Toxicity to terrestrial organisms : Remarks: Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

oral LD50 (Colinus virginianus (Bobwhite quail)): > 2000 mg/kg bodyweight.
Exposure time: 14 d
Method: OECD Test Guideline 223

contact LD50 (Apis mellifera (bees)): > 250 µg/bee
Exposure time: 48 h
Method: OECD Test Guideline 213

oral LD50 (Apis mellifera (bees)): > 129 µg/bee
Exposure time: 48 h
Method: OECD Test Guideline 213

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

Components:

clopyralid (ISO):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 99.9 mg/l
Exposure time: 96 h
Test Type: static test

		NOEC (Lepomis macrochirus (Bluegill sunfish)): > 102 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 99 mg/l Exposure time: 48 h Test Type: static test
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 33.1 mg/l End point: Growth rate inhibition Exposure time: 96 h ErC50 (Myriophyllum spicatum): > 3 mg/l Exposure time: 14 d NOEC (Myriophyllum spicatum): 0.0089 mg/l Exposure time: 14 d
Toxicity to fish (Chronic toxicity)	:	NOEC (Pimephales promelas (fathead minnow)): 10.8 mg/l End point: Other Exposure time: 34 d Method: OECD Test Guideline 210
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 17 mg/l Exposure time: 21 d Test Type: static test Method: OECD Test Guideline 211 or Equivalent
M-Factor (Chronic aquatic toxicity)	:	10
Toxicity to microorganisms	:	(Bacteria): > 100 mg/l
Toxicity to soil dwelling organisms	:	LC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg Exposure time: 14 d End point: survival
Toxicity to terrestrial organisms	:	oral LD50 (Anas platyrhynchos (Mallard duck)): 1465 mg/kg bodyweight. dietary LC50 (Anas platyrhynchos (Mallard duck)): > 5000 mg/kg diet. oral LD50 (Apis mellifera (bees)): > 100 micrograms/bee Exposure time: 48 h End point: mortality contact LD50 (Apis mellifera (bees)): > 98.1 micrograms/bee

Ecotoxicology Assessment

Acute aquatic toxicity	:	Toxic to aquatic life.
Chronic aquatic toxicity	:	Very toxic to aquatic life with long lasting effects.

Halauxifen-methyl:

Toxicity to fish	:	Remarks: Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species). LC50 (Rainbow trout (Oncorhynchus mykiss)): 2.01 mg/l Exposure time: 96 h Test Type: static test LC50 (Pimephales promelas (fathead minnow)): > 3.22 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 2.12 mg/l Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 3.0 mg/l Exposure time: 96 h ErC50 (Myriophyllum spicatum): 0.000393 mg/l End point: Growth rate inhibition Exposure time: 14 d
M-Factor (Acute aquatic toxicity)	:	1,000
Toxicity to fish (Chronic toxicity)	:	NOEC (Pimephales promelas (fathead minnow)): 0.259 mg/l End point: Other Test Type: flow-through test NOEC (Cyprinodon variegatus (sheepshead minnow)): 0.00272 mg/l Exposure time: 36 d Test Type: flow-through test
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0.484 mg/l End point: number of offspring Exposure time: 21 d Test Type: semi-static test
M-Factor (Chronic aquatic toxicity)	:	1,000
Toxicity to microorganisms	:	EC50 (activated sludge): > 981 mg/l Exposure time: 1 d
Toxicity to soil dwelling organisms	:	LC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg Exposure time: 14 d End point: mortality
Toxicity to terrestrial organisms	:	Remarks: Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg)., Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

dietary LC50 (Colinus virginianus (Bobwhite quail)): > 5,620 ppm
Exposure time: 5 d
Method: Other guidelines

dietary LC50 (Anas platyrhynchos (Mallard duck)): > 5,620 ppm
Exposure time: 5 d
Method: Other guidelines

oral LD50 (Colinus virginianus (Bobwhite quail)): > 2250 mg/kg bodyweight.
End point: mortality

contact LD50 (Apis mellifera (bees)): > 98.1 µg/bee
Exposure time: 48 h
End point: mortality

oral LD50 (Apis mellifera (bees)): > 108 µg/bee
Exposure time: 48 h
End point: mortality

Ecotoxicology Assessment

Acute aquatic toxicity	:	Very toxic to aquatic life.
Chronic aquatic toxicity	:	Very toxic to aquatic life with long lasting effects.

Dipropylene glycol monomethyl ether:

Toxicity to fish	:	LC50 (Poecilia reticulata (guppy)): > 1,000 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203 or Equivalent
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia magna (Water flea)): 1,919 mg/l Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202 or Equivalent LC50 (Crangon crangon (shrimp)): > 1,000 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 202 or Equivalent LC50 (copepod Acartia tonsa): 2,070 mg/l Exposure time: 48 h Test Type: static test Method: ISO TC147/SC5/WG2
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 969 mg/l End point: Biomass Exposure time: 96 h Test Type: static test

		Method: OECD Test Guideline 201 or Equivalent
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): > 0.5 mg/l Exposure time: 22 d Test Type: flow-through test Method: OECD Test Guideline 211 or Equivalent LOEC (Daphnia magna (Water flea)): > 0.5 mg/l Exposure time: 22 d Test Type: flow-through test Method: OECD Test Guideline 211 or Equivalent MATC (Maximum Acceptable Toxicant Level) (Daphnia magna (Water flea)): > 0.5 mg/l Exposure time: 22 d Test Type: flow-through test Method: OECD Test Guideline 211 or Equivalent
Toxicity to microorganisms	:	EC10 (Pseudomonas putida): 4,168 mg/l Exposure time: 18 h

Ecotoxicology Assessment

Chronic aquatic toxicity	:	This product has no known ecotoxicological effects.

Reaction mass of N,N-dimethyldecan-1-amide and N,N-dimethyloctanamide:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): 14.8 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia magna (Water flea)): 7.7 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 16.06 mg/l Exposure time: 72 h

Ecotoxicology Assessment

Acute aquatic toxicity	:	Toxic to aquatic life.

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with 2-propanamine:

Toxicity to fish	:	Remarks: Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested). LC50 (Fish): > 1 - 10 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 7.1 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Algae): > 10 - 300 mg/l Exposure time: 48 h

Toxicity to fish (Chronic toxicity)	:	NOEC (Rainbow trout (Salmo gairdneri)): 0.23 mg/l

Persistence and degradability

Components:

clopyralid (ISO):

Biodegradability	:	Biodegradation: 5 - 10 % Exposure time: 28 d Method: OECD Test Guideline 301B or Equivalent Remarks: 10-day Window: Fail
Biochemical Oxygen Demand (BOD)	:	0 mg/g 0 % Incubation time: 20 d
Chemical Oxygen Demand (COD)	:	0.73 kg/kg
ThOD	:	0.71 kg/kg
Stability in water	:	Test Type: Hydrolysis Method: Stable
Photodegradation	:	Test Type: Half-life (direct photolysis)

Halauxifen-methyl:

Biodegradability	:	Result: Not biodegradable Remarks: For similar active ingredient(s). Halauxifen. Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. Biodegradation: 7.7 % Exposure time: 28 d Method: OECD Test Guideline 310 or Equivalent Remarks: 10-day Window: Not applicable

Dipropylene glycol monomethyl ether:

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 75 % Exposure time: 28 d Remarks: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability). aerobic Method: OECD Test Guideline 301F or Equivalent Remarks: 10-day Window: Pass
Biochemical Oxygen Demand (BOD)	:	0 % Incubation time: 5 d

0 %
Incubation time: 10 d

31.6 %
Incubation time: 20 d

Chemical Oxygen Demand (COD)	:	2.02 kg/kg Method: Dichromate
ThOD	:	2.06 kg/kg
Photodegradation	:	Test Type: Half-life (indirect photolysis) Sensitiser: OH radicals Rate constant: 5.00E-05 cm3/s Method: Estimated.

Reaction mass of N,N-dimethyldecan-1-amide and N,N-dimethyloctanamide:

Biodegradability	:	Remarks: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Result: Readily biodegradable. Biodegradation: > 80 % Exposure time: 28 d Method: OECD Test Guideline 301F or Equivalent Remarks: 10-day Window: Pass
Chemical Oxygen Demand (COD)	:	2.890 mg/g

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with 2-propanamine:

Biodegradability	:	Remarks: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Result: Readily biodegradable. Biodegradation: 87.35 % Exposure time: 28 d Method: OECD Test Guideline 301B or Equivalent

Bioaccumulative potential

Components:

clopyralid (ISO):

Bioaccumulation	:	Species: Fish Bioconcentration factor (BCF): < 1 Method: Measured
Partition coefficient: n-octanol/water	:	log Pow: -2.63 Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Halauxifen-methyl:

Bioaccumulation	:	Species: Lepomis macrochirus (Bluegill sunfish) Bioconcentration factor (BCF): 233 Exposure time: 42 d Temperature: 21.8 °C Concentration: 0.00194 mg/l
Partition coefficient: n-octanol/water	:	log Pow: 3.76 Remarks: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Dipropylene glycol monomethyl ether:

Partition coefficient: n-octanol/water	:	log Pow: 1.01 Method: Measured Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Reaction mass of N,N-dimethyldecan-1-amide and N,N-dimethyloctanamide:

Partition coefficient: n-octanol/water	:	log Pow: < 3.44 (20 °C) Remarks: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with 2-propanamine:

Partition coefficient: n-octanol/water	:	log Pow: 0.51 (20 °C) Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Mobility in soil

Components:

clopyralid (ISO):

Distribution among environmental compartments	:	Koc: 4.9 Remarks: Potential for mobility in soil is very high (Koc between 0 and 50).
Stability in soil	:	Test Type: aerobic degradation Dissipation time: 71 d Method: Estimated.

Halauxifen-methyl:

Distribution among environmental compartments	:	Koc: 5684 Remarks: Expected to be relatively immobile in soil (Koc > 5000).

Dipropylene glycol monomethyl ether:

Distribution among environmental compartments	:	Koc: 0.28 Method: Estimated. Remarks: Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process. Potential for mobility in soil is very high (Koc between 0 and 50).

Reaction mass of N,N-dimethyldecan-1-amide and N,N-dimethyloctanamide:

Distribution among environmental compartments	:	Koc: 527.3 Remarks: Potential for mobility in soil is low (Koc between 500 and 2000).

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with 2-propanamine:

Distribution among environmental compartments	:	Remarks: No relevant data found.

Other adverse effects

Components:

clopyralid (ISO):

Results of PBT and vPvB assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).
Ozone-Depletion Potential	:	Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Halauxifen-methyl:

Results of PBT and vPvB assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).
Ozone-Depletion Potential	:	Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Dipropylene glycol monomethyl ether:

Results of PBT and vPvB assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).
Ozone-Depletion Potential	:	Regulation: (Update: 11/22/2010 KS 11/25/2010 LMK) Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Reaction mass of N,N-dimethyldecan-1-amide and N,N-dimethyloctanamide:

Results of PBT and vPvB assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).
Ozone-Depletion Potential	:	Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with 2-propanamine:

Results of PBT and vPvB assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).
Ozone-Depletion Potential	:	Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

13. DISPOSAL CONSIDERATIONS

Disposal methods: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

Waste handling, treatment and disposal practices must be in compliance with the New Zealand Hazardous Substances (Disposal) Notice 2017. Additional local requirements may be applicable in accordance with planning controls under the Resource Management Act. Regulations concerning waste management may vary in different locations.

14. TRANSPORT INFORMATION

PUBLIC PASSENGER VEHICLE TRANSPORT: To be transported ONLY in the sealed original container. Maximum volume permitted to be transported in a passenger service vehicle: 1 Litre.

International Regulations

UNRTDG

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Halauxifen-methyl, Clopyralid)
Class	:	9
Packing group	:	III
Labels	:	9
Environmentally hazardous	:	no

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Halauxifen-methyl, Clopyralid)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous
Packing instruction (cargo aircraft)	:	964

Packing instruction (passenger aircraft)	:	964

IMDG-Code

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Halauxifen-methyl, Clopyralid)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	Yes (Halauxifen-methyl, Clopyralid)
Remarks	:	Stowage category A

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

Not applicable for product as supplied.

National Regulations

NZS 5433

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Halauxifen-methyl, Clopyralid)
Class	:	9
Packing group	:	III
Labels	:	9
Hazchem Code	:	•3Z
Marine pollutant	:	No

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. REGULATORY INFORMATION

ACVMG APPROVAL NUMBER: P9554
EPA Approval Code: HSR101282

ADVICE TO PRODUCT USERS REGARDING GHS CONTROLS: Users of this product should make reference to the New Zealand Hazardous Substances and New Organisms Act and Regulations, and the Health and Safety at Work Act for relevant risk management controls. Additional local requirements may be applicable in accordance with planning controls under the Resource Management Act. Refer to Environment Protection Authority for more information http://www.epa.govt.nz

16. OTHER INFORMATION

Revision
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DAS code: GF-3488
Sections amended:

Legend

ACGIH	American Conference of Governmental Industrial Hygienists. Threshold Limit Values
Dow IHG	Dow Industrial Hygiene Guideline
NZ OEL	New Zealand. Workplace Exposure Standards for Atmospheric Contaminants
SKIN	Absorbed via skin
STEL	Short term exposure limit
TWA	Time weighted average
WES-STEL	Workplace Exposure Standard - Short-Term Exposure Limit
WES-TWA	Workplace Exposure Standard - Time Weighted average

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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.