COLLAGE®

Version 2.0
Revision Date 24.03.2020 Ref. 130000107347

This Safety Data Sheet adheres to the standards and regulatory requirements of the Republic of Ireland and may not meet the regulatory requirements of other countries.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : COLLAGE®
Synonyms : B12989982, DPX-Q1X49 64 g/L OD

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

Use of the Substance/Mixture : Herbicide

1.3. Details of the supplier of the safety data sheet

Company

CHEMINOVA A/S, a subsidiary of FMC Corporation
Thyborønvej 78
DK-7673 Harboøre
Denmark
SDS.Ronland@fmc.com

1.4. Emergency telephone numbers

Medical emergencies: +353 1 837 9964 Ireland (Republic)
For fire, leak, spill or other accident emergencies:
U.S.A.: +1 800 / 424 9300 (CHEMTREC)
All other countries: +1 703 / 741 5970 (CHEMTREC - Collect)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Skin corrosion/irritation, Category 2	H315: Causes skin irritation.
Skin sensitisation, Sub-category 1B	H317: May cause an allergic skin reaction.
Acute aquatic toxicity, Category 1	H400: Very toxic to aquatic life.
Chronic aquatic toxicity, Category 1	H410: Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Warning	
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H410	Very toxic to aquatic life with long lasting effects.
Special labelling of certain substances and mixtures	EUH401: To avoid risks to human health and the environment, comply with the instructions for use.**,**
P261	Avoid breathing spray.
P280	Wear protective gloves/ protective clothing.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P391	Collect spillage.
P501	Dispose of contents to an approved incineration plant in accordance with local, regional and national legislations.
P501	Dispose of container to a waste disposal plant in accordance with local, regional and national legislations.
SP 1	Do not contaminate water with the product or its container (Do not clean application equipment near surface water/Avoid contamination via drains from farmyards and roads).

2.3. Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).
This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Registration number	Classification according to Regulation (EU) 1272/2008 (CLP)	Concentration (% w/w)
Nicosulfuron (CAS-No.111991-09-4)		
	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	6 %
Thifensulfuron methyl (CAS-No.79277-27-3)		
	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	0.4 %

The above products are compliant to REACH registration obligations; Registration number(s) may not be provided because substance(s) are exempted, not yet registered under REACH or are registered under another regulatory process (biocide uses, plant protection products), etc.

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice : Never give anything by mouth to an unconscious person.

Inhalation : Move to fresh air. Artificial respiration and/or oxygen may be necessary. Consult a physician after significant exposure.

Skin contact : Take off contaminated clothing and shoes immediately. Wash off immediately with soap and plenty of water. In the case of skin irritation or allergic reactions see a physician. Wash contaminated clothing before re-use.

Eye contact : If easy to do, remove contact lens, if worn. Hold eye open and rinse slowly and gently with water for 15-20 minutes. If eye irritation persists, consult a specialist.

Ingestion : DO NOT induce vomiting unless directed to do so by a physician or poison control center. Obtain medical attention. If victim is conscious: Rinse mouth with water.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms	:	No cases of human intoxication are known and the symptoms of experimental intoxication are not known.

4.3. Indication of any immediate medical attention and special treatment needed

Treatment	:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	:	Water spray, Dry chemical, Foam, Carbon dioxide (CO_2)
Extinguishing media which shall not be used for safety reasons	:	High volume water jet, (contamination risk)

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Hazardous decomposition products formed under fire conditions. Carbon dioxide (CO_2) Nitrogen oxides (NO_x)

5.3. Advice for firefighters

Special protective equipment for firefighters	:	Wear full protective clothing and self-contained breathing apparatus.
Further information	:	Prevent fire extinguishing water from contaminating surface water or the ground water system. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
	:	(on small fires) If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers/tanks with water spray.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Control access to area. Use personal protective equipment. Keep people away from and upwind of spill/leak. Take precautionary measures against static discharges. Refer to protective measures listed in sections 7 and 8.

6.2. Environmental precautions

Environmental precautions	:	Use appropriate container to avoid environmental contamination. Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained. If the spill area is porous, the contaminated material must be

collected for subsequent treatment or disposal. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3. Methods and materials for containment and cleaning up

Methods for cleaning up	:	Clean-up methods - small spillage Prevent further leakage or spillage. Soak up with inert absorbent material. Shovel into suitable container for disposal. Clean-up methods - large spillage Prevent further leakage or spillage. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Large spills should be collected mechanically (remove by pumping) for disposal. Collect leaking liquid in sealable (metal/plastic) containers. Collect and contain contaminated absorbent and dike material for disposal.
Other information	:	Never return spills in original containers for re-use. Dispose of in accordance with local regulations.

6.4. Reference to other sections

For personal protection see section 8., For disposal instructions see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling	:	Use only according to our recommendations. Wear personal protective equipment. For personal protection see section 8. Use only clean equipment. Provide adequate ventilation. Do not breathe vapours or spray mist. When opening containers, avoid breathing vapours that may be emanating. Prepare the working solution as given on the label(s) and/or the user instructions. Use prepared working solution as soon as possible - Do not store. To avoid spills during handling keep bottle on a metal tray. Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use. Never return unused material to storage receptacle. Avoid exceeding the given occupational exposure limits (see section 8).
Advice on protection against fire and explosion	:	Keep away from heat and sources of ignition. Take measures to prevent the build up of electrostatic charge.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Store in original container. Keep in properly labelled containers. Keep tightly closed in a dry, cool and well-ventilated place. Store in a place accessible by authorized persons only. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children.
Advice on common storage	:	No special restrictions on storage with other products.
Other data	:	Stable under recommended storage conditions.

7.3. Specific end use(s)

Plant protection products subject to Regulation (EC) No 1107/2009.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

If sub-section is empty then no values are applicable.

8.2. Exposure controls

Engineering measures	:	Ensure adequate ventilation, especially in confined areas. Use sufficient ventilation to keep employee exposure below recommended limits.
Eye protection	:	Safety glasses with side-shields conforming to EN166
Hand protection	:	Material: Nitrile rubber Glove thickness: 0.3 mm Glove length: Standard glove type. Protection index: Class 6 Wearing time: 8 h The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Gloves must be inspected prior to use. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Gauntlets shorter than 35 cm long shall be worn under the combination sleeve. Before removing gloves clean them with soap and water.
Skin and body protection	:	Manufacturing and processing work: Full protective clothing Type 6 (EN 13034) Mixer and loaders must wear: Full protective clothing Type 6 (EN 13034) Rubber apron Nitrile rubber boots (EN 13832-3 / EN ISO 20345). Spray application - outdoor: Tractor / sprayer with hood: No personal body protection normally required. Tractor / sprayer without hood: Full protective clothing Type 4 (EN 14605) Nitrile rubber boots (EN 13832-3 / EN ISO 20345). When exceptional circumstances require an access to the treated area before the end of re-entry periods, wear full protective clothing Type 6 (EN 13034), nitrile rubber gloves class 3 (EN 374) and nitrile rubber boots (EN 13832-3 / EN ISO 20345). To optimize the ergonomy it may be recommended to use cotton underwear when wearing some fabrics. Take advice from supplier. Garment materials that are resistant to both water vapour and air will maximise wearing comfort. Materials should be robust to maintain the integrity and barrier in use.

The permeation resistance of the fabric must be verified independently of the « type » protection recommended, to ensure an appropriate performance level of the material adequate to the corresponding agent and type of exposure.

Protective measures	:	The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. All chemical protective clothing should be visually inspected prior to use. Clothing and gloves should be replaced in case of chemical or physical damage or if contaminated. Only protected handlers may be in the area during application.
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice. Regular cleaning of equipment, work area and clothing. Store personal protection equipment in a clean location away from the work area. Keep working clothes separately. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product. Remove clothing/PPE immediately if material gets inside. For environmental protection remove and wash all contaminated protective equipment before re-use. Dispose of rinse water in accordance with local and national regulations.
Respiratory protection	:	Manufacturing and processing work: Half mask with vapour filter A1 (EN 141) Mixer and loaders must wear: Half mask with vapour filter A1 (EN 141) Spray application - outdoor: Tractor / sprayer with hood: No personal respiratory protective equipment normally required. Tractor / sprayer without hood: Half mask with a particle filter FFP1 (EN149)

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	: liquid
Colour	: brown
Odour	: oily
Odour Threshold	: not determined
pH	: 4.9 at 10 g/l
Melting point/range	: Not applicable
Boiling point/boiling range	: 105 °C
Flash point	: > 105 °C
Flammability (solid, gas)	: The product is not flammable.

Thermal decomposition	: Not available for this mixture.
Auto-ignition temperature	: 260 °C , Test Type :Auto-ignition temperature
Oxidizing properties	: The product is not oxidizing.
Explosive properties	: Not explosive
Lower explosion limit/ lower flammability limit	: Not available for this mixture.
Upper explosion limit/ upper flammability limit	: Not available for this mixture.
Vapour pressure	: Not available for this mixture.
Relative density	: 0.992
Water solubility	: dispersible
Partition coefficient: n-octanol/water	: Not applicable
Viscosity, dynamic	: 270 mPa.s , 25 rpm
	: 214 mPa.s , 50 rpm
	: 177 mPa.s , 100 rpm
Relative vapour density	: Not available for this mixture.
Evaporation rate	: Not available for this mixture.

9.2. Other information

Phys.-chem./other information	: No other data to be specially mentioned.

SECTION 10: Stability and reactivity

10.1. Reactivity	: No hazards to be specially mentioned.
10.2. Chemical stability	: The product is chemically stable under recommended conditions of storage, use and temperature.
10.3. Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use. Polymerization will not occur. No decomposition if stored and applied as directed.
10.4. Conditions to avoid	: Protect from frost. To avoid thermal decomposition, do not overheat.
10.5. Incompatible materials	: No materials to be especially mentioned.
10.6. Hazardous decomposition products	: No materials to be especially mentioned.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity

LD50 / Rat female : > 5,000 mg/kg
Method: OECD Test Guideline 425
(Data on the product itself) Information source: Internal study report

Acute inhalation toxicity

LC50 / 4 h Rat male and female : > 3.47 mg/l
Method: OECD Test Guideline 403
(Data on the product itself) Information source: Internal study report

Acute dermal toxicity

LD50 / Rat male and female : > 5,000 mg/kg
Method: OECD Test Guideline 402
(Data on the product itself) Information source: Internal study report

Skin irritation

Rabbit
Result: Irritating to skin.
Method: OECD Test Guideline 404
Exposure time 72 h
(Data on the product itself) Information source: Internal study report

Eye irritation

Rabbit
Result: No eye irritation
Method: OECD Test Guideline 405
Exposure time 72 h
(Data on the product itself) Information source: Internal study report

Sensitisation

Guinea pig Maximisation Test (GPMT)
Result: Causes sensitisation.
Method: OECD Test Guideline 406
(Data on the product itself) Information source: Internal study report

Repeated dose toxicity

- Nicosulfuron
  Oral Mouse
  Exposure time: 90 d
  NOAEL: 300 mg/kg
  No toxicologically significant effects were found.

  Oral Mouse
  Exposure time: 28 d

No toxicologically significant effects were found.

Oral Rat
Exposure time: 90 d
No toxicologically significant effects were found.

- Thifensulfuron methyl
  The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.

  Oral - feed multiple species
  Reduced body weight gain

  Oral - feed Rat
  Increase in blood urea nitrogen, altered hematology

  Oral Rat
  Exposure time: 28 d
  NOAEL: 529 mg/kg
  No adverse effect has been observed in chronic toxicity tests.

Mutagenicity assessment

- Nicosulfuron
  Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

- Thifensulfuron methyl
  Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects.

Carcinogenicity assessment

- Nicosulfuron
  Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects.

- Thifensulfuron methyl
  Animal testing did not show any carcinogenic effects.

Toxicity to reproduction assessment

- Nicosulfuron
  No toxicity to reproduction Animal testing showed no reproductive toxicity.

- Thifensulfuron methyl
  No toxicity to reproduction Animal testing showed no reproductive toxicity.

Assessment teratogenicity

- Nicosulfuron
  Did not show teratogenic effects in animal experiments.

- Thifensulfuron methyl

Did not show teratogenic effects in animal experiments. Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish

static test / LC50 / 96 h / Oncorhynchus mykiss (rainbow trout): > 100 mg/l
Method: OECD Test Guideline 203
(Data on the product itself) Information source: Internal study report

Toxicity to aquatic plants

static test / ErC50 / 96 h / Pseudokirchneriella subcapitata (green algae): > 120 mg/l
Method: OECD Test Guideline 201
(Data on the product itself) Information source: Internal study report

Static renewal test / EC50 / 7 d / Lemna gibba (duckweed): 0.036 mg/l
Method: OECD Test Guideline 221
(Data on the product itself) Information source: Internal study report

Toxicity to aquatic invertebrates

static test / LC50 / 48 h / Daphnia magna (Water flea): > 100 mg/l
Method: OECD Test Guideline 202
(Data on the product itself) Information source: Internal study report

Toxicity to soil dwelling organisms

LC50 / 14 d / Eisenia fetida (earthworms): > 1,000 mg/kg
Method: OECD Test Guideline 207
(Data on the product itself) Information source: Internal study report

Toxicity to other organisms

LD50 / 48 h / Apis mellifera (bees): > 199.55 µg/b
Method: OECD Test Guideline 213
Oral (Data on the product itself) Information source: Internal study report

LD50 / 48 h / Apis mellifera (bees): > 100 µg/b
Method: OECD Test Guideline 214
Contact (Data on the product itself) Information source: Internal study report

Chronic toxicity to fish

- Thifensulfuron methyl
  NOEC / 21 d / Oncorhynchus mykiss (rainbow trout): > 250 mg/l

  NOEC / 62 d / Oncorhynchus mykiss (rainbow trout): 10.6 mg/l

Chronic toxicity to aquatic Invertebrates

- Thifensulfuron methyl
  NOEC / 28 d / Americamysis bahia (mysid shrimp): 7.93 mg/l

  EC50 / 21 d / Daphnia magna (Water flea): > 340 mg/l
  Information source: Internal study report

  NOEC / 21 d / Daphnia magna (Water flea): > 340 mg/l

12.2. Persistence and degradability

Biodegradability

Not readily biodegradable. Estimation based on data obtained on active ingredient.

12.3. Bioaccumulative potential

Bioaccumulation

Does not bioaccumulate. Estimation based on data obtained on active ingredient.

12.4. Mobility in soil

Mobility in soil

Under actual use conditions the product has a low potential of mobility in soil.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment
This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT). / This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

12.6. Other adverse effects

Additional ecological information

See product label for additional application instructions relating to environmental precautions.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product	:	In accordance with local and national regulations. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. Do not contaminate ponds, waterways or ditches with chemical or used container.
Contaminated packaging	:	Do not re-use empty containers.

SECTION 14: Transport information

ADR

14.1.	UN number:	3082
14.2.	UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Nicosulfuron, Thifensulfuron-methyl)
14.3.	Transport hazard class(es):	9
14.4.	Packing group:	III
14.5.	Environmental hazards:	Environmentally hazardous
14.6.	Special precautions for user:	
	Tunnel restriction code:	(E)

IATA_C

14.1.	UN number:	3082
14.2.	UN proper shipping name:	Environmentally hazardous substance, liquid, n.o.s. (Nicosulfuron, Thifensulfuron-methyl)
14.3.	Transport hazard class(es):	9
14.4.	Packing group:	III
14.5.	Environmental hazards :	For further information see Section 12.
14.6.	Special precautions for user:	

DuPont internal recommendations and transport guidance: ICAO / IATA cargo aircraft only

IMDG

14.1.	UN number:	3082
14.2.	UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Nicosulfuron, Thifensulfuron-methyl)
14.3.	Transport hazard class(es):	9
14.4.	Packing group:	III
14.5.	Environmental hazards :	Marine pollutant
14.6.	Special precautions for user:	

no data available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

SECTION 15: Regulatory information

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

no data available

15.2. Chemical Safety Assessment

A Chemical Safety Assessment is not required for this/these products
The mixture is registered as a plant protection product under Regulation (EC) No. 1107/2009.
Refer to the label for exposure assessment information.

SECTION 16: Other information

Full text of H-Statements referred to under section 3.

H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
Other information	professional use

Abbreviations and acronyms

ADR	European Agreement concerning the International Carriage of Dangerous Goods by

	Road
ATE	Acute toxicity estimate
CAS-No.	Chemical Abstracts Service number
CLP	Classification, Labelling and Packaging
EbC50	Concentration at which 50% reduction of biomass is observed
EC50	Median effective concentration
EN	European Norm
EPA	Environmental Protection Agency
ErC50	Concentration at which a 50% inhibition of growth rate is observed
EyC50	Concentration at which 50 % inhibition of yield is observed
IATA_C	International Air Transport Association (Cargo)
IBC	International Bulk Chemical Code
ICAO	International Civil Aviation Organization
ISO	International Standard Organization
IMDG	International Maritime Dangerous Goods
LC50	Median Lethal Concentration
LD50	Median Lethal Dose
LOEC	Lowest Observed Effect Concentration
LOEL	Lowest observed effect level
MARPOL	International Convention for the Prevention of Marine Pollution from Ships
n.o.s.	Not Otherwise Specified
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No observed adverse effect level
NOEC	No Observed Effect Concentration
NOEL	No Observed Effect Level
OECD	Organisation for Economic Co-operation and Development
OPPTS	Office of Prevention, Pesticides and Toxic Substances
PBT	Persistent, Bioaccumulative and Toxic
STEL	Short term exposure limit
TWA	Time Weighted Average (TWA):
vPvB	very Persistent and very Bioaccumulative

Further information

Take notice of the directions of use on the label., Before use read FMC's safety information. ®

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Significant change from previous version is denoted with a double bar.

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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The above information relates only to the specific material(s) designated herein and may not be valid for such material(s) used in combination with any other materials or in any process or if the material is altered or processed, unless specified in the text.