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www.fmc.com
CVR No. DK 12 76 00 43

SAFETY DATA SHEET

NOMATE CM

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

1.1. **Product identifier** ..... **NOMATE CM**
Contains (E,E)-8,10-dodecadien-1-ol

1.2. **Relevant identified uses of the substance or mixture and uses advised against** ..... Can be used as mating disruptant only.

1.3. **Details of the supplier of the safety data sheet**

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

1.4. **Emergency telephone number**

Medical emergencies:

Austria: +43 1 406 43 43
Belgium: +32 70 245 245
Bulgaria: +359 2 9154 409
Cyprus: 1401
Czech Republic: +420 224 919 293
+420 224 915 402
Denmark: +45 82 12 12 12
England and Wales: 111
Estonia: +372 7943500
France: +33 (0) 1 45 42 59 59
Finland: +358 9 471 977
Greece: 30 210 77 93 777
Hungary: +36 80 20 11 99
Ireland (Republic): +353 1 837 9964
Italy: +39 02 6610 1029
Latvia: +371 670 42 473
112
Lithuania: +370 523 62052
+370 687 53378
Luxembourg: +352 8002 5500
Netherlands: +31 30 274 88 88
Norway: +47 22 591300
Poland: +48 22 619 66 54
+48 22 619 08 97
Portugal: 808 250 143 (in Portugal only)
+351 21 330 3284
Romania: +40 21318 3606
Scotland: +8454 24 24 24
Slovakia: +421 2 54 77 4 166
Slovenia: +386 41 650 500
South Africa: +27 83 123 3911 (Bateleur Emergency Response Co.)
Spain: +34 91 562 04 20
Sweden: +46 08-331231
112
Switzerland: 145
Turkey: 114
U.S.A. & Canada: +1 800 / 331 3148 (ProPharma)
All other countries: +1 651 / 632 6793 (ProPharma - Collect)

For fire, leak, spill or other accident emergencies:

U.S.A.: +1 800 / 424 9300 (CHEMTREC)
All other countries: +1 703 / 527 3887 (CHEMTREC - Collect)

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SECTION 2: HAZARDS IDENTIFICATION

2.1. **Classification of the substance or mixture**

Sensitisation – skin: Category 1 (H317)
Hazards to the aquatic environment, chronic: Category 2 (H411)

WHO classification ..... Class U (unlikely to present acute hazard in normal use).

Health hazards ..... The product may cause allergic sensitisation.

Environmental hazards ..... The product is expected to be toxic to aquatic organisms.

2.2. **Label elements**

According to EU Reg. 1272/2008 as amended

Product identifier ..... NoMate CM
Contains (E,E)-8,10-dodecadien-1-ol

Hazard pictograms (GHS07, GHS09)

Signal word ..... Warning

Hazard statements
H317 ..... May cause an allergic skin reaction.
H411 ..... Toxic to aquatic life with long lasting effects.

Supplementary hazard statement
EUH401 ..... To avoid risks to human health and the environment, comply with the instructions of use.

Precautionary statements
P261 ..... Avoid breathing dust or vapours.
P280 ..... Wear protective gloves.
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+P364 ..... Take off contaminated clothing and wash it before reuse.
P501 ..... Dispose of contents/container as hazardous waste.

2.3. **Other hazards** ..... None of the ingredients in the product meets the criteria for being PBT or vPvB.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. **Substances** ..... The product is a mixture, not a substance.

3.2. **Mixtures** See section 16 for full text of hazard statements.

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Reportable ingredient	Content (% w/w)	CAS no.	EC no. (EINECS no.)	Classification
(E,E)-8,10-Dodecadien-1-ol	10	33956-49-9	251-761-2	Skin Irrit. 2 (H315) Skin Sens. 1 (H317) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)

SECTION 4: FIRST AID MEASURES

4.1. **Description of first aid measures**

Inhalation ..... If experiencing any discomfort, immediately remove from exposure. Light cases: Keep person under surveillance. Get medical attention immediately if symptoms develop. Serious cases: Get medical attention immediately or call for an ambulance.

Skin contact ..... Immediately remove contaminated clothing and footwear. Flush skin with water. Wash with water and soap. See physician if any symptom develops.

Eye contact ..... Immediately rinse eyes with much water or eyewash solution, occasionally opening eyelids, until no evidence of chemical remains. Remove contact lenses after a few minutes and rinse again. See physician if irritation persists.

Ingestion ..... Inducing vomiting is not recommended. Rinse mouth and drink water or milk. If vomiting does occur, rinse mouth and drink fluids again. Call a doctor or get medical attention immediately.

4.2. **Most important symptoms and effects, both acute and delayed** Possibly allergic reactions.

4.3. **Indication of any immediate medical attention and special treatment needed** Immediate medical attention is required in case of ingestion

It may be helpful to show this safety data sheet to physician.

Note to physician ..... A specific antidote against this substance is not known. Gastric lavage and/or administration of activated charcoal can be considered. After decontamination, treatment is supportive and symptomatic.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. **Extinguishing media** ..... Dry chemical or carbon dioxide for small fires, water spray or foam for large fires. Avoid heavy hose streams.

5.2. **Special hazards arising from the substance or mixture** The essential breakdown products are volatile, toxic, irritant and inflammable compounds such as hydrogen chloride, carbon monoxide, carbon dioxide and various chlorinated organic compounds

5.3. **Advice for firefighters** ..... Use water spray to keep fire-exposed containers cool. Approach fire

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from upwind to avoid hazardous vapours and toxic decomposition products. Fight fire from protected location or maximum possible distance. Dike area to prevent water runoff. Firemen should wear self-contained breathing apparatus and protective clothing.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. **Personal precautions, protective equipment and emergency procedures**

It is recommended to have a predetermined plan for the handling of spills. Empty, closable vessels for the collection of spills should be available.

In case of large spill (involving 10 tonnes of the product or more):
1. use personal protection equipment; see section 8
2. call emergency telephone no.; see section 1
3. alert authorities.

Observe all safety precautions when cleaning up spills. Use personal protection equipment. Depending on the magnitude of the spill this may mean wearing respirator, face mask or eye protection, chemical resistant clothing, gloves and rubber boots.

Stop the source of the spill immediately if safe to do so.

6.2. **Environmental precautions** .....

Contain the spill to prevent any further contamination of surface, soil or water. Wash waters must be prevented from entering surface water drains.

6.3. **Methods and materials for containment and cleaning up**

It is recommended to consider possibilities to prevent damaging effects of spills, such as bunding or capping. See GHS (Annex 4, Section 6).

Surface water drains should be covered if appropriate. Minor spills on the floor or other impervious surface should immediately be swept up or preferably vacuumed up using equipment with high efficiency final filter. Transfer to suitable containers. Clean area with strong industrial detergent and much water. The used containers should be properly closed and labelled.

Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal.

6.4. **Reference to other sections** .....

See subsection 8.2. for personal protection.
See section 13 for disposal.

SECTION 7: HANDLING AND STORAGE

7.1. **Precautions for safe handling** ....

In an industrial environment, it is recommended to avoid all personal contact with the product, if possible by using closed systems with remote system control. The material should be handled by mechanical

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means as much as possible. Adequate ventilation or local exhaust ventilation is required. The exhaust gases should be filtered or treated otherwise. For personal protection in this situation, see section 8.

For its use as a pesticide, first look for precautions and personal protection measures on the officially approved label on the packaging or for other official guidance or policy in force. If these are lacking, see section 8.

Remove contaminated clothing immediately. Wash thoroughly after handling. Before removing gloves, wash them with water and soap. After work, take off all work clothes and footwear. Take a shower, using water and soap. Wear only clean clothes when leaving job. Wash protective clothing and protective equipment with water and soap after each use.

Do not discharge to the environment. See section 13 for disposal.

7.2. **Conditions for safe storage, including any incompatibilities**

The product is stable under normal conditions of warehouse storage.

Keep in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.

7.3. **Specific end use(s)** .....

The product is a registered pesticide which may only be used for the applications it is registered for, in accordance with a label approved by the regulatory authorities.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. **Control parameters**

Personal exposure limits .....

To our knowledge not established for the active ingredient or any other component in this product. However, personal exposure limits defined by local regulations may exist and must be observed.

(E,E)-8,10-Dodecadien-1-ol

DNEL ..... Not established

PNEC, aquatic environment ..... 0.22 µg/l

8.2. **Exposure controls** .....

When used in a closed system, personal protection equipment will not be required. The following is meant for other situations, when the use of a closed system is not possible, or when it is necessary to open the system. Consider the need to render equipment or piping systems non-hazardous before opening.

In cases of incidental high exposure, maximal personal protection

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equipment may be necessary, such as respirator, face mask, chemical resistant coveralls.

Respiratory protection — The product does not automatically present an airborne exposure concern during normal handling, but in the event of an accidental discharge of the material which produces a heavy vapour or dust, workers must put on officially approved respiratory protection equipment with a universal filter type including particle filter.

Protective gloves ..... Wear chemical resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber or viton. The breakthrough times of these materials for the product are unknown, but it is expected that they will give adequate protection.

Eye protection ..... Wear safety glasses. It is recommended to have an eye wash fountain immediately available in the workplace when there is a potential for eye contact.

Other skin protection — Wear appropriate chemical resistant clothing to prevent skin contact depending on the extent of exposure. During most normal work situations where exposure to the material cannot be avoided for a limited time span, waterproof pants and apron of chemical resistant material or coveralls of polyethylene (PE) will be sufficient. Coveralls of PE must be discarded after use if contaminated. In cases of excessive or prolonged exposure, coveralls of barrier laminate may be required.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. **Information on physical and chemical properties**

Appearance	Solid
Odour	Mild and waxy
Odour threshold	Not determined
pH	Not determined
Melting point	Not determined
Initial boiling point and boiling range	Not determined
Flash point	> 95°C
Evaporation rate	Not determined
Flammability (solid/gas)	Not highly flammable
Upper/lower flammability or explosive limits	Not determined
Vapour pressure	**(E,E)-8,10-dodecadien-1-ol** : 3.3 x 10^{-2} Pa at 20°C
Vapour density	Not determined
Relative density	Not determined
Solubility(ies)	Solubility of **(E,E)-8,10-dodecadien-1-ol** in: ethyl acetate > 250 g/l n-heptane > 250 g/l water 21 mg/l at 20°C
Partition coefficient n-octanol/water	**(E,E)-8,10-dodecadien-1-ol** : log K_{ow} = 4.36 at 21°C

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Autoignition temperature	Not determined
Decomposition temperature	Not determined
Viscosity	Not determined
Explosive properties	Not explosive
Oxidising properties	Not oxidising

9.2. **Other information** ..... No more relevant information is available.

SECTION 10: STABILITY AND REACTIVITY

10.1. **Reactivity** ..... To our knowledge, the product has no special reactivities.

10.2. **Chemical stability** ..... The product is stable during normal handling and storage at ambient temperatures.

10.3. **Possibility of hazardous reactions** None known.

10.4. **Conditions to avoid** ..... Heating of the product may evolve harmful and irritant vapours.

10.5. **Incompatible materials** ..... None known.

10.6. **Hazardous decomposition products** See subsection 5.2.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. **Information on toxicological effects** * = Based on available data, the classification criteria are not met.

Product

Acute toxicity		The product is not expected to be harmful by inhalation, in contact with skin or if swallowed. * However, it should always be treated with the usual care of handling chemicals. The acute toxicity is estimated as:
Route(s) of entry	- ingestion	LD_{50}, oral, rat: > 2000 mg/kg
	- skin	LD_{50}, dermal, rat: > 2000 mg/kg
	- inhalation	LC_{50}, inhalation, rat: > 5 mg/l/4 h
Skin corrosion/irritation		Not expected to be irritating to skin. *
Serious eye damage/irritation		Not expected to be irritating to eyes. *
Respiratory or skin sensitisation ...		May be sensitising to skin.
Germ cell mutagenicity		The product contains no ingredients known to be mutagenic. *
Carcinogenicity		The product contains no ingredients known to be carcinogenic. *
Reproductive toxicity		The product contains no ingredients found to have adverse effects on reproduction. *

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STOT – single exposure ..... To our knowledge, no specific effects have been observed after single exposure. *

STOT – repeated exposure ..... The following has been measured on the active ingredient (E,E)-8,10-dodecadien-1-ol:
Target organ: stomach and kidneys
NOAEL was 1000 mg/kg bw/day in a 28-day study with rats. At higher dosage, erosion of glandular mucosa of the stomach and tubular dilatation and vacuolation in kidneys was observed in female rats.

Aspiration hazard ..... The product contains no ingredients known to present an aspiration pneumonia hazard. *

Symptoms and effects, acute and delayed ..... Possibly allergic reactions.

(E,E)-8,10-dodecadien-1-ol

Acute toxicity ..... The substance is not harmful by inhalation, in contact with skin or if swallowed. * The acute toxicity is measured as:

Route(s) of entry	- ingestion	LD_{50}, oral, rat: > 5000 mg/kg (method OECD 401)
	- skin	LD_{50}, dermal, rat: > 2020 mg/kg (method US-EPA 81-2)
	- inhalation	LC_{50}, inhalation, rat: > 3.24 mg/l/4 h (method OECD 403)

Skin corrosion/irritation ..... Causes skin irritation (method OECD 404).

Serious eye damage/irritation ..... May cause mild, transient irritation to eyes (method OECD 405). *

Respiratory or skin sensitisation ... The substance was not sensitising in animal tests (method OECD 406).

SECTION 12: ECOLOGICAL INFORMATION

12.1. **Toxicity** ..... The product is toxic to aquatic organisms. It is considered as non-toxic to soil micro- and macroorganisms, birds and mammals.

The ecotoxicity of the ingredient **(E,E)-8,10-dodecadien-1-ol** is measured as:

- Fish	Rainbow trout (*Oncorhynchus mykiss*)	96-h LC_{50}: 5.87 mg/l
- Invertebrates	Daphnids (*Daphnia magna*)	48-h EC_{50}: 8.6 mg/l
- Algae	Green algae (*Pseudokirchneriella subcapitate*) ...	72-h E_rC_{50}: 0.83 mg/l
- Birds	Bobwhite quail (*Colinus virginianus*)	LD_{50}: > 2050 mg/kg
- Insects	Bees (*Apis mellifera* L.)	48-h LD_{50}, oral: > 85 µg/bee 48-h LD_{50}, contact: 203 µg/bee

12.2. **Persistence and degradability** .... The ingredient **(E,E)-8,10-dodecadien-1-ol** is readily biodegradable.

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The product contains other ingredients which are persistent in the environment.

12.3. **Bioaccumulative potential** ..... See section 9 for n-octanol/water partition coefficient.

Due to ready biodegradability, bioaccumulation of **(E,E)-8,10-dodecadien-1-ol** is not expected.

12.4. **Mobility in soil** ..... Under normal conditions, **(E,E)-8,10-dodecadien-1-ol** is of low mobility in soil.

12.5. **Results of PBT and vPvB assessment** ..... None of the ingredients meets the criteria for being PBT or vPvB.

12.6. **Other adverse effects** ..... Other relevant hazardous effects in the environment are not known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. **Waste treatment methods** ..... Remaining quantities of the material and empty but unclean packaging should be regarded as hazardous waste.

Disposal of waste and packagings must always be in accordance with all applicable local regulations.

Disposal of product ..... According to the Waste Framework Directive (2008/98/EC), possibilities for reuse or reprocessing should first be considered. If this is not feasible, the material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing.

Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Disposal of packaging ..... It is recommended to consider possible ways of disposal in the following order:
1. Reuse or recycling should first be considered. Reuse is prohibited except by the authorisation holder. If offered for recycling, containers must be emptied and triply rinsed (or equivalent). Do not discharge rinsing water to sewer systems.
2. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.
3. Delivery of the packaging to a licensed service for disposal of hazardous waste.
4. Disposal in a landfill or burning in open air should only occur as a last resort. For disposal in a landfill, containers should be emptied completely, rinsed and punctured to make them unusable for other purposes. If burned, stay out of smoke.

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SECTION 14: TRANSPORT INFORMATION

ADR/RID/IMDG/IATA/ICAO classification

14.1. **UN number** 3077

14.2. **UN proper shipping name** ..... Environmentally hazardous substance, solid, n.o.s. (E,E)-8,10-dodecadien-1-ol)

14.3. **Transport hazard class(es)** 9

14.4. **Packing group** III

14.5. **Environmental hazards** ..... Marine pollutant

14.6. **Special precautions for user** ..... Avoid any unnecessary contact with the product. Misuse can result in damage to health. Do not discharge to the environment.

14.7. **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code** ..... The product is not transported in bulk by ship.

SECTION 15: REGULATORY INFORMATION

15.1. **Safety, health and environmental regulations/legislation specific for the substance or mixture** Seveso category (Dir. 2012/18/EU): dangerous for the environment.

All ingredients are covered by EU chemical legislation.

15.2. **Chemical safety assessment** ..... A chemical safety assessment is not required to be included for this product.

SECTION 16: OTHER INFORMATION

List of abbreviations .....

CAS	Chemical Abstracts Service
Dir.	Directive
DNEL	Derived No Effect Level
EC	European Community
EC_{50}	50% Effect Concentration
E_rC_{50}	50% Effect Concentration based on growth
EINECS	European INventory of Existing Commercial Chemical Substances
GHS	Globally Harmonized classification and labelling System of chemicals, Fifth revised edition 2013
IBC	International Bulk Chemical code
LD_{50}	50% Lethal Dose
MARPOL	Set of rules from the International Maritime Organisation (IMO) for prevention of sea pollution
NOAEL	No Observed Adverse Effect Level
n.o.s.	Not otherwise specified
OECD	Organisation for Economic Cooperation and Development

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PBT	Persistent, Bioaccumulative, Toxic
PNEC	Predicted No Effect Concentration
Reg.	Regulation
STOT	Specific Target Organ Toxicity
US-EPA	Environmental Protection Agency USA
vPvB	very Persistent, very Bioaccumulative
WHO	World Health Organisation

References ..... Data on ingredients are available from published literature and can be found several places.

Method for classification ..... Calculation rules

Used hazard statements .....

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
EUH401	To avoid risks to human health and the environment, comply with the instructions of use.

Advice on training ..... This material should only be used by persons who are made aware of its hazardous properties and have been instructed in the required safety precautions.

The information provided in this safety data sheet is believed to be accurate and reliable, but uses of the product vary and situations unforeseen by FMC Corporation may exist. The user has to check the validity of the information under local circumstances.

Prepared by: FMC Corporation / Cheminova A/S / GHB