

SAFETY DATA SHEET



Revision Date:
5/06/2016

Replaces:
4/25/2012

SECTION 1. IDENTIFICATION

Product name : WARDEN CEREALS

Unity # : 1416238

Manufacturer or supplier's details

Company: Winfield Solutions, LLC
P.O. Box 64589
St. Paul, MN 55164
Non-Emergency Business Inquiries: 1-855-494-6343
Mon – Fri 8am – 5pm (CST)

1.4 Emergency telephone

Emergency telephone: ChemTrec: 1-800-424-9300
Medical Emergency: 1-877-424-7452 (24 hrs)

Recommended use of the chemical and restrictions on use

Recommended use : Seed treatment

Restrictions on use : Agriculture, For professional users only.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Inhalation) : Category 4

Eye irritation : Category 2B

Reproductive toxicity : Category 2

Acute aquatic toxicity : Category 3

SAFETY DATA SHEET

WINFIELD™
WARDEN CEREALS

Revision Date:
5/06/2016

Replaces:
4/25/2012

Chronic aquatic toxicity : Category 1

GHS Label element

Hazard pictograms :



Signal Word :

Warning

Hazard Statements :

H320 Causes eye irritation.
H332 Harmful if inhaled.
H361 Suspected of damaging fertility or the unborn child.
H402 Harmful to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements :

Prevention:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P391 Collect spillage.
Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture :

Mixture

Chemical nature :

Ipconazole - 0.0385 lbs/gal

SAFETY DATA SHEET



Revision Date:
5/06/2016

Replaces:
4/25/2012

Metalaxyl - 0.051 lbs/gal

Ipconazole - 4.61 gm/L

Metalaxyl - 6.12 gm/L

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (% w/w)
ethane-1,2-diol	107-21-1	≥ 20 - < 30
gamma-butyrolactone	96-48-0	≥ 1 - < 5
methyl N-(2,6-dimethylphenyl)-N-(methoxyacetyl)-DL-alaninate	57837-19-1	≥ 0.1 - < 1
Cyclopentanol,2-[(4-chlorophenyl)methyl]-5-(1-methylethyl)-1-(1H-1,2,4-triazol-1-ylmethyl)-	125225-28-7	≥ 0.1 - < 1

SECTION 4. FIRST AID MEASURES

If inhaled	: Remove to fresh air. Obtain medical attention.
In case of skin contact	: Remove contaminated clothing and shoes. Wash off with warm water and soap. If symptoms persist, call a physician.
In case of eye contact	: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If symptoms persist, call a physician.
If swallowed	: Do NOT induce vomiting. Do NOT induce vomiting. Rinse mouth with water. Obtain medical attention.
Most important symptoms and effects, both acute and delayed	: irritant effects Symptoms may be delayed. Causes eye irritation. Harmful if inhaled. Suspected of damaging fertility or the unborn child.
Notes to physician	: The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	: Extinguishing media - large fires Alcohol-resistant foam (on small fires) Carbon dioxide (CO ₂) Dry chemical
Unsuitable extinguishing media	: Water spray jet

SAFETY DATA SHEET



Revision Date:
5/06/2016

Replaces:
4/25/2012

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information : Prevent fire extinguishing water from contaminating surface water or the ground water system.

Special protective equipment for fire-fighters : Wear full protective clothing and self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Evacuate unnecessary personnel. Avoid all contact with material. Wear suitable protective equipment.

Environmental precautions : Prevent leaks and prevent soil / water pollution caused by leaks.

Methods and materials for containment and cleaning up : Absorb on inert material such as sand, earth, vermiculite. Collect for disposal. Dam up. Large spills should be collected mechanically (remove by pumping) for disposal. Pump excess material into suitable container (metal drums, metal tank, or such).

In accordance with local and national regulations.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Wear suitable protective equipment. Keep container tightly closed.

Conditions for safe storage : Keep in a dry, cool place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
ethane-1,2-diol	107-21-1	C	50 ppm 125 mg/m ³	OSHA P0
		C	100 mg/m ³	ACGIH
		C (Aerosol only)	100 mg/m ³	ACGIH

Hazardous components without workplace control parameters

Ingredients	CAS-No.
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SAFETY DATA SHEET

Revision Date:
5/06/2016Replaces:
4/25/2012

gamma-butyrolactone	96-48-0
methyl N-(2,6-dimethylphenyl)- N-(methoxyacetyl)-DL- alaninate	57837-19-1
Cyclopentanol,2-[(4- chlorophenyl)methyl]-5-(1- methylethyl)-1-(1H-1,2,4- triazol-1-ylmethyl)-	125225-28-7

Personal protective equipment

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.

Hand protection

Remarks : Impervious gloves

Eye protection : Face-shield

Skin and body protection : impervious clothing

Hygiene measures : NOTE TO END-USERS: The employee protection recommendations on this SDS may differ from those on the product label. For normal use of this product, always refer to the personal protective equipment requirements on the product label.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : red

Odor : No information available.

Odor Threshold : No data available

pH : 5.5 - 7.5

: No data available

: No data available

Flash point : No data available

Evaporation rate : No data available

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

SAFETY DATA SHEET



Revision Date:
05/06/2016

Replaces:
4/25/2012

Relative density	: 1.062 (25 °C)
Solubility(ies)	
Water solubility	: No data available
Solubility in other solvents	: No data available
Partition coefficient: n- octanol/water	: No data available
Autoignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: 30 - 100 mPa,s
Viscosity, kinematic	: No data available
Self-Accelerating decomposition temperature (SADT)	: Method: No information available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Stable under recommended storage conditions.
Chemical stability	: No decomposition if stored and applied as directed.
Conditions to avoid	: None known.
Incompatible materials	: None known.
Hazardous decomposition products	: Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	: LD50 (Rat, female): > 5,000 mg/kg GLP: yes
Acute inhalation toxicity	: LC50 (Rat): > 2.58 mg/l Exposure time: 4 h Test atmosphere: dust/mist GLP: yes
Acute dermal toxicity	: LD50 (Rat): > 5,000 mg/kg GLP: yes

SAFETY DATA SHEET



Revision Date:
05/06/2016

Replaces:
4/25/2012

Ingredients: ethane-1,2-

diol:

Acute oral toxicity : LD50 (Rat, female): 4,700 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 10,670 mg/kg

gamma-butyrolactone:

Acute oral toxicity : LD50 (Rat): 1,540 mg/kg

Acute dermal toxicity : LD50 (Guinea pig): > 5,000 mg/kg

Cyclopentanol,2-[(4-chlorophenyl)methyl]-5-(1-methylethyl)-1-(1H-1,2,4-triazol-1-ylmethyl):-

Acute oral toxicity : LD50 (Rat, male): 1,338 mg/kg
Method: OECD Test Guideline 401
GLP: yes

LD50 (Rat, female): 888 mg/kg
Method: OECD Test Guideline 401
GLP: yes

LD50 (Mouse, male): 537 mg/kg
Method: OECD Test Guideline 401
GLP: yes

LD50 (Mouse, female): 468 mg/kg
Method: OECD Test Guideline 401
GLP: yes

Acute inhalation toxicity : LC50 (Rat, male and female): > 1.88 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
GLP: yes

LC50 (Rat, male and female): > 3.53 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
GLP: yes

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
GLP: yes

Skin corrosion/irritation

Product:

Species: Rabbit
Result: slight irritation
GLP: yes

Revision Date:
05/06/2016

Replaces:
4/25/2012

Ingredients:

gamma-butyrolactone:

Species: Rabbit
Result: No skin irritation

Cyclopentanol,2-[(4-chlorophenyl)methyl]-5-(1-methylethyl)-1-(1H-1,2,4-triazol-1-ylmethyl)-:

Species: Rabbit
Exposure time: 4 h
Result: No skin irritation
GLP: yes

Serious eye damage/eye irritation

Product:

Species: Rabbit
Result: Mild eye irritation
GLP: yes

Ingredients:

gamma-butyrolactone:

Species: Rabbit
Result: Eye irritation
Method: Draize Test

Cyclopentanol,2-[(4-chlorophenyl)methyl]-5-(1-methylethyl)-1-(1H-1,2,4-triazol-1-ylmethyl)-:

Species: Rabbit
Result: No eye irritation

Respiratory or skin sensitization

Product:

Species: Guinea pig
Method: Buehler Test
Result: Did not cause sensitization on laboratory animals.

Ingredients:

Cyclopentanol,2-[(4-chlorophenyl)methyl]-5-(1-methylethyl)-1-(1H-1,2,4-triazol-1-ylmethyl)-:

Species: Guinea pig
Method: Test de Magnusson-Kligmann
Result: Did not cause sensitization on laboratory animals.
GLP: yes

Germ cell mutagenicity

Ingredients:

gamma-butyrolactone:

Genotoxicity in vitro : Test Type: in vitro test
Metabolic activation: with and without metabolic activation
Result: positive

: Test Type: Chromosome aberration test in vitro

Revision Date:
05/06/2016

Replaces:
4/25/2012

Result: positive

: Test Type: Ames test
Metabolic activation: with and without metabolic activation
Result: negative

: Test Type: Unscheduled DNA synthesis (UDS)
Metabolic activation: with and without metabolic activation
Result: negative

Genotoxicity in vivo

: Test Type: in vivo assay
Species: Mouse (male)
Result: negative

Test Type: In vivo micronucleus test
Species: Mouse (male and female)
Result: negative

Germ cell mutagenicity -
Assessment

: Animal testing did not show any mutagenic effects.

Cyclopentanol,2-[(4-chlorophenyl)methyl]-5-(1-methylethyl)-1-(1H-1,2,4-triazol-1-ylmethyl)-:

Genotoxicity in vitro

: Test Type: Ames test
Metabolic activation: with and without metabolic activation
Method: Mutagenicity (Escherichia coli - reverse mutation assay)
Result: negative

: Test Type: In Vitro mammalian Cell Gene Mutation Test
Metabolic activation: with and without metabolic activation
Result: negative

: Test Type: Chromosome aberration test in vitro
Metabolic activation: with and without metabolic activation
Result: negative

Genotoxicity in vivo

: Species: Mouse
Cell type: Bone marrow
Result: negative

Germ cell mutagenicity -
Assessment

: In vitro tests did not show mutagenic effects

Carcinogenicity
Ingredients:
gamma-butyrolactone:

Carcinogenicity - Assess-
ment

: Not classifiable as a human carcinogen.

Cyclopentanol,2-[(4-chlorophenyl)methyl]-5-(1-methylethyl)-1-(1H-1,2,4-triazol-1-ylmethyl)-:

Carcinogenicity - Assess-
ment

: Animal testing did not show any carcinogenic effects.

Revision Date:
05/06/2016

Replaces:
4/25/2012

IARC

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity**Ingredients:****gamma-butyrolactone:**

Reproductive toxicity - Assessment

: No toxicity to reproduction
No effects on or via lactation

Cyclopentanol,2-[(4-chlorophenyl)methyl]-5-(1-methylethyl)-1-(1H-1,2,4-triazol-1-ylmethyl)-:

Effects on fertility

: Species: Rat
Dose: 0, 30, 100 or 300 ppm
General Toxicity F1: NOAEL (No observed adverse effect level): 9 - 10 mg/kg bw/day

STOT-single exposure**Product:**

Remarks: No data available

STOT-repeated exposure**Ingredients:****gamma-butyrolactone:**

Routes of exposure: Oral

Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Cyclopentanol,2-[(4-chlorophenyl)methyl]-5-(1-methylethyl)-1-(1H-1,2,4-triazol-1-ylmethyl)-:

Target Organs: Eyes

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

Repeated dose toxicity**Ingredients:****Cyclopentanol,2-[(4-chlorophenyl)methyl]-5-(1-methylethyl)-1-(1H-1,2,4-triazol-1-ylmethyl)-:**

Species: Rat, female

NOAEL: 7 mg/kg

LOAEL: 33.2 mg/kg

Application Route: Oral

Exposure time: 13 weeks

Dose: 3.1, 7.0, 15.4 and 33.2 mg/kg

GLP: yes

SAFETY DATA SHEET

WINFIELD™
WARDEN CEREALS

Revision Date:
05/06/2016

Replaces:
4/25/2012

Target Organs: Adrenal gland, thymus gland

Species: Rat, male
NOAEL: 25.9 mg/kg
LOAEL: 52.2 mg/kg
Application Route: Oral
Exposure time: 13 weeks
Dose: 2.5, 5.8, 12.6, 25.9 and 52.2
GLP: yes
Target Organs: Adrenal gland, thymus gland

Species: Rat, male and female
NOAEL: 10 mg/kg
LOAEL: 40 mg/kg
Application Route: Dermal
Exposure time: 13 weeks
Dose: 0, 2, 10 or 40 mg/kg bw/day
GLP: yes

Species: Rat, male and female
NOAEL: 30 mg/kg
LOAEL: 100 mg/kg
Application Route: Inhalation
Exposure time: 28-day
Dose: 0, 30, 100, 300 or 1000 mg/m³
GLP: yes

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

gamma-butyrolactone:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 220 - 460 mg/l
Exposure time: 96 h
Test Type: static test
Method: DIN 38412

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 500 mg/l
Exposure time: 48 h

Toxicity to algae : EC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): 79 mg/l
Exposure time: 96 h

Cyclopentanol,2-[(4-chlorophenyl)methyl]-5-(1-methylethyl)-1-(1H-1,2,4-triazol-1-ylmethyl)-:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 1.3 mg/l
Exposure time: 96 h
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.7 mg/l
Exposure time: 48 h

SAFETY DATA SHEET

WINFIELD™
WARDEN CEREALS

Revision Date:
05/06/2016

Replaces:
4/25/2012

GLP: yes

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): 0.62 mg/l
Exposure time: 72 h
GLP: yes

M-Factor (Acute aquatic toxicity) : 1

Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 0.00044 mg/l
Exposure time: 28 d
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.0109 mg/l
Exposure time: 21 d
GLP: yes

M-Factor (Chronic aquatic toxicity) : 100

Persistence and degradability

Ingredients:

gamma-butyrolactone:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 100 mg/l
Result: Readily biodegradable.
Biodegradation: 62 - 90 %
Exposure time: 14 d

Bioaccumulative potential

Ingredients: ethane-

1,2-diol:

Partition coefficient: n-octanol/water : log Pow: -1.3

gamma-butyrolactone:

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: -0.566
Method: OECD Test Guideline 107

Cyclopentanol,2-[(4-chlorophenyl)methyl]-5-(1-methylethyl)-1-(1H-1,2,4-triazol-1-ylmethyl)-:

Partition coefficient: n-octanol/water : log Pow: 4.28 - 4.49

Mobility in soil

No data available

SAFETY DATA SHEET



Revision Date:
05/06/2016

Replaces:
4/25/2012

Other adverse effects**Product:**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : The product itself has not been tested.
The following information is applicable to a component of this material:

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : In accordance with local and national regulations.

SECTION 14. TRANSPORT INFORMATION**International Regulation****UNRTDG**

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

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

Not applicable for product as supplied.

Domestic regulation**49 CFR**

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know****CERCLA Reportable Quantity**

Ingredients	CAS-No.	Component RQ (lbs)	Component RQ (lbs)
Ethylene glycol	107-21-1	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

SAFETY DATA SHEET



Revision Date:
05/06/2016

Replaces:
4/25/2012

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

ethane-1,2-diol	107-21-1	22.4674 %
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Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

ethane-1,2-diol	107-21-1	22.4674 %
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This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM/I

Intermediate or Final VOC's (40 CFR 60.489):

ethane-1,2-diol	107-21-1	22.4674 %
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Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. Clean Water Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. Clean Water Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

FIFRA Hazard Information:

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The pesticide label also includes other important information, including directions for use.

The hazard information required on the pesticide label is reproduced below.

SAFETY DATA SHEET

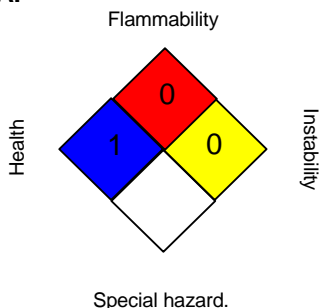
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CAUTION

Causes moderate eye irritation. Avoid contact with eyes or clothing.

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate or by disposal of wastes.

Metalaxyl is known to leach through soil into groundwater under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional office of the EPA.

SECTION 16. OTHER INFORMATION**Further information****NFPA:****HMIS III:**

HEALTH	1*
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
 2 = Moderate, 3 = High
 4 = Extreme, * = Chronic

Revision Date : 05/06/2016

The information provided in this Material 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.