



CHEMISPHERE

# Safety Data Sheet

acc. to 29 CFR 1910.1200 App D

## PENAIR HD-3

Version number: 1.1

Date of compilation: 2024-08-05

### SECTION 1: Identification

#### 1.1 Product identifier

Trade name **PENAIR HD-3**  
Alternative number(s) XB10110

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

Relevant identified uses Aircraft Exterior Cleaner

#### 1.3 Details of the supplier of the safety data sheet

Chemisphere  
2101 Clifton Ave  
St. Louis MO 63139  
United States  
Telephone: 314-644-1300  
Fax: 314-644-7194  
Website: www.ChemisphereCorp.com  
Email: jbrooks@chemispherecorp.com

#### 1.4 Emergency telephone number

Emergency information service CHEMTREC: 800-424-9300 (24 Hour)

### SECTION 2: Hazard(s) identification

#### 2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Section	Hazard class	Category	Hazard class and category	Hazard statement
A.2	skin corrosion/irritation	2	Skin Irrit. 2	H315
A.3	serious eye damage/eye irritation	2A	Eye Irrit. 2A	H319
A.6	carcinogenicity	2	Carc. 2	H351

For full text of abbreviations: see SECTION 16.

#### 2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

- Signal word warning

- Pictograms

GHS07, GHS08



- Hazard statements

H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H351 Suspected of causing cancer.



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### - Precautionary statements

P202	Do not handle until all safety precautions have been read and understood.
P280	Wear protective gloves.
P302+P352	If on skin: Wash with plenty of water.
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.
P321	Specific treatment (see on this label).
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.
P405	Store locked up.
P501	Dispose of contents/container to industrial combustion plant.

### 2.3 Other hazards

This material is combustible, but will not ignite readily.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Not relevant (mixture)

### 3.2 Mixtures

Description of the mixture

Name of substance	Identifier		Wt%
Water	CAS No	7732-18-5	75 - < 90
Ethoxylated Nonylphenol	CAS No	127087-87-0	1 - < 10
Monocyclic C21 dicarboxylate, dipotassium salt	CAS No	68127-33-3	1 - < 10
DPM Dipropylene Glycol Methyl	CAS No	34590-94-8	1 - < 10
Hydroxypropyl Methylcellulose	CAS No	9004-65-3	1 - < 10
Cocoamide DEA	CAS No	68603-42-9	1 - < 10

### Remarks

For full text of abbreviations: see SECTION 16

## SECTION 4: First-aid measures

### 4.1 Description of first-aid measures

#### General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

#### Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. Provide fresh air.

#### Following skin contact

Wash with plenty of soap and water.



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### Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

### Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

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

Symptoms and effects are not known to date.

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

none

## SECTION 5: Fire-fighting measures

### 5.1 Extinguishing media

Suitable extinguishing media

Water spray, BC-powder, Carbon dioxide (CO<sub>2</sub>)

Unsuitable extinguishing media

Water jet

### 5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

Nitrogen oxides (NO<sub>x</sub>), Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>)

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

### 6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.



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### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation  
Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

### 7.2 Conditions for safe storage, including any incompatibilities

Control of the effects

Protect against external exposure, such as  
frost

### 7.3 Specific end use(s)

See section 16 for a general overview.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)											
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m <sup>3</sup> ]	STEL [ppm]	STEL [mg/m <sup>3</sup> ]	Ceiling-C [ppm]	Ceiling-C [mg/m <sup>3</sup> ]	Notation	Source
US	diethanolamine	111-42-2	REL	3 (10 h)	15 (10 h)						NIOSH REL
US	diethanolamine	111-42-2	PEL (CA)	0.46	2					H	Cal/OSHA PEL
US	diethanolamine	111-42-2	TLV®		1					iv, H	ACGIH® 2024
US	dipropylene glycol methyl ether	34590-94-8	PEL (CA)	100	600	150	900			H	Cal/OSHA PEL
US	dipropylene glycol methyl ether	34590-94-8	REL	100 (10 h)	600 (10 h)	150	900			H	NIOSH REL
US	dipropylene glycol methyl ether	34590-94-8	PEL	100	600					H	29 CFR 1910.1000
US	dipropylene glycol methyl ether (DP-GME)	34590-94-8	TLV®	50							ACGIH® 2024
US	glycerine	56-81-5	REL							mist, appx-D	NIOSH REL



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Occupational exposure limit values (Workplace Exposure Limits)											
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m <sup>3</sup> ]	STEL [ppm]	STEL [mg/m <sup>3</sup> ]	Ceiling-C [ppm]	Ceiling-C [mg/m <sup>3</sup> ]	Notation	Source
US	glycerine	56-81-5	PEL		15					mist, dust	29 CFR 1910.1000
US	glycerine	56-81-5	PEL		5					mist, r	29 CFR 1910.1000
US	methanol	67-56-1	TLV®	200		250				H	ACGIH® 2024
US	methyl alcohol	67-56-1	PEL	200	260						29 CFR 1910.1000
US	methyl alcohol	67-56-1	REL	200 (10 h)	260 (10 h)	250	325			H	NIOSH REL
US	methyl alcohol (methanol)	67-56-1	PEL (CA)	200	260	250	325	1,000		H	Cal/OSHA PEL

### Notation

appx-D	see Appendix D - Substances with No Established RELs
Ceiling-C	ceiling value is a limit value above which exposure should not occur
dust	as dust
H	absorbed through the skin
iv	inhalable fraction and vapor
mist	as mists
r	respirable fraction
STEL	short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
TWA	time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

### Biological limit values

Country	Name of agent	Parameter	Notation	Identifier	Value	Source
US	methanol	methanol		BEI®	15 mg/l	ACGIH® 2024

### Relevant DNELs of components

Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DPM Dipropylene Glycol Methyl	34590-94-8	DNEL	308 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
DPM Dipropylene Glycol Methyl	34590-94-8	DNEL	283 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects



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Relevant PNECs of components						
Name of substance	CAS No	Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
DPM Dipropylene Glycol Methyl	34590-94-8	PNEC	19 mg/l	aquatic organisms	freshwater	short-term (single instance)
DPM Dipropylene Glycol Methyl	34590-94-8	PNEC	1.9 mg/l	aquatic organisms	marine water	short-term (single instance)
DPM Dipropylene Glycol Methyl	34590-94-8	PNEC	4,168 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
DPM Dipropylene Glycol Methyl	34590-94-8	PNEC	70.2 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
DPM Dipropylene Glycol Methyl	34590-94-8	PNEC	7.02 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
DPM Dipropylene Glycol Methyl	34590-94-8	PNEC	2.74 mg/kg	terrestrial organisms	soil	short-term (single instance)

### 8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection. Use safety goggle with side protection. Wear face-shield.

Skin protection

- Hand protection

Wear suitable gloves.

- Other protection measures

Wash hands thoroughly after handling. Protective clothing against liquid chemicals. Footwear protecting against chemicals.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Avoid release to the environment.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

Physical state	liquid
Color	not determined
Particle	not relevant (liquid)
Odor	characteristic



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### Other safety parameters

pH (value)	8 – 10
Melting point/freezing point	32 °F
Initial boiling point and boiling range	212 °F
Flash point	75 °C at 1,013 mbar
Evaporation rate	not determined
Flammability (solid, gas)	not relevant, (fluid)
Vapor pressure	10 mmHg at 75.1 °C
Density	not determined
Vapor density	this information is not available
Relative density	information on this property is not available
Solubility(ies)	not determined

### Partition coefficient

- n-octanol/water (log KOW)	this information is not available
Auto-ignition temperature	207 °C
Viscosity	not determined
Explosive properties	none
Oxidizing properties	none

### 9.2 Other information

Liquid content	100 %
Solid content	0.45 %
Temperature class (USA, acc. to NEC 500)	T3 (maximum permissible surface temperature on the equipment: 200°C)

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

### 10.2 Chemical stability

See below "Conditions to avoid".



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### 10.3 Possibility of hazardous reactions

No known hazardous reactions.

### 10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

### 10.5 Incompatible materials

Oxidizers

### 10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Test data are not available for the complete mixture.

#### Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

#### Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

#### Acute toxicity

Shall not be classified as acutely toxic.

#### Skin corrosion/irritation

Causes skin irritation.

#### Serious eye damage/eye irritation

Causes serious eye irritation.

#### Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

#### Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

#### Carcinogenicity

Suspected of causing cancer.

#### IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

Name of substance	CAS No	Classification	Number
Diethanolamine 99%	111-42-2	2B	
Cocoamide DEA	68603-42-9	2B	

#### Legend

2B Possibly carcinogenic to humans

#### Reproductive toxicity

Shall not be classified as a reproductive toxicant.

#### Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

#### Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).





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Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

### SECTION 12: Ecological information

#### 12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

#### 12.2 Persistence and degradability

Data are not available.

#### 12.3 Bioaccumulative potential

Data are not available.

#### 12.4 Mobility in soil

Data are not available.

#### 12.7 Other adverse effects

Data are not available.

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packages

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

#### Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

### SECTION 14: Transport information

14.1 UN number not assigned

14.2 UN proper shipping name not relevant

14.3 Transport hazard class(es) none

14.4 Packing group not assigned

14.5 Environmental hazards non-environmentally hazardous acc. to the dangerous goods regulations

#### 14.6 Special precautions for user

Do not handle until all safety precautions have been read and understood. .

#### 14.7 Information for each of the UN Model Regulations

**Transport of dangerous goods by road or rail (49 CFR US DOT) - Additional information**

Not subject to transport regulations.

**International Maritime Dangerous Goods Code (IMDG) - Additional information**

Not subject to IMDG.



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### International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Not subject to ICAO-IATA.

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

#### National regulations (United States)

#### Superfund Amendment and Reauthorization Act (SARA TITLE III )

- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

none of the ingredients are listed

- Specific Toxic Chemical Listings (EPCRA Section 313)

none of the ingredients are listed

#### Toxics Release Inventory: Specific Toxic Chemical Listings

Name of substance	CAS No	Remarks	Effective date
Methanol	67-56-1		1987-01-01
Diethanolamine 99%	111-42-2		1987-01-01

#### Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

none of the ingredients are listed

Name of substance	CAS No	Remarks	Statutory code	Final RQ pounds (Kg)
Methanol	67-56-1		3 4	5000 (2270)
Diethanolamine 99%	111-42-2		3	100 (45,4)

#### Legend

3 "3" indicates that the source is section 112 of the Clean Air Act

4 "4" indicates that the source is section 3001 of the Resource Conservation and Recovery Act (RCRA)

#### Clean Air Act

none of the ingredients are listed

#### Right to Know Hazardous Substance List

- Cleaning Product Right to Know Act Substance List (CA-RTK)

none of the ingredients are listed

Name of substance	CAS No	Functionality	Authoritative Lists
Methanol	67-56-1		CA TACs IRIS Neurotoxics NTP OHAT - Repr. or Dev. Toxicants OEHA RELs Prop 65

- Toxic or Hazardous Substance List (MA-TURA)

none of the ingredients are listed



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Name of substance	CAS No	DEP CODE	PBT / HHS / LHS	PBT / HHS Threshold	De Minimis Concentration Threshold
Methanol	67-56-1				1.0 %

- Hazardous Substances List (MN-ERTK)  
none of the ingredients are listed

- Hazardous Substance List (NJ-RTK)

Name of substance	CAS No	Remarks	Classifications
Methanol	67-56-1		TE F3
DPM Dipropylene Glycol Methyl	34590-94-8		F2
Glycerin USP Kosher	56-81-5		
Diethanolamine 99%	111-42-2		CO

### Legend

CO Corrosive  
F2 Flammable - Second Degree  
F3 Flammable - Third Degree  
TE Teratogenic

- Hazardous Substance List (Chapter 323) (PA-RTK)  
none of the ingredients are listed

Name acc. to inventory	CAS No	Classification
METHANOL	67-56-1	E

### Legend

E Environmental hazard

- Hazardous Substance List (RI-RTK)  
none of the ingredients are listed

Name of substance	CAS No	References
Methanol	67-56-1	T, F

### Legend

F Flammability (NFPA®)  
T Toxicity (ACGIH®)

### California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

none of the ingredients are listed

Proposition 65 List of chemicals			
Name acc. to inventory	CAS No	Remarks	Type of the toxicity
methanol	67-56-1		developmental



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Proposition 65 List of chemicals			
Name acc. to inventory	CAS No	Remarks	Type of the toxicity
diethanolamine	111-42-2		cancer
coconut oil diethanolamine condensate (cocamide diethanolamine)			cancer

### Drug precursors, Chemicals designated within the Controlled Substances Act, 21 U.S.C. § 802, paragraphs 34 (list I) and 35 (list II)

none of the ingredients are listed

### Industry or sector specific available guidance(s)

#### NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

Category	Rating	Description
Chronic	*	chronic (long-term) health effects may result from repeated overexposure
Health	2	temporary or minor injury may occur
Flammability	2	material that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

#### NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

Category	Degree of hazard	Description
Flammability	2	material that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur
Health	2	material that, under emergency conditions, can cause temporary incapacitation or residual injury
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

## 15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.



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### SECTION 16: Other information, including date of preparation or last revision

#### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
29 CFR 1910.1000	29 CFR 1910.1000, Tables Z-1, Z-2, Z-3 - Occupational Safety and Health Standards: Toxic and Hazardous Substances (permissible exposure limits)
49 CFR US DOT	49 CFR U.S. Department of Transportation
ACGIH®	American Conference of Governmental Industrial Hygienists
ACGIH® 2024	From ACGIH®, 2024 TLVs® and BEIs® Book. Copyright 2024. Reprinted with permission. Information on the proper use of the TLVs® and BEIs®: <a href="http://www.acgih.org/tlv-bei-guidelines/policies-procedures-presentations/tlv-bei-position-statement">http://www.acgih.org/tlv-bei-guidelines/policies-procedures-presentations/tlv-bei-position-statement</a>
Cal/OSHA PEL	California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
DEP CODE	Department of Environmental Protection Code
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
HHS	Higher hazard substance
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
LHS	Lower hazard substance
NFPA®	National Fire Protection Association (United States)
NIOSH REL	National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELs)
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PEL	Permissible exposure limit
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
STEL	Short-term exposure limit
TLV®	Threshold Limit Values
TWA	Time-weighted average

#### Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT). International Maritime Dangerous Goods Code (IMDG).

Dangerous Goods Regulations (DGR) for the air transport (IATA).



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### Classification procedure

Physical and chemical properties: The classification is based on tested mixture.

Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

### List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H351	Suspected of causing cancer.

### Disclaimer

The information and recommendations contained in the Safety Data Sheet (SDS) are supplied pursuant to 29 CFR 1910.1200 of the Occupational Safety and Health Standards Hazard Communication Rule. The information and recommendations set forth herein are presented in good faith and believed to be correct as of this date hereof.

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This information relates to the material designated and may not be valid for such material used in combination with any other materials nor in any process.