

1. Identification

Product identifier	Pennguard™ HP Epoxy Primer Hardener Part B
Other means of identification	None.
Recommended use	Not available.
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name	Armor Limited, Inc.
Address	2410 US-15 South, Sumter, SC 29150

After hours telephone number	1-877-982-7667
Normal work hours telephone number	1-877-982-7667
Website	www.armor-inc.com
E-mail	customerservice@armor-inc.com
Emergency 24-hour telephone number	CHEMTREC North America: 800-424-9300, International: +1-703-527-3887
Information on operation hours	8:00 a.m. to 5:00 p.m.

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 3
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Sensitization, skin	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	Flammable liquid and vapor. Harmful if swallowed. Harmful if inhaled. Causes severe skin burns and eye damage. Causes serious eye damage. May cause an allergic skin reaction. May cause respiratory irritation. May cause drowsiness or dizziness.
Precautionary statement	
Prevention	Avoid breathing dust/fume/gas/mist/vapors/spray. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF SWALLOWED: Immediately call a POISON CENTER/doctor. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. Specific treatment (see this label). If skin irritation or rash occurs: Get medical advice/attention. In case of fire: Use appropriate media to extinguish. Wash contaminated clothing before reuse.
Storage	Store locked up. Store in a well-ventilated place. Keep cool. Keep container tightly closed.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. This material is a static accumulator. May form flammable/explosive vapour-mixture. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.

Supplemental information	None.
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3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
BISPHENYL EPOXY CURING AGENT		N/A	40 - 50
METHYL AMYL KETONE		110-43-0	40 - 50
1-BUTANOL		71-36-3	< 10

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell. Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device. Do not use mouth-to-mouth method if victim inhaled the substance. If unconscious, place in recovery position and get medical attention immediately. Maintain open airway. Loosen tight clothing such as a collar, tie, belt, or waistband.

Skin contact

Wash skin thoroughly with soap and water. Immediately remove contaminated clothing. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Never give anything by mouth to a victim who is unconscious or is having convulsions. If unconscious, place in a recovery position and get medical attention immediately. Maintain an open airway. Do not use mouth-to-mouth method if victim ingested the substance. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical advice/attention if you feel unwell.

Most important symptoms/effects, acute and delayed

Auditory system effects may include temporary hearing loss and/or ringing in the ears. Symptoms of overexposure can include shortness of breath, drowsiness, headaches, confusion, decreased coordination, visual disturbances and vomiting, and are reversible if exposure is stopped. Defatting of the skin. May cause skin dryness or cracking. Blisters. Swelling. Wheezing. May cause drowsiness or dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause redness and pain. Irritating to mouth, throat, and stomach. Skin irritation.

Indication of immediate medical attention and special treatment needed

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately. Induction of emesis (vomiting) is not recommended. Consider activated charcoal and/or gastric lavage. If patient is obtunded, protect the airway by cuffed endotracheal intubation or by placement of the body in a Trendelenburg and left lateral decubitus position. Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. If you feel unwell, seek medical advice (show the label where possible).

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

Vapors may form explosive mixtures with air. If sufficient charge is accumulated, ignition of flammable mixtures can occur. During fire, gases hazardous to health may be formed. Fire may produce irritating, corrosive and/or toxic gases. Do not use forced stream as this could cause fire to spread.

Special protective equipment and precautions for firefighters

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection.

Fire fighting equipment/instructions

In case of fire and/or explosion do not breathe fumes. ALWAYS stay away from tanks engulfed in flame. Move containers from fire area if you can do so without risk. In the event of fire, cool tanks with water spray.

Specific methods

In the event of fire and/or explosion do not breathe fumes.

General fire hazards

Flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways. Ventilate area and avoid breathing vapors or mist.

Avoid discharge into drains, water courses or onto the ground. Do not allow the spilled product to enter public drainage systems or open watercourses.

Environmental precautions**7. Handling and storage****Precautions for safe handling**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not taste or swallow. Avoid breathing mist/vapors. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Avoid contact with eyes and prolonged or repeated contact with skin.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry place. Store locked up. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in tightly closed container. Avoid heat, sparks, open flames and other ignition sources. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep out of the reach of children.

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
1-BUTANOL (CAS 71-36-3)	PEL	300 mg/m ³ 100 ppm
METHYL AMYL KETONE (CAS 110-43-0)	PEL	465 mg/m ³

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
		100 ppm
US. ACGIH Threshold Limit Values		
Components	Type	Value
1-BUTANOL (CAS 71-36-3)	TWA	20 ppm
METHYL AMYL KETONE (CAS 110-43-0)	TWA	50 ppm
US. NIOSH: Pocket Guide to Chemical Hazards		
Components	Type	Value
1-BUTANOL (CAS 71-36-3)	Ceiling	150 mg/m ³
		50 ppm
METHYL AMYL KETONE (CAS 110-43-0)	TWA	465 mg/m ³
		100 ppm

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines**US - California OELs: Skin designation**

1-BUTANOL (CAS 71-36-3) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

1-BUTANOL (CAS 71-36-3) Skin designation applies.

US - Tennessee OELs: Skin designation

1-BUTANOL (CAS 71-36-3) Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

1-BUTANOL (CAS 71-36-3) Can be absorbed through the skin.

Appropriate engineering controls Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Explosion-proof general and local exhaust ventilation.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical goggles and face shield are recommended.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Nitrile, butyl rubber or neoprene gloves are recommended.

Other Wear suitable protective clothing. Use of an impervious apron is recommended. Plastic or rubber gloves, apron and boots.

Respiratory protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Observe any medical surveillance requirements. When using do not smoke. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance Clear.

Physical state Liquid.

Form Liquid.

Color Amber.

Odor Organic Solvent.

Odor threshold Not available.

pH Not available.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point 95.0 °F (35.0 °C) Tag Closed Cup

Evaporation rate 0.5 estimated

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Explosive limit - lower (%) 1.4 %

Explosive limit - upper (%) Not available.

Vapor pressure Not available.

Vapor density Not available.

Relative density Not available.

Solubility(ies)

Solubility (water) Not available.

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature > 930.2 °F (> 499 °C)

Decomposition temperature Not available.

Viscosity Not available.

Other information

Density 7.50 lb/gal estimated

Percent volatile 50 - 60 % estimated

Specific gravity 0.9 estimated

VOC 3.9 lb/gal estimated

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Stable.

Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.

Conditions to avoid Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.

Incompatible materials Peroxides. Sodium Hypochlorite. Acids. Strong oxidizing agents.

Hazardous decomposition products No decomposition products are expected to form during normal storage. Upon decomposition, this product emits oxides of sulfur, carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

11. Toxicological information

Information on likely routes of exposure

Inhalation Headache. Nausea, vomiting. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Harmful if inhaled. May cause irritation to the respiratory system.

Skin contact Causes severe skin burns and eye damage. May cause an allergic skin reaction.

Eye contact Causes serious eye irritation.

Ingestion May be harmful if swallowed. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics Contact may cause redness, burning, drying, and cracking of the skin, and skin damage. May cause drowsiness or dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Irritating to mouth, throat, and stomach.

Information on toxicological effects

Acute toxicity Harmful if inhaled. Harmful if swallowed.

Product	Species	Test Results
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Pennguard™ HP Epoxy Primer Hardener Part B

Acute

Dermal

LD50

Rabbit

23320 mg/kg

Components	Species	Test Results
1-BUTANOL (CAS 71-36-3)		
Acute		
Dermal		
LD50	Rabbit	3400 mg/kg
Oral		
LD50	Rat	790 mg/kg
METHYL AMYL KETONE (CAS 110-43-0)		
Acute		
Dermal		
LD50	Rabbit	12600 mg/kg
Oral		
LD50	Rat	1.67 g/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	Corrosive to skin and eyes. May cause an allergic skin reaction.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity	Not available.
Specific target organ toxicity - single exposure	May cause drowsiness or dizziness. May cause irritation to the respiratory system.
Specific target organ toxicity - repeated exposure	May cause damage to organs through prolonged or repeated exposure. Ears.
Aspiration hazard	Not available.
Chronic effects	Prolonged exposure may cause chronic effects.
Further information	Symptoms may be delayed.

12. Ecological information

Ecotoxicity	Components of this product are hazardous to aquatic life. Accumulation in aquatic organisms is expected. Harmful to aquatic life with long lasting effects.
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Product	Species	Test Results
Pennguard™ HP Epoxy Primer Hardener Part B		
Aquatic		
Crustacea	EC50	Daphnia
Fish	LC50	Fish
Acute		
Crustacea	EC50	Daphnia
Fish	LC50	Fish

Components	Species	Test Results
1-BUTANOL (CAS 71-36-3)		
Aquatic		
<i>Acute</i>		
Crustacea	EC50	Water flea (Daphnia magna) $\geq 1897 - \leq 2072 \text{ mg/l, 48 hours}$
Fish	LC50	Bluegill (Lepomis macrochirus) $\geq 100 - \leq 500 \text{ mg/l, 96 hours}$
METHYL AMYL KETONE (CAS 110-43-0)		
Aquatic		
<i>Acute</i>		
Fish	LC50	Fathead minnow (Pimephales promelas) $\geq 126 - \leq 137 \text{ mg/l, 96 hours}$

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

1-BUTANOL	0.88
METHYL AMYL KETONE	1.98

Mobility in soil

Other adverse effects

No data available.

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions

Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers. If discarded, this product is considered a RCRA ignitable waste, D001. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations

Hazardous waste code

Dispose in accordance with all applicable regulations.

D001: Waste Flammable material with a flash point <140 F

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Residual vapors may explode on ignition; do not cut, drill, grind, or weld on or near this container. Recycle empty drums at an appropriate facility in accordance with current applicable laws and regulations, and product characteristics at time of disposal. Ensure drums are tightly sealed.

14. Transport information

DOT

UN number

UN1263

UN proper shipping name

Paint related material including paint thinning, drying, removing, or reducing compound

Transport hazard class(es)

Class 3

Subsidiary risk -

Label(s) 3

Packing group

III

Special precautions for user

Read safety instructions, SDS and emergency procedures before handling.

Special provisions

B1, B52, IB3, T2, TP1, TP29

Packaging exceptions

150

Packaging non bulk

173

Packaging bulk

242

IATA

UN number

UN1263

UN proper shipping name

Paint related material (including paint thinning or reducing compounds)

Transport hazard class(es)

Class 3

Subsidiary risk	-
Packing group	III
Environmental hazards	No.
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.
IMDG	
UN number	UN1263
UN proper shipping name	PAINT (including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations	All components are on the U.S. EPA TSCA Inventory List. This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
Toxic Substances Control Act (TSCA)	One or more components of the mixture are not on the TSCA 8(b) inventory or are designated "inactive".
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.
CERCLA Hazardous Substance List (40 CFR 302.4)	1-BUTANOL (CAS 71-36-3) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**SARA 302 Extremely hazardous substance**

Not listed.

SARA 311/312 Hazardous chemical

Classified hazard categories

- Flammable (gases, aerosols, liquids, or solids)
- Acute toxicity (any route of exposure)
- Skin corrosion or irritation
- Serious eye damage or eye irritation
- Respiratory or skin sensitization
- Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
1-BUTANOL	71-36-3	< 10

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Contains component(s) regulated under the Safe Drinking Water Act.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

1-BUTANOL (CAS 71-36-3)	Low priority
METHYL AMYL KETONE (CAS 110-43-0)	Other Flavoring Substances with OSHA PEL's

US state regulations**California Proposition 65**

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 07-12-2022

Version # 01

Further information HMIS® is a registered trade and service mark of the NPCA.

NFPA ratings

Health: 3
Flammability: 3
Instability: 0

References

ACGIH
EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information

Composition / Information on Ingredients: Ingredients