

SAFETY DATA SHEET

FOR INDUSTRIAL USE ONLY

EPIKURETM Curing Agent 3274

Section 1. Product and company identification

GHS product identifier MSDS Number Product type	::	EPIKURE [™] Curing Agent 3274 K8169 Curing Agent
Manufacturer/Supplier/Importer	:	Westlake Epoxy Inc. 12650 DIRECTORS DR STE 100 Stafford, Texas 77477 USA
Contact person Telephone	:	epoxyservice@westlake.com For additional health and safety or regulatory information, call 1 888 443 9466.
Emergency telephone number	:	For Emergency Medical Assistance Call Health & Safety Information Services 1-866-303-6949 For Emergency Transportation Information NCEC US Domestic +1 866 928 0789 (toll-free, US only) NCEC Americas +1 215 207 0061 CANUTEC CA Domestic (613) 996-6666

Section 2. Hazards identification

Classification of the substance or mixture	:	SKIN CORROSION - Category 1B SERIOUS EYE DAMAGE - Category 1 RESPIRATORY SENSITISATION - Category 1 REPRODUCTIVE TOXICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE [blood system, liver, lungs] - Category 1
GHS label elements		
Hazard pictograms	:	
Signal word	:	Danger
Hazard statements	:	 H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H361 Suspected of damaging fertility or the unborn child. H372 Causes damage to organs through prolonged or repeated exposure: (blood system, liver, lungs)

General	:	Not applicable.
Prevention	:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Wear respiratory protection. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.
Response	:	IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. If experiencing respiratory symptoms: Call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. 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.
Storage	:	Store locked up.
Disposal	:	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Other hazards which do not result	:	None known.

in classification

Section 3. Composition/information on ingredients

Substance/mixture

: Mixture

Ingredient name	% by weight	CAS
		number
Reaction products of di-, tri- and tetra-propoxylated propane-	50 - 65	9046-10-0
1,2-diol with ammonia		
Phenol, 4-Nonyl-, Branched	25 - 35	84852-15-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	:	Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
Inhalation	:	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.
Skin contact	:	Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	:	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician :	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
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Specific treatments	:	No specific treatment.
Protection of first aid personnel	:	No action shall be taken involving any personal risk or without
		suitable training. If it is suspected that fumes are still present, the
		rescuer should wear an appropriate mask or self-contained breathing
		apparatus. It may be dangerous to the person providing aid to give
		mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly
		with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media Unsuitable extinguishing media	:	Use dry chemical, CO2, alcohol-resistant foam or water spray (fog). Do not use water jet.
Specific hazards arising from the chemical Hazardous thermal decomposition products	:	In a fire or if heated, a pressure increase will occur and the container may burst. Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides
Special protective actions for fire- fighters	:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	:	Fire-fighters should wear appropriate protective equipment and self- contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	:	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	:	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Environmental precautions	:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble,

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Large spill	Large	spill
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disposal container. Dispose of via a licensed waste disposal contractor. Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with noncombustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13 of SDS). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 of SDS for emergency contact information and section 13 of SDS for waste disposal.

absorb with an inert dry material and place in an appropriate waste

Section 7. Handling and storage

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Precautions for safe handling

Protective measures	:	Put on appropriate personal protective equipment (see section 8 of SDS). Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene	:	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	:	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10 of SDS) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Reaction products of di-, tri- and tetra-	None.

propoxylated propane-1,2-diol with	
ammonia Phenol, 4-Nonyl-, Branched	None.
	If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of
	 hazardous substances will also be required. Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
Individual protection measures	
	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
Skin protection	
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state Color	:	Liquid Water white
Odor Odor threshold	:	characteristic. Not available
рН	:	Not available
Melting point/ Freezing point	:	Not available
Boiling point	:	260 °C (500 °F)
Flash point	:	Estimated. 124 °C (255 °F)
Burning time Burning rate Evaporation rate	::	Not available Not available Not available
Flammability (solid, gas) Lower and upper explosive (flammable) limits	:	Not available Lower: Not available Upper: Not available
Vapor pressure	:	Not available
Vapor density Relative density	:	Not available Not available
Solubility Solubility in water	:	Not available Partial
Partition coefficient: n- octanol/water	:	Not available Not applicable.
Auto-ignition temperature	:	Not available
Decomposition temperature SADT Viscosity	::	Not available Not available Dynamic: Not available Kinematic: Not available

Other information

No additional information.

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Section 10. Stability and reactivity

Reactivity	:	Stable under normal conditions.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	Keep away from heat, sparks, flame and other ignition sources. Exposure to water vapour.
Incompatible materials	:	strong acids, strong oxidizing agents,
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure		
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia						
	LD50 Oral	Rat	2,885 mg/kg	-		
	LD50 Dermal	Rabbit	2,980 mg/kg	-		
Phenol, 4-Nonyl-, Branched						
	LD50 Oral	Rat	1,300 mg/kg	-		
Conclusion/Summary	: Not	available				

Conclusion/Summary

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Reaction products of di-, tri- and	eyes -	Rabbit			-
tetra-propoxylated propane-1,2-	Severe				
diol with ammonia	irritant				
Phenol, 4-Nonyl-, Branched	Skin -	Rabbit		24 hrs	-
	Severe				
	irritant				
	eyes -	Rabbit			-
	Severe				
	irritant				
Conclusion/Summary					
Skin	: Not	available			
05/06	Not	available			

eyes Not available : Respiratory

Not available :

Sensitization

Conclusion/Summary

Skin

Not available :

Respiratory	:	Not available
<u>Mutagenicity</u>		
Conclusion/Summary	:	Not available
Carcinogenicity		
Conclusion/Summary	:	Not available
<u>Reproductive toxicity</u>		
Conclusion/Summary	:	Not available
Teratogenicity		
Conclusion/Summary	:	Not available

Specific target organ toxicity (single exposure) Not available

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Phenol, 4-nonyl-, branched	Category 1	-	blood system, liver, lungs
Aspiration hazard			

Not available

Information on likely routes of exposure	:	Not available
Potential acute health effects		
Eye contact	:	Causes serious eye damage.
Inhalation	:	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin contact	:	Causes severe burns.
Ingestion	:	No known significant effects or critical hazards.
Symptoms related to the physical, ch	emic	al and toxicological characteristics
Eye contact	:	Adverse symptoms may include the following: pain watering redness
Inhalation	:	Adverse symptoms may include the following: wheezing and breathing difficulties asthma reduced fetal weight
Skin contact	:	increase in fetal deaths skeletal malformations Adverse symptoms may include the following: pain or irritation redness

Ingestion	:	blistering may occur reduced fetal weight increase in fetal deaths skeletal malformations Adverse symptoms may include the following: stomach pains reduced fetal weight increase in fetal deaths skeletal malformations
Delayed and immediate effects as w	vell as	chronic effects from short and long-term exposure
Short term exposure		
Potential immediate effects Potential delayed effects	:	Not available Not available
Long term exposure		
Potential immediate effects Potential delayed effects	:	Not available Not available
Potential chronic health effects		
Conclusion/Summary	:	Not available
General	:	Causes damage to organs through prolonged or repeated exposure: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	:	No known significant effects or critical hazards.
Mutagenicity	:	No known significant effects or critical hazards.
Teratogenicity	:	Suspected of damaging the unborn child.
Developmental effects	:	No known significant effects or critical hazards.
Fertility effects	:	Suspected of damaging fertility.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral	Dermal	Inhalation (gases)	Inhalation (vapors)	Inhalation (dusts and mists)
EPIKURE™ Curing Agent 3274	2,022.1 mg/kg	4,584.6 mg/kg	N/A	N/A	N/A
Poly[oxy(methyl-1,2- ethanediyl)], .alpha(2- aminomethylethyl)omega (2-aminomethylethoxy)-	2,885 mg/kg	2,980 mg/kg	N/A	N/A	N/A
Phenol, 4-nonyl-, branched	1,300 mg/kg	N/A	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	
4-nonylphenol, branched			
	Acute LC50 138.25 µg/l Fresh water	Fish - Fathead minnow	96 h
	Acute LC50 135.1 µg/l Fresh water	Fish - Bluegill	96 h
	Acute EC50 0.33 mg/l Fresh water	Aquatic plants - Green	72 h
	_	algae	
	Acute EC50 0.41 mg/l Fresh water	Aquatic plants - Green	96 h
		algae	

Conclusion/Summary

Not available

:

Persistence/degradability

Product/ingredient	Test	Result	Dose	Inoculum
name				
Reaction products of di- , tri- and tetra- propoxylated propane- 1,2-diol with ammonia	OECD-Guideline 301 B (CO2 Evolution Test)	0 % - 28 d		
Remarks:	The product is not	biodegradable.		
Conclusion/Summary		Not available		

Not available

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
Reaction products of di-, tri- and	1.34	-	low
tetra-propoxylated propane-1,2-diol			
with ammonia			
4-nonylphenol, branched	5.4	2.4	low

Mobility in soil

Soil/water partition coefficient	:	Not available
(KOC)		
Other adverse effects	:	No known significant effects or critical hazards.

:

Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

The data provided in this section is for information only and may not be specific to your package size or mode of transport. You will need to apply the appropriate regulations to properly classify your shipment for transportation.

International transport regulations					
Regulatory	UN/NA	Proper shipping name	Classes/*PG	Reportable	
information	number			Quantity (RQ)	
CFR	2735	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Poly(oxypropylene) diamine)	Class 8 II		
IMO/IMDG	2735	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Poly(oxypropylene) diamine)	Class 8 II		
IATA (Cargo)	2735	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Poly(oxypropylene) diamine)	Class 8 II		
*PG : Packing group					
Special precautions for user		containers that are u	containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident		

Section 15. Regulatory information

United States

U.S. Federal regulations	:	United States - TSCA 12(b) - Chemical export notification: None required.
		United States - TSCA 5a2 - Final significant new use rules: Not listed
		United States - TSCA 5a2 - Proposed significant new use rules: Not
		listed
		United States - TSCA 5(e) - Substances consent order: Not listed
		SARA 311/312 Classification - SKIN CORROSION, Category 1B
		SARA 311/312 Classification - SERIOUS EYE DAMAGE, Category 1
		SARA 311/312 Classification - RESPIRATORY SENSITISATION,
		Category 1
		SARA 311/312 Classification - REPRODUCTIVE TOXICITY, Category
		2
		SARA 311/312 Classification - SPECIFIC TARGET ORGAN TOXICITY
		- REPEATED EXPOSURE, blood system, liver, lungs, Category 1
		SARA 311/312 Classification - Not applicable

Form R - Reporting requirements

Product name	CAS number
Phenol, 4-nonyl-, branched	84852-15-3

Supplier notification

Product name	CAS number
Phenol, 4-nonyl-, branched	84852-15-3

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

California Prop. 65:

This product does not require a Safe Harbor warning under California Prop. 65.

United States inventory (TSCA	:	All components are active or exempted.
8b)		

International regulations

International lists: Canada inventory: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Korea inventory (KECI): All components are listed or exempted.
New Zealand Inventory (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
United States inventory (TSCA 8b): All components are active or exempted.
Taiwan inventory (TCSI): All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System III (U.S.A.) :

Health	*	3
Flammability		1
Physical hazards		0

Caution: HMIS[®] ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS[®] ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS[®] ratings are to be used with a fully implemented HMIS[®] program. HMIS[®] is a registered mark of the National Paint & Coatings Association (NPCA). HMIS[®] materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material. For more information on HMIS[®] Personal Protective Equipment (PPE) codes, consult the HMIS[®] Implementation Manual.

Full text of abbreviated H statements

: Not applicable.

<u>History</u>

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Date of previous issue	:	04/27/2022
Version	:	9.0
Prepared by	:	Product Safety Stewardship
Key to abbreviations	:	ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Internediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail UN = United Nations
References	:	Not available

Notice to reader

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.