

according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended

Creation Date 09-Nov-2010

Revision Date 01-Feb-2024

Revision Number 6

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

1.1. Product identifier

Product Description:	N,N'-Diisopropylcarbodiimide
Cat No. :	A19292
Synonyms	DIC; Diisopropylcarbodiimide; N,N'-Methanetetraylbis(2-propanamine)
CAS No	693-13-0
EC No	211-743-7
Molecular Formula	C7 H14 N2
REACH registration number	-

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

Recommended Use Sector of use	Laboratory chemicals. SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
Product category	PC21 - Laboratory chemicals
Process categories	PROC15 - Use as a laboratory reagent
Environmental release category	ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Uses advised against	No Information available

1.3. Details of the supplier of the safety data sheet

Company

Avocado Research Chemicals Ltd. (Part of Thermo Fisher Scientific) Shore Road, Heysham Lancashire, LA3 2XY, United Kingdom Office Tel: +44 (0) 1524 850506 Office Fax: +44 (0) 1524 850608

E-mail address

begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11 Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99 **CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Physical hazards

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Flammable liquids	Category 3 (H226)
Health hazards	
Acute Inhalation Toxicity - Vapors Skin Corrosion/Irritation Serious Eye Damage/Eye Irritation Respiratory Sensitization Skin Sensitization Specific target organ toxicity - (single exposure) Environmental hazards	Category 1 (H330) Category 2 (H315) Category 1 (H318) Category 1 (H334) Category 1 (H317) Category 3 (H335)
Acute aquatic toxicity Chronic aquatic toxicity	Category 1 (H400) Category 1 (H410)

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

- H226 Flammable liquid and vapor
- H330 Fatal if inhaled
- H315 Causes skin irritation
- H317 May cause an allergic skin reaction
- H318 Causes serious eye damage
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H335 May cause respiratory irritation
- H410 Very toxic to aquatic life with long lasting effects

Precautionary Statements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

- P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
- P310 Immediately call a POISON CENTER or doctor/physician

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P284 - Wear respiratory protection

P280 - Wear protective gloves/protective clothing/eye protection/face protection

2.3. Other hazards

Results of PBT and vPvB assessment Not applicable Decomposes in contact with water

Toxic to terrestrial vertebrates

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This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Diisopropylcarbodiimide	693-13-0	EEC No. 211-743-7	>95	Flam. Liq. 3 (H226) STOT SE 3 (H335) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Resp. Sens. 1 (H334) Skin Sens. 1 (H317) Acute Tox. 1 (H330) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Diisopropylcarbodiimide	-	1	-

REACH registration number

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.	
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.	
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.	
Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately.	
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.	
Self-Protection of the First Aider	Use personal protective equipment as required.	
4.2. Most important symptoms and effects, both acute and delayed		
	None reasonably foreseeable. Causes severe eye damage. May cause allergy or asthma	

None reasonably foreseeable. Causes severe eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

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

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SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons No information available.

5.2. Special hazards arising from the substance or mixture

Flammable. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products

Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO₂).

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

6.3. Methods and material for containment and cleaning up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Take precautionary measures against static discharges.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame.

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Class 3

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

No information available

Predicted No Effect Concentration (PNEC)

No information available.

8.2. Exposure controls

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that evewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting equipment.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection	Goggles (European standard - EN 166)
Hand Protection	Protective gloves

	Glove material Natural rubber Nitrile rubber Neoprene PVC	Breakthrough time See manufacturers recommendations		EU standard EN 374	Glove comments (minimum requirement)
5	Skin and body prot	ection Longs	leeved clothing.		

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger

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of cuts, abrasion.

Explosive Properties

Remove gloves with care avoiding skin contamination.

Respiratory Protection	Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly
Large scale/emergency use	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced Recommended Filter type: Organic gases and vapours filter Type A Brown conforming to EN14387
Small scale/Laboratory use	Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141 When RPE is used a face piece Fit Test should be conducted
Environmental exposure controls	Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State	Liquid	
Appearance Odor Odor Threshold Melting Point/Range Softening Point Boiling Point/Range Flammability (liquid) Flammability (solid,gas) Explosion Limits	Clear pungent No data available No data available No data available 145 - 148 °C / 293 - 298.4 °F Flammable Not applicable No data available	On basis of test data Liquid
Flash Point Autoignition Temperature Decomposition Temperature pH Viscosity Water Solubility Solubility in other solvents Partition Coefficient (n-octanol/wat Vapor Pressure	33 °C / 91.4 °F No data available No data available No information available No data available Decomposes in contact with water No information available er) No data available	Method - No information available
Density / Specific Gravity Bulk Density Vapor Density Particle characteristics	0.810 Not applicable No data available Not applicable (liquid)	Liquid (Air = 1.0)
9.2. Other information		
Molecular Formula Molecular Weight	C7 H14 N2 126.2	

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10.1. Reactivity	None known, based on information available
10.2. Chemical stability	Stable under normal conditions.
10.3. Possibility of hazardous read	tions
Hazardous Polymerization Hazardous Reactions	Hazardous polymerization does not occur. None under normal processing.
<u>10.4. Conditions to avoid</u>	Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.
10.5. Incompatible materials	Acids.
10.6. Hazardous decomposition p	oducts Nitrogen oxides (NOx). Carbon monoxide (CO). Carbon dioxide (CO₂).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

(i) STOT-repeated exposure;

(a) acute toxicity; Oral Based on available data, the classification criteria are not met Dermal Based on available data, the classification criteria are not met Inhalation Category 1 Component LD50 Oral LD50 Dermal LC50 Inhalation 0.13 mg/L/4h (Rat) Diisopropylcarbodiimide (b) skin corrosion/irritation; Category 2 (c) serious eye damage/irritation; Category 1 (d) respiratory or skin sensitization; Respiratory Category 1 Skin Category 1 No information available Based on available data, the classification criteria are not met (e) germ cell mutagenicity; (f) carcinogenicity; Based on available data, the classification criteria are not met There are no known carcinogenic chemicals in this product (g) reproductive toxicity; Based on available data, the classification criteria are not met (h) STOT-single exposure; Category 3 **Results / Target organs** Respiratory system.

Based on available data, the classification criteria are not met

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Target Organs	None known.
(j) aspiration hazard;	Based on available data, the classification criteria are not met
Symptoms / effects,both acute and delayed	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

11.2. Information on other hazards

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Endocrine Disrupting Properties	Assess endocrine disrupting properties for human health. known or suspected endocrine disruptors.	This product does not contain any
	kilowii or suspected endocime disruptors.	

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity Ecotoxicity effects

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment. Reacts with water so no ecotoxicity data for the substance is available.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Diisopropylcarbodiimide		LC50 = 0.91 mg/L 48h (Daphnia	
		magna)	

Component	Microtox	M-Factor
Diisopropylcarbodiimide		1

12.2. Persistence and degradability	Not readily biodegradable
Persistence	Persistence is unlikely, based on information available.
Degradability	Decomposes in contact with water.
Degradation in sewage treatment plant	Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants. Decomposes in contact with water.
12.3. Bioaccumulative potential	Product does not bioaccumulate due to reaction with water
<u>12.4. Mobility in soil</u>	Decomposes in contact with water Is not likely mobile in the environment.
12.5. Results of PBT and vPvB assessment	Results of PBT and vPvB assessment. Not applicable. Decomposes in contact with water.
<u>12.6. Endocrine disrupting</u> properties Endocrine Disruptor Information	This product does not contain any known or suspected endocrine disruptors
12.7. Other adverse effects	

SECTION 13: DISPOSAL CONSIDERATIONS

This product does not contain any known or suspected substance

This product does not contain any known or suspected substance

13.1. Waste treatment methods

Persistent Organic Pollutant

Ozone Depletion Potential

Waste from Residues/Unused

Waste is classified as hazardous. Dispose of in accordance with the European Directives

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Products	on waste and hazardous waste. Dispose of in accordance with local regulations.
Contaminated Packaging	Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.
European Waste Catalogue (EWC)	According to the European Waste Catalog, Waste Codes are not product specific, but application specific.
Other Information	Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Can be landfilled or incinerated, when in compliance with local regulations. Do not empty into drains. Do not let this chemical enter the environment.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number 14.2. UN proper shipping name Technical Shipping Name 14.3. Transport hazard class(es) Subsidiary Hazard Class 14.4. Packing group	UN3384 TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. N,N'-Diisopropylcarbodiimide 6.1 3 I
ADR	
<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> Technical Shipping Name <u>14.3. Transport hazard class(es)</u> Subsidiary Hazard Class <u>14.4. Packing group</u>	UN3384 TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. N,N'-Diisopropylcarbodiimide 6.1 3 I
IATA	FORBIDDEN FOR IATA TRANSPORT
<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> Technical Shipping Name 14.3. Transport hazard class(es)	UN3384 TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S.*, FORBIDDEN FOR IATA TRANSPORT N,N'-Diisopropylcarbodiimide 6.1
Subsidiary Hazard Class 14.4. Packing group	3 I
14.5. Environmental hazards	Dangerous for the environment Product is a marine pollutant according to the criteria set by IMDG/IMO
14.6. Special precautions for user	No special precautions required.
14.7. Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

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Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Diisopropylcarbodiimide	693-13-0	211-743-7	-	-	-	Х	-	-	-
Component	CAS No	TSCA	TSCA In	ventory	DSL	NDSL	AICS	NZIoC	PICCS
			notific	ation -					
			Active-	nactive					
Diisopropylcarbodiimide	693-13-0	Х	ACT	IVE	-	Х	-	Х	Х

Legend: X - Listed '-' - Not Listed

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

Not applicable

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization		REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Diisopropylcarbodiimide	693-13-0	-	-	-

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Seveso III Directive (2012/18/	
		Qualifying Quantities for Major Accident	Qualifying Quantities for Safety Report
		Notification	Requirements
Diisopropylcarbodiimide	693-13-0	Not applicable	Not applicable

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)? Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification

Water endangering class = 3 (self classification)

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

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H330 - Fatal if inhaled	
H315 - Causes skin irritation	
H317 - May cause an allergic skin reaction	
H318 - Causes serious eye damage	
H334 - May cause allergy or asthma symptoms or breathing diffic	culties if inhaled
H335 - May cause respiratory irritation	
H400 - Very toxic to aquatic life	
H410 - Very toxic to aquatic life with long lasting effects	
H226 - Flammable liquid and vapor	
Le	gend
CAS - Chemical Abstracts Service	TSCA - United States Toxic Substances Control Act Section 8(b)
	Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical	DSL/NDSL - Canadian Domestic Substances List/Non-Domestic
Substances/EU List of Notified Chemical Substances	Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances	ENCS - Japanese Existing and New Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances	AICS - Australian Inventory of Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances	NZIOC - New Zealand Inventory of Chemicals
WEL - Workplace Exposure Limit	TWA - Time Weighted Average
ACGIH - American Conference of Governmental Industrial Hygienists	IARC - International Agency for Research on Cancer
DNEL - Derived No Effect Level	Predicted No Effect Concentration (PNEC)
RPE - Respiratory Protective Equipment	LD50 - Lethal Dose 50%
LC50 - Lethal Concentration 50%	EC50 - Effective Concentration 50%
NOEC - No Observed Effect Concentration	POW - Partition coefficient Octanol:Water
PBT - Persistent, Bioaccumulative, Toxic	vPvB - very Persistent, very Bioaccumulative
ADR - European Agreement Concerning the International Carriage of	ICAO/IATA - International Civil Aviation Organization/International Air
Dangerous Goods by Road	Transport Association
IMO/IMDG - International Maritime Organization/International Maritime	MARPOL - International Convention for the Prevention of Pollution from
Dangerous Goods Code	Ships
OECD - Organisation for Economic Co-operation and Development	ATE - Acute Toxicity Estimate
BCF - Bioconcentration factor	VOC - (Volatile Organic Compound)
Key literature references and sources for data	
https://echa.europa.eu/information-on-chemicals	7500
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, R	TEUS
Training Advice	
Chemical hazard awareness training, incorporating labelling, Safe	ety Data Sheets (SDS). Personal Protective Equipment (PPE) and

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers. Chemical incident response training.

Prepared By	Health, Safety and Environmental Department
Creation Date	09-Nov-2010
Revision Date	01-Feb-2024
Revision Summary	New emergency telephone response service provider.

This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.

Disclaimer

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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

End of Safety Data Sheet