



SAFETY DATA SHEET

Torlon AI-10 Polymer

1. Identification

Product identifier

Product name Torlon AI-10 Polymer

Chemical name Polyamide imide

Product number TORL-AI-10-20KG

Recommended use of the chemical and restrictions on use

Application Industrial use.

Uses advised against This product is designed for use by technically competent persons. Any use of this product, other than for its stated use, should not be attempted without expert review.

Details of the supplier of the safety data sheet

Supplier Kurt J Lesker Company

Manufacturer Kurt J Lesker Company
1925 Route 51
Jefferson Hills, PA 15025
+1 412-387-9200

Kurt J Lesker Company LTD
United Kingdom
Austin House
Sidney Little Road
Churchfields Industrial Estate
St Leonards on Sea, East Sussex, TN38 9PU, United Kingdom
Customer Service: +44 (0) 1424 458100
msds@lesker.com

Emergency telephone number

Emergency telephone Emergency Numbers
North America [USA, Canada, Mexico]: 1-866-519-4752
Mainland China: (+86) 4001 2001 74
Europe: {int'l call prefix}-1-760-476-3961
Asia Pacific: {int'l call prefix}-1-760-476-3960
Middle East & Africa: {int'l call prefix}-1-760-476-3959
South Korea: +080-880-0455
Philippines: (+63) 2 83953471

2. Hazard(s) identification

Classification of the substance or mixture

Physical hazards Combustible Dust - USH01

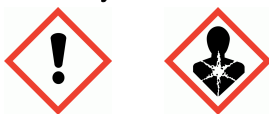
Health hazards Skin Sens. 1 - H317 Carc. 1B - H350 Repr. 1B - H360

Environmental hazards Not Classified

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Label elements

Hazard symbols



Signal word

Danger

Hazard statements

USH01 May form combustible dust concentrations in air.

H317 May cause an allergic skin reaction.

H350 May cause cancer.

H360 May damage fertility or the unborn child.

Precautionary statements

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P261 Avoid breathing dust.

P272 Contaminated work clothing must not be allowed out of the workplace.

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

P302+P352 If on skin: Wash with plenty of water.

P308+P313 If exposed or concerned: Get medical advice/ attention.

P321 Specific treatment (see medical advice on this label).

P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

P405 Store locked up.

P501 Dispose of contents/ container in accordance with national regulations.

Contains

2-Pyrrolidinone, 1-methyl

3. Composition/information on ingredients

Mixtures

Poly(amide-imide) polymer	94%
CAS number: —	
2-Pyrrolidinone, 1-methyl	5.8%
CAS number: 872-50-4	
4,4'-diaminodiphenylmethane	0.20%
CAS number: 101-77-9	

Composition comments

The exact percentage is withheld as a trade secret in accordance with 29 CFR 1910.1200.

4. First-aid measures

Description of first aid measures

General information

Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel.

Inhalation

Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Loosen tight clothing such as collar, tie or belt. Get medical attention if symptoms are severe or persist.

Ingestion

Rinse mouth thoroughly with water. Get medical advice/attention if you feel unwell. Do not induce vomiting unless under the direction of medical personnel. Get medical attention if a large quantity has been ingested.

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Skin Contact Wash skin thoroughly with soap and water or use an approved skin cleanser. Wash contaminated clothing before reuse. Cool skin rapidly with cold water after contact with hot polymer. Do not peel polymer from the skin. Get medical attention.

Eye contact Rinse with water. Continue to rinse for at least 15 minutes and get medical attention.

Protection of first aiders First aid personnel should wear appropriate protective equipment during any rescue.

Most important symptoms and effects, both acute and delayed

General information The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation Difficulty in breathing. Coughing, chest tightness, feeling of chest pressure.

Ingestion Ingestion may cause severe irritation of the mouth, the esophagus and the gastrointestinal tract.

Skin contact Prolonged contact may cause dryness of the skin. Contains components which may penetrate the skin. May cause defatting of the skin but is not an irritant. Mild dermatitis, allergic skin rash.

Eye contact Causes eye irritation.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

Special hazards arising from the substance or mixture

Specific hazards Combustible Material In a fire, the polymer melts, producing droplets which may propagate fire. Heating may cause a fire or explosion.

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors. Carbon dioxide (CO₂). Carbon monoxide (CO). Toxic gases or vapors.

Advice for firefighters

Protective actions during firefighting Avoid breathing fire gases or vapors. Evacuate area. Keep upwind to avoid inhalation of gases, vapors, fumes and smoke. Ventilate closed spaces before entering them. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk.

Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment.

Methods and material for containment and cleaning up

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Methods for cleaning up	Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Collect spillage with a shovel and broom, or similar and reuse, if possible. Collect and place in suitable waste disposal containers and seal securely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. For waste disposal, see Section 13. Avoid generation and spreading of dust. Avoid spreading dust or contaminated materials.
Reference to other sections	For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions	Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Keep container tightly sealed when not in use. May damage fertility. May damage the unborn child. Pregnant or breastfeeding women should not work with this product if there is any risk of exposure. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers. Static electricity and formation of sparks must be prevented. Ground/bond container and receiving equipment.
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Advice on general occupational hygiene	Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse.
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Conditions for safe storage, including any incompatibilities

Storage precautions	Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Avoid dust formation. Do not store near heat sources or expose to high temperatures.
Storage class	Chemical storage.

8. Exposure controls/Personal protection

Exposure controls

Protective equipment



Appropriate engineering controls	Provide adequate general and local exhaust ventilation. Ensure the ventilation system is regularly maintained and tested. Good general ventilation should be adequate to control worker exposure to airborne contaminants. Observe any occupational exposure limits for the product or ingredients.
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Eye/face protection	Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Dust-resistant, chemical splash goggles. Wear tight-fitting, dust-resistant, chemical splash goggles if airborne dust is generated.
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Hand protection	Wear protective gloves. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with OSHA 1910.138 and be demonstrated to be impervious to the chemical and resist degradation. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.
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Other skin and body protection	Wear appropriate clothing to prevent any possibility of skin contact.
Hygiene measures	Wash hands thoroughly after handling. Wash at the end of each work shift and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.
Respiratory protection	Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with OSHA 1910.134. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134.
Environmental exposure controls	Keep container tightly sealed when not in use. 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.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Solid. Powder.
Color	Yellow.
Odor	Odorless.
Odor threshold	Not available.
pH	Not applicable.
Melting point	280°C/536°F
Initial boiling point and range	Not applicable.
Flash point	> 93°C/200°F
Evaporation rate	Not applicable.
Flammability (solid, gas)	May form combustible dust concentrations in air.
Upper/lower flammability or explosive limits	Dust may form explosive mixture with air.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Bulk density	Not available.
Solubility(ies)	Insoluble in water.
Auto-ignition temperature	Not applicable.
Decomposition Temperature	500°C/932°F
Viscosity	Not applicable.
Explosive properties	Dust may form explosive mixture with air.
Oxidizing properties	No specific test data are available.
Molecular weight	Not available.

10. Stability and reactivity

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Reactivity	No test data specifically related to reactivity available for this product or its ingredients.
Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions	No potentially hazardous reactions known. Will not polymerize.
Conditions to avoid	Avoid generation and spreading of dust. Avoid heat, flames and other sources of ignition.
Materials to avoid	Data lacking.
Hazardous decomposition products	Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors. Carbon dioxide (CO ₂).

11. Toxicological information

Information on toxicological effects

Acute toxicity - oral

Summary Acute Tox. = Acute toxicity

Notes (oral LD₅₀) Acute Tox. = Acute toxicity Expert judgement.

Acute toxicity - dermal

Summary May be slightly irritating to skin and eyes.

Notes (dermal LD₅₀) The product is irritating to eyes and skin.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data Causes skin irritation.

Serious eye damage/irritation

Summary Irritating to eyes.

Respiratory sensitization

Summary Not sensitizing.

Respiratory sensitization Based on available data the classification criteria are not met.

Skin sensitization

Summary May cause sensitisation by skin contact.

Germ cell mutagenicity

Genotoxicity - in vitro Contains an ingredient listed as: Positive.

Genotoxicity - in vivo Contains an ingredient listed as: Gene mutation: Positive with metabolic activation.

Carcinogenicity

Carcinogenicity Contains a substance which may be potentially carcinogenic.

IARC carcinogenicity IARC Group 2A Probably carcinogenic to humans.

NTP carcinogenicity Reasonably anticipated to be a human carcinogen.

OSHA Carcinogenicity Listed as a carcinogen under OSHA

Reproductive toxicity

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Reproductive toxicity - fertility	May damage fertility.
Reproductive toxicity - development	May damage the unborn child.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	A single exposure may cause the following adverse effects: Chronic inflammation of nose, throat and bronchial tubes. Defatting, drying and cracking of skin.
Target organs	Respiratory tract Skin Gastro-intestinal tract, liver, immune system
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	Prolonged or repeated exposure may cause the following adverse effects: May cause nausea, headache, dizziness and intoxication. Vapors may cause headache, fatigue, dizziness and nausea. Causes skin and eye irritation. May be harmful if inhaled. May be harmful if swallowed.
Target organs	Liver Lungs Skin
<u>Aspiration hazard</u>	
Aspiration hazard	Not relevant. Solid.
General information	
	Avoid contact during pregnancy/while nursing. May damage fertility. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Irritation of nose, throat and airway. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin Contact	Prolonged contact may cause dryness of the skin.
Eye contact	Causes eye irritation.
Route of exposure	Ingestion Inhalation Skin and/or eye contact
Target Organs	Gastro-intestinal tract, liver, immune system Liver Mucous membranes Respiratory system, lungs Respiratory tract Skin Eyes

12. Ecological information

Ecotoxicity	The product contains a substance which is harmful to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.
<u>Acute aquatic toxicity</u>	
Summary	Contains an ingredient listed as: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
<u>Chronic aquatic toxicity</u>	
Summary	The product contains a substance which is very toxic to aquatic organisms.
<u>Persistence and degradability</u>	
Persistence and degradability	The product contains persistent (not readily degradable) substances.
Phototransformation	Data lacking.
Biodegradation	Not readily biodegradable.
<u>Bioaccumulative potential</u>	
Bio-Accumulative Potential	Bioaccumulation is unlikely to be significant because of the low water-solubility of this product.
<u>Mobility in soil</u>	

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Mobility Semi-mobile.

Other adverse effects

Other adverse effects The product contains a substance which is very toxic to aquatic organisms.

13. Disposal considerations

Waste treatment methods

General information The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal methods Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

14. Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DOT).

Road transport notes Not regulated.

Rail transport notes Not regulated.

Sea transport notes Not regulated.

Air transport notes Not regulated.

DOT transport notes Not regulated.

UN Number

UN No. (International) Not applicable.

UN No. (DOT) Not applicable.

UN proper shipping name

Proper shipping name (International) Not applicable.

Proper shipping name (DOT) Not applicable.

Transport hazard class(es)

Transport Labels (International) No transport warning sign required.

DOT transport labels
No transport warning sign required.

Packing group

Packing group (International) Not applicable.

DOT packing group Not applicable.

Environmental hazards

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Environmentally Hazardous Substance

No.

Special precautions for user

Not applicable.

DOT reportable quantity Not applicable.

DOT TIH Zone Not applicable.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities

None of the ingredients are listed or exempt.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

None of the ingredients are listed or exempt.

SARA Extremely Hazardous Substances EPCRA Reportable Quantities

Some of the ingredients are listed or exempt.

SARA 313 Emission Reporting

Some of the ingredients are listed or exempt.

CAA Accidental Release Prevention

None of the ingredients are listed or exempt.

FDA - Essential Chemical

None of the ingredients are listed or exempt.

FDA - Precursor Chemical

None of the ingredients are listed or exempt.

SARA (311/312) Hazard Categories

Combustible Dust
Reproductive toxicity
Carcinogenicity

OSHA Highly Hazardous Chemicals

None of the ingredients are listed or exempt.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

This product can expose you to chemicals including 2-Pyrrolidinone, 1-methyl, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.
This product can expose you to 4,4'-diaminodiphenylmethane, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

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California Proposition 65 Labelling



WARNING

This product can expose you to 2-Pyrrolidinone, 1-methyl, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

This product can expose you to 4,4'-diaminodiphenylmethane, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Air Toxics "Hot Spots" (A-I)

None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-II)

None of the ingredients are listed or exempt.

California Directors List of Hazardous Substances

None of the ingredients are listed or exempt.

Label Prop 65 data

Cancer and Reproductive Harm - www.p65warnings.ca.gov

Inventories

EU - EINECS/ELINCS

All the ingredients are listed or exempt.

Canada - DSL/NDSL

All the ingredients are listed or exempt.

US - TSCA

All the ingredients are listed or exempt.

US - TSCA 12(b) Export Notification

None of the ingredients are listed or exempt.

Australia - AICS

All the ingredients are listed or exempt.

Japan - ENCS

Some of the ingredients are listed or exempt.

Korea - KECI

All the ingredients are listed or exempt.

China - IECSC

All the ingredients are listed or exempt.

Philippines - PICCS

Not determined.

16. Other information

Revision comments

NOTE: Lines within the margin indicate significant changes from the previous revision.

Issued by

HS&E Manager.

Revision date

7/1/2022

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Revision	12
Supersedes date	6/22/2022
SDS No.	5980
SDS status	Approved.
Hazard statements in full	H317 May cause an allergic skin reaction. H350 May cause cancer. H360 May damage fertility or the unborn child. USH01 May form combustible dust concentrations in air.
End of SDS	<hr/>

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.