



1. PRODUCT AND COMPANY IDENTIFICATION

Company

Arkema Inc.
2000 Market Street
Philadelphia, Pennsylvania 19103

Technical Polymers

Customer Service Telephone Number: (800) 932-0420
(Monday through Friday, 8:30 AM to 5:30 PM EST)

Emergency Information

Transportation: CHEMTREC: (800) 424-9300
(24 hrs., 7 days a week)
Medical: Rocky Mountain Poison Center: (303) 623-5716
(24 hrs., 7 days a week)

Product Information

Product name: RILSAN® BESNO TL
Synonyms: Not available
Molecular formula: (C₁₁H₂₃NO₂)_x
Chemical family: polyamide
Product use: Mouldings and Extrusion

2. HAZARDS IDENTIFICATION

Emergency Overview

Color: translucent
Physical state: solid
Form: pellets
Odor: odourless

CAUTION!
PROCESSING MAY RELEASE VAPORS AND/OR FUMES WHICH CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.

Potential Health Effects

Primary routes of exposure:
Inhalation and skin contact.

Signs and symptoms of acute exposure:
High molecular weight polymer. The product, in the form supplied, is not anticipated to produce significant adverse human health effects. Effects due to processing releases: Irritating to eyes, respiratory system and skin. Prolonged or repeated exposure may cause: nausea, headache, drowsiness, weakness, loss of consciousness, (severity of effects depends on extent of exposure).

Remarks:
Handle in accordance with good industrial hygiene and safety practice. This product may release fume and/or vapor of variable composition depending on processing time and temperature.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Wt/Wt	OSHA Hazardous
Undecanoic acid, 11-amino-, homopolymer	25587-80-8	> 98 %	N
Ethanediamide, N-(2-ethoxyphenyl)-N'-(2-ethylphenyl)-	23949-66-8	< 2 %	N
Phenol, 2,4-bis(1,1-dimethylethyl)-, phosphite (3:1)	31570-04-4	< 2 %	N
Phenol, 4,4'-butylidenebis[2-(1,1-dimethylethyl)-5-methyl-	85-60-9	< 2 %	N

The substance(s) marked with a "Y" in the Hazard column above, are those identified as hazardous chemicals under the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

While this material is not classified as hazardous under Federal OSHA regulations, this MSDS contains valuable information critical to the safe handling and proper use of this product. This MSDS should be retained and available for employees and other users of this product.

4. FIRST AID MEASURES

Inhalation:

If inhaled, remove to fresh air.

Skin:

In case of contact, immediately flush skin with plenty of water. If molten polymer gets on the skin, cool rapidly with cold water. Do not peel solidified product off the skin. Obtain medical treatment for thermal burns. Remove material from clothing. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes:

Immediately flush eye(s) with plenty of water. Obtain medical treatment for thermal burns.

Ingestion:

If swallowed, DO NOT induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

Flash point no data available

Auto-ignition temperature: no data available

Lower flammable limit (LFL): no data available

Upper flammable limit (UFL): no data available

Extinguishing media (suitable):

Water spray, Carbon dioxide (CO₂), Foam, Dry chemical

Protective equipment:

Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

Further firefighting advice:

Fire fighting equipment should be thoroughly decontaminated after use.

Fire and explosion hazards:

When burned, the following hazardous products of combustion can occur:

Carbon oxides

Hydrogen cyanide (hydrocyanic acid)

(traces)

6. ACCIDENTAL RELEASE MEASURES

In case of spill or leak:

Prevent further leakage or spillage if you can do so without risk. Ventilate the area. Sweep up and shovel into suitable properly labeled containers for prompt disposal. Possible fall hazard – floor may become slippery from leakage/spillage of product. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

7. HANDLING AND STORAGE

Handling**General information on handling:**

Avoid breathing processing fumes or vapors.

Avoid breathing dust.

Handle in accordance with good industrial hygiene and safety practices. These practices include avoiding unnecessary exposure and removal of material from eyes, skin, and clothing.

Storage**General information on storage conditions:**

Keep in a dry, cool place. Store in closed containers, in a secure area to prevent container damage and subsequent spillage.

Storage stability – Remarks:

Stable under recommended storage conditions.

Storage incompatibility – General:

Store separate from acids and oxidizers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Airborne Exposure Guidelines:****Particles Not Otherwise Specified / Nuisance Dust**

US. ACGIH Threshold Limit Values

Form:	Inhalable particles.
Time Weighted Average (TWA):	10 mg/m ³
Form:	Respirable particles.
Time Weighted Average (TWA):	3 mg/m ³

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

Form:	Respirable fraction.
PEL:	5 mg/m ³

Remarks: All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the Particulates Not Otherwise Regulated (PNOR) limit which is the same as the inert or nuisance dust limit of Table Z-3.

Form:	Total dust.
PEL:	15 mg/m ³

Remarks: All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the Particulates Not Otherwise Regulated (PNOR) limit which is the same as the inert or nuisance dust limit of Table Z-3.

Only those components with exposure limits are printed in this section. Limits with skin contact designation above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required. Limits with a sensitizer designation above mean that exposure to this material may cause allergic reactions.

Engineering controls:

Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

Respiratory protection:

Avoid breathing processing fumes or vapors. Avoid breathing dust. Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components and substances released during processing. Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe

respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

Skin protection:

Processing of this product releases vapors or fumes which may cause skin irritation. Minimize skin contamination by following good industrial hygiene practice. Wash hands and contaminated skin thoroughly after contact with processing fumes or vapors. Wash thoroughly after handling.

Eye protection:

Use good industrial practice to avoid eye contact. Processing of this product releases vapors or fumes which may cause eye irritation. Where eye contact may be likely, wear chemical goggles and have eye flushing equipment available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	translucent
Physical state:	solid
Form:	pellets
Odor:	odourless
pH:	no data available
Density:	no data available
Specific Gravity (Relative density):	no data available
Vapor pressure:	no data available
Vapor density:	no data available
Boiling point/boiling range:	no data available
Freezing point:	no data available
Melting point/range:	347 - 374 °F (175 - 190 °C)
Solubility in water:	negligible

10. STABILITY AND REACTIVITY

Stability:

The product is stable under normal handling and storage conditions.

Hazardous reactions:

Hazardous polymerization does not occur.

Materials to avoid:

Strong acids and oxidizing agents

Conditions / hazards to avoid:

See Hazardous Decomposition Products below.

Hazardous decomposition products:

Thermal decomposition giving toxic and corrosive products :

Carbon monoxide

Ammonia

Amino derivatives

11. TOXICOLOGICAL INFORMATION

Data on this material and/or its components are summarized below.

Data for Undecanoic acid, 11-amino-, homopolymer (25587-80-8)

Acute toxicity

Skin Irritation:

Non-irritating. (rabbit) 0/8. (4 h)

Genotoxicity

Assessment in Vitro:

No genetic changes were observed in laboratory tests using: bacteria

Data for Ethanediamide, N-(2-ethoxyphenyl)-N'-(2-ethylphenyl)- (23949-66-8)

Acute toxicity

Oral:

Practically nontoxic. (rat) LD50 > 5,000 mg/kg.

Skin Irritation:

Non-irritating. (rabbit)

Eye Irritation:

Non-irritating. (rabbit)

Data for Phenol, 2,4-bis(1,1-dimethylethyl)-, phosphite (3:1) (31570-04-4)

Acute toxicity

Oral:

Practically nontoxic. (rat) > 6,000 mg/kg.

Dermal:

No more than slightly toxic. (rat) > 2,000 mg/kg.

Skin Irritation:

Non-irritating. (rabbit)

Eye Irritation:

Non-irritating. (rabbit)

Skin Sensitization:

Repeated skin exposure. (guinea pig) No skin allergy was observed.

Repeated dose toxicity

Repeated oral administration to dog / No adverse effects reported.

Repeated oral administration to rat / affected organ(s): kidney / signs: changes in organ weights

Chronic oral administration to rat / No adverse effects reported.

Genotoxicity**Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria, animal cells

Genotoxicity**Assessment in Vivo;**

No genetic changes were observed in laboratory tests using: animals

Developmental toxicity

Exposure during pregnancy. oral (rabbit) / No birth defects were observed.

Reproductive effects

Multiple generation reproduction test. oral (rat) / No toxic effects for reproduction

Data for Phenol, 4,4'-butylidenebis[2-(1,1-dimethylethyl)-5-methyl- (85-60-9)]**Acute toxicity****Oral:**

Practically nontoxic. (rat) LD50 > 7,940 mg/kg.

Dermal:

Practically nontoxic. (rabbit) LD50 > 7,940 mg/kg.

Skin Irritation:

Non-irritating. (rabbit) 0.0/8.0. (24 h)

Eye Irritation:

Slightly irritating. (rabbit) 3.0/110.

Repeated dose toxicity

Repeated oral administration to rat / affected organ(s): Liver, blood / signs: increased organ weight,

reduced body weight, blood chemistry changes, changes in organ structure or function

Genotoxicity

Assessment in Vitro:

No genetic changes were observed in laboratory tests using: bacteria, animal cells

Reproductive effects

Repeated administration. oral (rat) / No toxicity to reproduction.

Human experience

Skin contact:

No skin allergy was observed. (repeated or prolonged exposure)

12. ECOLOGICAL INFORMATION

Chemical Fate and Pathway

Data on this material and/or its components are summarized below.

Data for Ethanediamide, N-(2-ethoxyphenyl)-N'-(2-ethylphenyl)- (23949-66-8)

Biodegradation:

Not biodegradable.

Data for Phenol, 2,4-bis(1,1-dimethylethyl)-, phosphite (3:1) (31570-04-4)

Biodegradation:

Not biodegradable. (Modified Sturm Test, 28 d) aerobic systems 6 % / OECD Guideline 301 B / activated sludge

Practically no potential to bioaccumulate.

Data for Phenol, 4,4'-butylidenebis[2-(1,1-dimethylethyl)-5-methyl]- (85-60-9)

Biodegradation:

Not readily biodegradable. (aerobic systems, 35 d) biodegradation 5 %

Ecotoxicology

Data on this material and/or its components are summarized below.

Data for Ethanediamide, N-(2-ethoxyphenyl)-N'-(2-ethylphenyl)- (23949-66-8)

Aquatic toxicity data:

Practically nontoxic. Fish LC50 = 100 mg/l

Aquatic invertebrates:

Practically nontoxic. Daphnia 24 h EC50 > 100 mg/l

Algae:

Practically nontoxic. Algae 72 h EC50 > 100 mg/l

Microorganisms:

Practically nontoxic. Aerobic wastewater bacteria IC50 > 100 mg/l

Data for Phenol, 2,4-bis(1,1-dimethylethyl)-, phosphite (3:1) (31570-04-4)**Aquatic toxicity data:**

Moderately toxic. Brachydanio rerio (zebra fish) 96 h LC50 = 4.05 mg/l
Slightly toxic. Leuciscus idus (Golden orfe) 96 h LC50 = 42 mg/l
Slightly toxic. Oncorhynchus mykiss (rainbow trout) 96 h LC50 = 49 mg/l
Slightly toxic. Cyprinus carpio (Carp) 96 h LC50 = 66 mg/l
Slightly toxic. Ictalurus catus (catfish) 96 h LC50 = 70 mg/l
Slightly toxic. Lepomis macrochirus (Bluegill sunfish) 96 h LC50 = 84 mg/l

Aquatic invertebrates:

Practically nontoxic. Daphnia magna (Water flea) 24 h EC50 = 510 mg/l

Algae:

No more than slightly toxic. Green algae 72 h EC50 > 75.2 mg/l

Microorganisms:

Practically nontoxic. Bacteria 3 h EC50 > 100 mg/l

Data for Phenol, 4,4'-butylidenebis[2-(1,1-dimethylethyl)-5-methyl- (85-60-9)**Aquatic toxicity data:**

Practically nontoxic. Pimephales promelas (fathead minnow), Bluegill sunfish, Oncorhynchus mykiss (rainbow trout) 96 h LC50 > 1,000 mg/l

Aquatic invertebrates:

Slightly toxic. Daphnia magna (Water flea) 48 h LC50 = 16 mg/l

Algae:

Practically nontoxic. Selenastrum capricornutum 96 h LC50 > 1,000 mg/l

13. DISPOSAL CONSIDERATIONS**Waste disposal:**

Where possible recycling is preferred to disposal or incineration. If recycling is not an option, incinerate or dispose of in accordance with federal, state, and local regulations. Pigmented, filled and/or solvent laden product may require special disposal practices in accordance with federal, state and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

14. TRANSPORT INFORMATION

US Department of Transportation (DOT): not regulated

International Maritime Dangerous Goods Code (IMDG): not regulated

15. REGULATORY INFORMATION

Chemical Inventory Status

EU. EINECS	EINECS	Conforms to
US. Toxic Substances Control Act	TSCA	The components of this product are all on the TSCA Inventory.
Australia. Industrial Chemical (Notification and Assessment) Act	AICS	Conforms to
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 133)	DSL	All components of this product are on the Canadian DSL list.
Japan. Kashin-Hou Law List	ENCS (JP)	Conforms to
Korea. Toxic Chemical Control Law (TCCL) List	KECI (KR)	Conforms to
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	PICCS (PH)	Conforms to
China. Inventory of Existing Chemical Substances	IECSC (CN)	Conforms to
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand	NZIOC	Conforms to

United States – Federal Regulations

SARA Title III – Section 302 Extremely Hazardous Chemicals:

The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

SARA Title III - Section 311/312 Hazard Categories:

No SARA Hazards

SARA Title III – Section 313 Toxic Chemicals:

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):

The components in this product are either not CERCLA regulated, regulated but present in negligible concentrations, or regulated with no assigned reportable quantity.

OSHA Regulated Carcinogens (NTP, IARC, OSHA Listed):

NTP:

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.



IARC:

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA:

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

United States – State Regulations

Massachusetts Right to Know

No components are subject to the Massachusetts Right to Know Act.

New Jersey Right to Know

No components are subject to the New Jersey Right to Know Act.

Pennsylvania Right to Know

Chemical Name

Undecanoic acid, 11-amino-, homopolymer

CAS-No.

25587-80-8

California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive defects.

16. OTHER INFORMATION

Latest Revision(s):

Revised Section(s):	NEW MSDS DOCUMENT FORMAT
Reference number:	00000035016
Date of Revision:	03/08/2010
Date Printed:	03/08/2010

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