



SAFETY DATA SHEET

1. Identification

Product identifier DUNAPOL™ AD 3140

Other means of identification

SDS number Version 1

Product code 202009

Recommended use Industrial use.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier

Company name DUNA-USA Inc.

Address 4210 FM 1405 Baytown, TX, 77523 United States

Telephone number 281-383-3862

e-mail franco.sala@dunagroup.com

Contact person Franco Sala

Emergency telephone

Number 800-424-9300

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Sensitization, respiratory	Category 1
	Sensitization, skin	Category 1
	Carcinogenicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, repeated Exposure	Category 2 (respiratory system)

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Harmful if inhaled. Causes skin irritation. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Suspected of causing cancer. May cause respiratory irritation. May cause damage to organs (respiratory system) through prolonged or repeated exposure by inhalation.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate

ventilation wear respiratory protection. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Use only outdoors or in a well-ventilated area.

Response If exposed or concerned: Get medical advice/attention. If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center/doctor.

Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Polytetramethylene-MDI-Copolymer	9048-58-2	50-75
Methylene diphenyl diisocyanate	101-68-8	10-20
O-(p-isocyanatobenzyl)phenyl Isocyanate	5873-54-1	5-10
Polymethylene polyphenyl isocyanate	9016-87-9	5-10
Tripropylene glycol-Diphenyl methane diisocyanate	52747-01-0	1-5

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately.

Skin contact Immediately flush skin with plenty of water. Take off contaminated clothing and wash before reuse. In case of rashes, wounds or other skin disorders: Seek medical attention and bring along these instructions.

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

Ingestion Immediately rinse mouth and drink plenty of water. Keep person under observation. If person becomes uncomfortable take to hospital along with these instructions.

Most important symptoms/effects, acute and delayed Irritating to eyes, respiratory system and skin. Sensitization. Be aware that symptoms of lung edema (shortness of breath) may develop up to 24 hours after exposure.

Indication of immediate

medical attention and Treat symptomatically. Symptoms may be delayed.

special treatment needed

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing

media Foam. Dry powder. Carbon dioxide (CO₂).

Unsuitable extinguishing

Media Water jet.

Specific hazards arising

from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment

and precautions for

firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

Fire fighting

equipment/instructions Cool containers exposed to flames with water until well after the fire is out. Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards This product is not flammable.

6. Accidental release measures

Personal precautions, protective equipment and

emergency procedures Ensure adequate ventilation. Avoid inhalation of vapors and contact with skin and eyes. Wear appropriate personal protective equipment.

Methods and materials

for containment and

cleaning up

Absorb spillage with non-combustible, absorbent material. Collect in marked containers and deliver to approved depot. Following product recovery, flush area with water. For waste disposal, see Section 13 of the SDS.

Environmental

precautions Avoid release to the environment.

7. Handling and storage

Precautions for safe

handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Should be handled in closed systems, if possible. Persons susceptible for allergic reactions should not handle this product. Mechanical ventilation or local exhaust ventilation is required. Do not get in eyes, on skin, on clothing. Do not breathe mist or vapor. Observe good industrial hygiene practices. Good personal hygiene is necessary. Wash hands and contaminated areas with water and soap before leaving the work site. Work practice should minimize contact. Change contaminated clothing. Keep the workplace clean. Technical aids: Use disposable equipment (rags, brushes, spatulas, putty knives, etc.), if possible. Wear appropriate personal protective equipment. See Section 8 of the SDS for Personal Protective Equipment.

Conditions for safe storage, including any

incompatibilities

Store locked up. Store in a cool and well-ventilated place. Keep container tightly closed.

8. Exposure controls/personal protection

Occupational exposure limits

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

Components	Type	Value
Methylene diphenyl diisocyanate (CAS 101-68-8)	Ceiling	0.2 mg/m ³
		0.02 ppm
Polymethylene polyphenyl isocyanate (CAS 9016-87-9)	Ceiling	0.2 mg/m ³
		0.02 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Methylene diphenyl diisocyanate (CAS 101-68-8)	TWA	0.005 ppm
Polymethylene polyphenyl isocyanate (CAS 9016-87-9)	TWA	0.005 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Methylene diphenyl diisocyanate (CAS 101-68-8)	Ceiling	0.2 mg/m ³
		0.02 ppm
	TWA	0.05 mg/m ³
		0.005 ppm
Polymethylene polyphenyl isocyanate (CAS 9016-87-9)	Ceiling	0.2 mg/m ³
		0.02 ppm
	TWA	0.05 mg/m ³
		0.005 ppm

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

Appropriate engineering controls

Mix and prepare in a place with efficient exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors. Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment.

Eye/face protection Wear goggles/face shield.

Skin protection

Hand protection Use disposable gloves protecting against isocyanates along with cotton gloves closest to the

	skin. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.
Other	Protection suit must be worn.
Respiratory protection	Self-contained breathing apparatus. Wear NIOSH approved respirator. If respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene Considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Observe any medical surveillance requirements.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Liquid.
Color	Amber.
Odor	Slight.
Odor threshold	Not available.
pH	Not applicable.
Melting point / freezing point	<4°C

Initial boiling point and boiling range >200°C

Flash point >200°C

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit lower (%)	Not available.
Flammability limit upper (%)	Not available.
Explosive limit lower (%)	Not available.
Explosive limit upper (%)	Not available.

Vapor pressure <10⁻⁵ mmHg @ 25°C

Vapor density Not available.

Relative density 1.08 (25 °C)

Solubility(ies)

Solubility (water) Not available.

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

Auto-ignition temp. >400°C

Decomposition temp. Not available.

Viscosity 1750 cP (25 °C)

10. Stability and reactivity

Reactivity	Stable at normal conditions.
Chemical stability	The product is stable under normal conditions of use, storage and transport.
Possibility of hazardous reactions	Will not occur.
Conditions to avoid	High temperatures.
Incompatible materials	Oxidizing agents. Water.
Hazardous decomposition products	Carbon oxides. Nitrogen oxides. Cyanides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. Harmful if inhaled. May cause lung damage. Symptoms can be delayed.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Ingestion may cause irritation and malaise.

Symptoms related to the physical, chemical and toxicological characteristics Irritating to eyes, respiratory system and skin. Sensitization. Be aware that symptoms of lung edema (shortness of breath) may develop up to 24 hours after exposure.

Information on toxicological effects

Acute toxicity Harmful if inhaled.

Components	Species	Test Results
Methylene diphenyl diisocyanate (CAS 101-68-8)		
Acute		
<i>Inhalation</i>		
LC50	Rat	> 2.24 mg/l, 1 Hours

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye

Irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitization	May cause an allergic skin reaction.

Germ cell mutagenicity No data available.

Carcinogenicity Suspected of causing cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Methylene diphenyl diisocyanate (CAS 101-68-8)	3 Not classifiable as to carcinogenicity to humans.
O-(p-isocyanatobenzyl)phenyl Isocyanate (CAS 5873-54-1)	3 Not classifiable as to carcinogenicity to humans.
Polymethylene polyphenyl isocyanate (CAS 9016-87-9)	3 Not classifiable as to carcinogenicity to humans.
Polytetramethylene-MDI-Copolymer (CAS 9048-58-2)	3 Not classifiable as to carcinogenicity to humans.
Tripropylene glycol-Diphenyl methane diisocyanate (CAS 52747-01-0)	3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	No data available.
Specific target organ toxicity - single exposure	May cause respiratory tract irritation.
Specific target organ toxicity - repeated exposure	May cause damage to organs (respiratory system) through prolonged or repeated exposure by inhalation.
Aspiration hazard	No data available.
Chronic effects	May cause damage to organs through prolonged or repeated exposure by inhalation.
Further information	None known.

12. Ecological information

Ecotoxicity	The environmental hazard of the product is considered to be limited.
Persistence and degradability	The product reacts with water to form a solid insoluble reaction product which is non-degradable, according to information available.
Bioaccumulative potential	No data available.
Mobility in soil	The product is expected to be slowly biodegradable.
Other adverse effects	No data available.

13. Disposal considerations

Disposal instructions	Dispose of in accordance with local regulations.
Local disposal regulations	Dispose of in accordance with local regulations.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Dispose of in accordance with local regulations. Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.
Contaminated packaging	Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

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

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Methylene diphenyl diisocyanate (CAS 101-68-8)	LISTED
Polymethylene polyphenyl isocyanate (CAS 9016-87-9)	LISTED
Polytetramethylene-MDI-Copolymer (CAS 9048-58-2)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

Chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Polytetramethylene-MDI-Copolymer	9048-58-2	50 – 75
Methylene diphenyl diisocyanate	101-68-8	10 – 20
Polymethylene polyphenyl isocyanate	9016-87-9	5 – 10

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Methylene diphenyl diisocyanate (CAS 101-68-8)
Polymethylene polyphenyl isocyanate (CAS 9016-87-9)
Polytetramethylene-MDI-Copolymer (CAS 9048-58-2)

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

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Methylene diphenyl diisocyanate (CAS 101-68-8)
Polymethylene polyphenyl isocyanate (CAS 9016-87-9)
Polytetramethylene-MDI-Copolymer (CAS 9048-58-2)

US. New Jersey Worker and Community Right-to-Know Act

Methylene diphenyl diisocyanate (CAS 101-68-8)
O-(p-isocyanatobenzyl)phenyl Isocyanate (CAS 5873-54-1)
Polymethylene polyphenyl isocyanate (CAS 9016-87-9)
Polytetramethylene-MDI-Copolymer (CAS 9048-58-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Methylene diphenyl diisocyanate (CAS 101-68-8)
Polymethylene polyphenyl isocyanate (CAS 9016-87-9)
Polytetramethylene-MDI-Copolymer (CAS 9048-58-2)

US. Rhode Island RTK

Methylene diphenyl diisocyanate (CAS 101-68-8)
Polymethylene polyphenyl isocyanate (CAS 9016-87-9)
Polytetramethylene-MDI-Copolymer (CAS 9048-58-2)

US. California Proposition 65

Not Listed.

International Inventories

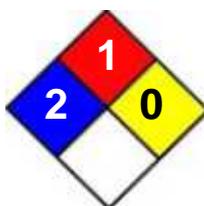
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

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

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

Issue date	26-March-2015
Revision date	-
Version #	01
Further information	HMIS® is a registered trade and service mark of the NPCA. Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe
HMIS® ratings	Health: 2* Flammability: 1 Physical hazard: 0
NFPA ratings	

**List of abbreviations**

LC50: Lethal Concentration, 50%.

Disclaimer

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.