



DAK Americas LLC
Material Safety Data Sheet

MSDS NUMBER: DK0022
REVISION: 02/02/2012

Array™ Specialty Polymer – COPOLYMER

1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

MATERIAL IDENTIFICATION:

Array™ Specialty Polymer – COPOLYMER: Clear & Semi-Dull

MANUFACTURER/DISTRIBUTOR:
DAK Americas LLC
5925 Carnegie Blvd., Suite 500
Charlotte, NC 28209

PHONE NUMBERS:

Product Information: 1-800-227-6335

Transport Emergency: CHEMTREC 1-800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENTS:

Material	CAS Number	%
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Semi-Dull Copolymer:

Isophthalate Polyester Copolymer		>95%
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Titanium Dioxide	13463-67-7	< 5%
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Clear Copolymer:

Isophthalate Polyester Copolymer		>99%
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Components (Remarks): Ingredients not precisely identified are proprietary or non-hazardous. Exposure limits for this copolymer have not been established. It is recommended that the exposure limits for polyethylene terephthalate resin be used as a guideline.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

CAUTION: MOLTEN MATERIAL CAN CAUSE THERMAL BURNS.

- Clear to grayish-white, odorless pellets.
- High concentrations of dusts may be an explosion hazard.
- Thermal processing may release irritating gases, vapors and/or fumes.

POTENTIAL HEALTH EFFECTS:

- Molten polymer will adhere to the skin and can cause severe burns.
- Eye contact with Polyethylene Terephthalate particles may cause mechanical irritation with discomfort, tearing, or blurring of vision.
- Decomposition products caused by overheating Polyethylene Terephthalate may cause skin, eye or respiratory tract irritation.

CARCINOGENICITY INFORMATION:

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

4. FIRST AID MEASURES

Inhalation: No specific intervention is indicated, as the compound is not likely to be hazardous by inhalation. However, if exposed to gases, vapors or fumes from overheating or combustion, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician if necessary.

Skin Contact: The compound is not likely to be hazardous by skin contact, but cleansing the skin after use is advisable. If molten material gets on skin, cool rapidly with cold water. Do not attempt to remove material from skin. Obtain medical treatment for thermal burn.

Eye Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If contact with molten material occurs, seek medical attention immediately. If contact with non-molten material occurs, consult physician.

Ingestion: Ingestion is not an expected route of exposure during normal use of the product. If ingested, consult a physician.

NOTE TO PHYSICIAN: Treat burns as thermal burns. The material will come off as healing occurs; therefore, immediate removal from the skin is not necessary.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: Not Applicable

Auto-ignition: No Data Available

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

Physical operations, such as grinding, can create dust and a potential dust explosion hazard. Under these conditions, follow National Fire Protection Association Codes and Standards for handling combustible dusts.

EXTINGUISHING MEDIA:

Water Fog, Foam, Carbon Dioxide, and Dry Chemical.

FIRE FIGHTING INSTRUCTIONS:

Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus. Wear full protective equipment.

6. ACCIDENTAL RELEASE MEASURES

SAFEGUARDS (PERSONNEL):

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

The interior of molten masses may remain hot for some time because of the low heat conductivity of the polymer. Use care when disposing of molten masses.

SPILL CLEAN UP:

Sweep up and recover, or mix material with moist absorbent and shovel into suitable chemical waste container.

7. HANDLING AND STORAGE

HANDLING (PERSONNEL):

- Do not breathe gases, vapors or fumes that may be evolved during processing. Caution and suitable personal protective equipment (PPE) must be used if handling hot/molten material. Contact with molten material can cause burns, so unprotected contact with molten material must be avoided.
- Keep spilled pellets swept up from walkways to minimize slipping hazards.
- Do not walk on spilled pellets.

HANDLING (PHYSICAL ASPECTS):

Avoid dust generation.

STORAGE:

Keep container closed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

- Use local ventilation to control gases, vapors and fumes from hot processing.
- Use static controls. Static charges can build up and ignite dust or solvent laden atmospheres. Design precautions into processes that can create dust, such as pneumatic conveying systems, grinding and other physical operations. There is the potential for a dust explosion hazard.

PERSONAL PROTECTIVE EQUIPMENT:

Eye/Face Protection:

Wear coverall chemical splash goggles when the possibility exists for eye or face contact from airborne material. Wear a face shield when working with molten material.

Respiratory Protection:

- Respirators are not needed for normal use.
- Where airborne concentrations are expected to exceed exposure limits, a NIOSH approved respirator should be selected based on the form and concentration of the contaminant in air and in accordance with the OSHA Respiratory Protection Standard (29 CFR 1910.134).

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Protective Clothing:

- If there is potential for contact with hot/molten material, wear heat-resistant impervious clothing and footwear.
- Special protective clothing is not needed for normal use. Gloves are recommended as good industrial practice.

Recommended Decontamination Facilities:

Eye bath, washing facilities

EXPOSURE GUIDELINES:

Applicable Exposure Limits:

Polyethylene Terephthalate

PEL (OSHA): None Established

TLV (ACGIH): None Established

AEL* (DuPont): 10 mg/m³, 8 Hr. TWA, total dust 5 mg/m³, 8 Hr. TWA, respirable dust

* AEL is DUPONT'S Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

- DAK AMERICAS ACCEPTS DUPONT'S AEL.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form:	Solid/Molten Polymer
Melting Point:	<u>Semi-Dull Copolymer:</u> 215° - 265° C <u>Clear Copolymer:</u> 165° - 255° C
Vapor Pressure:	Not Applicable
Vapor Density:	Not Applicable
Solubility in Water:	Insoluble
pH:	Not Applicable
Specific Gravity:	<u>Semi-Dull Copolymer:</u> 1.3 - 1.4 <u>Clear Copolymer:</u> >1
% Volatiles:	Negligible
Color:	Clear to grayish white
Odor:	Odorless

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:

Stable at normal conditions. Conditions to avoid - Temperatures above 330° C.

INCOMPATIBILITY WITH OTHER MATERIALS:

Incompatible or can react with strong oxidizers.

DECOMPOSITION:

Combustion products include carbon dioxide and carbon monoxide. Thermal decomposition products can include acetaldehyde and ethylene.

POLYMERIZATION:

Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

ANIMAL DATA:

Polyethylene Terephthalate

Oral Approximate Lethal Dose (ALD): > 10,000 mg/kg in rats

- Animal testing indicates that Polyethylene Terephthalate does not have carcinogenic, mutagenic, developmental or reproductive effects.
- Toxic effects from short exposures by inhalation resulted in no adverse effects.
- Toxic effects from short exposures by ingestion resulted in no adverse effects.

- Patch tests with humans resulted in no skin irritation or skin sensitization.
- Polyethylene Terephthalate is not a skin irritant, but is a mild eye irritant.

12. ECOLOGICAL INFORMATION

No toxicity data is available. The product is insoluble in water.

13. DISPOSAL CONSIDERATIONS

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

14. TRANSPORTATION INFORMATION

SHIPPING INFORMATION:

- DOT – Class Not Regulated.
- Sea – IMDG (International Maritime Dangerous Goods) – Class Not Regulated.
- Air – ICAO (International Civil Aviation Organization) – Class Not Regulated.

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

- TSCA Inventory Status: In compliance with TSCA Inventory requirements for commercial purposes.
- Under RCRA, it is the responsibility of the product user to determine at the time of disposal whether a material containing the product or derived from the product should be classified as a Hazardous waste (40 CFR 261.20-24).
- If discarded in its purchased form, this product does not meet the RCRA characteristic definition for ignitability, corrosivity or reactivity and is not a RCRA listed waste; however, it has not been tested by the Toxicity Characteristic Leaching Procedure (TCLP).
- SARA, Title III: This material is not known to contain extremely hazardous substances.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

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INTERNATIONAL REGULATIONS:

- DSL (Canadian Domestic Substances List) and CEPA (Canadian Environmental Protection Act): This product is listed on the DSL or otherwise complies with CEPA new substance notification requirements.
- EINECS (European Inventory of Existing Commercial Chemical Substances): This product is listed on EINECS or otherwise complies with EINECS requirements. Any polymer present in this product has regulatory clearance under Directives of the European Union.
- AICS / NICNAS (Australian Inventory of Chemical Substances and National Industrial Chemicals Notification and Assessment Scheme): This product is listed on AICS or otherwise complies with NICNAS.
- ECL (Korean Toxic Substances Control Act): This product is listed on the Korean inventory or otherwise complies with the Korean Toxic Substances Control Act.
- Philippines Inventory (PICCS): This product is listed on the Philippine Inventory or otherwise complies with PICCS.
- Inventory of Existing Chemical Substances in China: All components of this product are listed on the Inventory of Existing Chemical Substances in China (IECSC) or are not required to be listed on the Chinese inventory.
- No components of this product are on the Mexican Raw Materials Regulation.

16. ADDITIONAL INFORMATION

See DAK Caution Statement on next page.

End of MSDS

DAK Caution Bulletin No. 1

DO NOT USE DAK MATERIALS IN MEDICAL APPLICATIONS INVOLVING PERMANENT, BRIEF, OR TEMPORARY IMPLANTATION IN THE HUMAN BODY OR PERMANENT CONTACT WITH INTERNAL BODY FLUIDS OR TISSUES, UNLESS THE MATERIAL HAS BEEN PROVIDED DIRECTLY FROM DAK UNDER A CONTRACT WHICH EXPRESSLY ACKNOWLEDGES THE CONTEMPLATED USE.

DAK MAKES NO REPRESENTATION, PROMISE, EXPRESS WARRANTY OR IMPLIED WARRANTY CONCERNING THE SUITABILITY OF THESE MATERIALS FOR USE IN THE HUMAN BODY OR IN CONTACT WITH INTERNAL BODY FLUIDS OR TISSUES.

THE CONTENT OF DAK MATERIAL IS NOT CERTIFIED FOR IMPLANTS. DAK materials are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. DAK has not performed clinical testing of these materials for implantation. DAK will not provide to customers making implantable devices any notice concerning its materials, as specified under 21 C.F.R section 820.50, or any other information necessary for medical device use of the materials under any other statute or FDA regulation. DAK has neither sought, nor received, approval from the FDA for the use of these materials in implantation in the human body or in contact with internal body fluids or tissues.

ALL IMPLANTABLE MEDICAL DEVICES CARRY A RISK OF FAILURE AND ADVERSE CONSEQUENCES

The medical judgment of a physician, a medical device seller and the FDA should be relied upon for identification of both harmful consequences and life-saving benefits from an implantation device comprised of specific materials. These benefits and risks can be found in published medical cases performing clinical medical studies of an implantable medical device. DAK does not support the use of its products in these applications and cannot weigh the benefits against the risk defined in these articles. DAK can not offer a medical judgment on the safety or efficacy of the use of its materials in such devices.

DO NOT MAKE REFERENCE TO THE DAK NAME OR ANY DAK TRADEMARK IN ASSOCIATION WITH AN IMPLANTABLE MEDICAL DEVICE.

Do not use a DAK trademark or licensed trademark as the descriptive name of an implantable medical device (e.g. do not call it the "Delcron®" prosthesis, or do not call it a " Laser+® device").

End of Bulletin