



Product Safety Data Sheet (PSDS)

for Palram Polycarbonate Products

Update: August 2016

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This document covers safety data concerning the following products:

PALSUN® BASIC SERIES
 PALSUN® UV SERIES
 PALSUN® SPECIALTY SHEET SERIES
 PALSUN CS®
 PALGARD™
 SUNTUF®
 SUNTUF® PLUS
 SUNSKY®
 SUNOPAK™
 DYNAGLAS®
 SUNLITE®
 SUNLITE® PLUS
 THERMAGLAS®
 SUNPAL®
 SUNGLAZE™
 PALTILE™
 SUNTOP®
 SUNSPHERE™
 EDGELOCK™
 CHAIR-MAT

Palram Industries Ltd.
 Ramat Yohanan 30035, Israel
 Tel: +972.4.8459.900
 Fax: +972.4.8444.012
 E-mail: palram@palram.com
 Web: www.palram.com

Compliance with EU Regulation 1907/2006 (REACH)

The sheets manufactured by Palram are exempted from the requirement of the REACH regulation to provide customers with a Safety Data Sheet (EU No. 1907/2006, article 31) since they are defined as "articles." The information herein is provided by Palram as courtesy to its customers and a part of its service efforts. The sheets do not contain any substances on the candidate list for inclusion in Annex XIV of REACH above the threshold level of 0.1% by weight of the article.

1. Identification of the article and the company

1.1. Identification of the article

Trade Names : PALTUF®, PALSUN®, PALSUN® FR, PALGARD™, SUNTUF®, SunSky®, SUNOPAK™, DYNAGLAS®, SUNLITE®, Thermaglas®, SUNPAL®, SUNGLAZE™, PALTILE™, SUNTOP®, SUNSPHERE™, EdgeLock™, Chair-Mat.
 Product Name : Solid and Foamed Polycarbonate sheets
 Product Name : Polycarbonate Homopolymer
 CAS Number : 25307-45-0
 UN Number : None
 ACX Number : X1017917-2
 RTECS : Not listed
 Material Synonyms : PC
 NFPA Ratings : Health=0, Fire=1, Reactivity=0

1.2. Company Identification & Contact

Israel - Palram PVC	UK - Palram Polycarb	Americas - Palram 2000
Address: Ramat Yohanan, 30035, ISRAEL Tel: +972 4 8459 900 Fax: +972 4 8444 012	Address: Unit 2, Doncaster Carr Industrial Estate, White Rose Way Doncaster DN4 5JH, UK Tel: +44 1302 380738 Fax: +44 1302 380739	Address: 9735 Commerce Circle Kutztown, PA 19530, USA Tel: +610-285-9928 Fax: +484-647-8210

Local: Call your nearest poison control center.

2. Composition / Information of Ingredients

Main polymer: Polycarbonate – approximately 100 wt%.

Pigments and additives used to enhance specific properties are encapsulated in the polymer resin matter.

No cadmium, or other heavy metals based pigments or stabilizers used. This product does not contain reportable hazardous ingredients as defined by OSHA Hazard Communication Standard.

3. Hazards identification

No particular hazards known.

3.1. Health Hazard Data

3.1.1 Effects of a Single Overexposure

Swallowing : non-relevant
 Skin absorption : non-relevant
 Inhalation : non-relevant
 Skin contact : exposure is not expected to cause adverse health effects
 Eye contact : non-relevant

3.1.2 Effects Of A Repeated Overexposure - None currently known

3.1.3 Medical Conditions Aggravated By Overexposure - None currently known

3.1.4 Other Effects of Overexposure - None currently known





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4. First Aid Measures

In general handling the material will not cause accidents.

4.1. Inhalation

Route of entry – inhalation: No

If exposed to combustion fumes in high concentration - bring victim to fresh air. Medical attention needed.

4.2. Ingestion

Route of entry – ingestion: No

4.3. Skin Contact

Burns resulting from accidental contact with molten material must be flushed immediately with cold water.

Do not remove the polymer from the skin. Do not use solvent for removal. Medical attention needed.

4.4. Skin Absorption

Route of entry – skin: No

4.5. Eye Contact

Like any foreign body, can cause mechanical irritation. Remove contact lenses at once.

Immediately flush eyes well with copious quantities of water or normal saline for at least 20-30 minutes. If irritation persists, consult physician.

4.6. Notes For Physician

There are no specific notes.

5. Fire Fighting Measures

This material burns with difficulty and generally requires a continuous external flame source to sustain combustion. Without flashover fire conditions it will tend to extinguish it. When forced to burn it will produce a sooty fire.

Main products of combustion are carbon dioxide and carbon monoxide. Some flame-retardant grades will evolve trace quantities of hydrogen bromide on combustion.

Combustion products have been found in independent tests to be essentially non-corrosive.

5.1. Extinguishing Media

Water spray or foam. CO₂ is less recommended due to lack of cooling capacity.

5.2. Extinguishing Media to Avoid

No information currently available.

5.3. Special Fire Fighting Procedures

Personnel without suitable respiratory apparatus should leave the affected area to prevent exposure to toxic or combustible gases.

5.4. Special Protective Equipment for Firefighters

Positive-pressure self-contained breathing apparatus, protective clothing, gas mask approved for acid vapors.

5.5. Unusual Fire and Explosion Hazards

Hazardous combustion products may include intense heat, dense black smoke, carbon dioxide, carbon monoxide and hydrocarbon fragments. Combustion products/processing fumes may include trace levels of phenol, alkylphenols, and diarylcarbonates.

Soot emitted when PC is forced to burn may obscure visibility.

During combustion the base resin does not produce hydrogen cyanide, phosgene, acrolein, hydrogen chloride or sulfur dioxide.

The material is not sensitive to static discharge.

Static electricity discharge sparks possible at handling – avoid vicinity of static discharge sensitive materials.

6. Accidental Release Measures

No special precautions and no personal protective equipment needed. Collect mechanically for disposal.



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7. Handling and Storage

7.1. Handling

General handling precautions

Avoid mechanical contact with eyes. Use good industrial hygiene practices. Provide adequate ventilation. Secondary operations such as grinding, sanding or sawing may produce a dust explosion hazard. Use aggressive housekeeping activities to prevent dust accumulation; employ bonding, grounding, venting and explosion relief provisions in accordance with accepted engineering practices.

Ventilation

General (mechanical) room ventilation is expected to be satisfactory where this product is stored and handled.

Other precautions

No explosion hazard. In the event of fire, cool and overlap product with water. The material is not sensitive to static discharge. Static electricity discharge sparks possible during handling. Avoid contact or vicinity of flammable materials.

7.2. Storage

Store in a cool shady area. No special technical protective measures required.

8. Exposure Controls / Personal Protection

8.1. EXPOSURE LIMITS

No occupational exposure limits established by OSHA, ACGIH, or NIOSH.

8.2. PERSONAL PROTECTION

Respiratory protection	:	No special protection needed
Hand protection / protection gloves	:	No special protection needed
Eye protection	:	No special protection needed
Other protective equipment/measures	:	No special protection needed

9. Physical Properties

Appearance	:	Flat or corrugated plastic sheets
Physical State	:	Solid
Color	:	Clear or colored
Odor	:	None
Density	:	1.2 gr/cm ³
Change In State	:	T _g = 140-150°C, DSC according to ASTM D 792
Boiling Point, 760 Hg	:	None
Viscosity	:	Not relevant
Solubility In Water	:	None
Ph Value	:	Not relevant
Flash Point	:	>450°C ASTM D 1929
Autoignition Temp.	:	>650°C ASTM D 1921
Flammability Limit	:	None
Explosion Limits	:	None
Evaporation Rate	:	Not relevant
Percent Volatiles	:	Not relevant



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10. Stability and Reactivity

10.1. Stability

Stable.

Conditions to avoid

Excessive heat, or open flame.

Incompatible materials

Oxidizing agents or strong mineral acids can cause reaction.

Thermal decomposition

Caused by fire or overheating during improper processing. Fumes damaging to health may be released.

Hazardous decomposition products

Carbon monoxide (CO) - is highly toxic if inhaled, present in combustion fumes of all organic materials;
Carbon dioxide (CO₂) - in sufficient concentrations can act as an asphyxiant, present in combustion fumes of all organic materials;

10.2. Reactivity

Hazardous polymerization : Will not occur

Hazardous reactions : None.

11. Toxicological Information

Independent testing and many years of experience confirm that this material has very low toxicity. The International Agency for Research on Cancer does not list this material as a confirmed or suspected carcinogen. In rats an acute LD₅₀ > 5 gr/Kg of body weight. Industrial hygiene studies have shown that under normal and expected conditions of use of PC materials, exposures are well below applicable limits.

11.1. Acute Toxicological Information

Acute oral toxicity : Oral LD₅₀ (rat) > 5g/kg, estimated.

Acute vapor exposure : processing fumes from similar products are not considered toxic. In acute inhalation tests, laboratory rats were exposed to processing fumes at concentrations exaggerating those that would likely occur in workplace situations. No death or signs of toxicity, except transient irritancy in some cases, were noted during the 6-hour fume exposure tests. There were no distinct or consistent treatment related tissue or organ changes noted in gross necropsies.

Primary skin irritation : product not considered primary skin irritant. Draize Skin Primary Irritation Score (rabbit) for similar products, in finely divided form, for a 24-hour exposure is 0.

Eye irritation : product not considered primary irritant. When similar products, in finely divided form, were placed into the eyes of rabbits, slight transient redness or discharge occurred – consistent with the expected slightly abrasive nature of product.

Sensitization : Not expected to be a skin sensitized based on results of Modified Buehler Guinea Pig Sensitization Test from similar products. Dermal LD₅₀ (rabbit) > 2g/kg, estimate. in sub-chronic testing, the base resin was considered physiologically inert when fed to rats for 8 weeks at a dietary level of 6%.

Chronic effects :
Carcinogenicity - NTP : not tested
- IARC : not listed
- OSHA : not regulated



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11.2. Other Toxicological Information

No known toxicological effects with normal use. For heating see section 10.

11.3. Additional Information

No additional toxicity information currently available.

12. Ecological Information

12.1. Persistence and Degradability

Detailed studies have not been conducted concerning the environmental fate of the product. According to present knowledge no unfavorable ecological effects are to be expected. Not generally hazardous to water. Insoluble in water, non-toxic solid.

Mobility	:	No information currently available
Persistence and biodegradability	:	Biodegradation period - tens of years.
Bioaccumulative potential	:	No information currently available.

12.2. Environmental Risks

No hazard expectation to terrestrial or aquatic flora and fauna.

Ecotoxicity	:	LD ₅₀ (rats) > 5 gr/kg
	:	IC ₅₀ (bacterial inhibition) - no data available
Aquatic toxicity	:	LC ₅₀ (daphnia magna) - no data available
	:	LC ₅₀ (fathead minnow - fish) - no data available

12.3. Other Information

All available ecological data have been taken into account for the development of the hazard and precautionary information contained in this safety data.

13. Disposal Considerations

The product is not considered hazardous under current EPA hazardous waste regulations. Recycling is the preferred method of disposal.

Alternatively, the product may be disposed of in an approved landfill.

Incineration in accordance with federal, state and local regulations – collected processing fume condensates and incinerator ash should be tested to determine waste classification.

All wastes should be evaluated in conjunction with applicable solid and hazardous waste regulations, Toxicity Characteristic Leaching Procedures (TCLP), and disposed of as appropriate. This product does not contain any cadmium or other heavy metal pigments or stabilizers.

It is the user's responsibility to dispose of all wastes in accordance with all national and local regulations at properly permitted or authorized facilities.

14. Transport Information

DOT PSN Code	:	ZZZ
DOT Proper Shipping Name	:	Not regulated by this mode of transportation
IMO PSN Code	:	ZZZ
IMO Proper Shipping Name	:	Not regulated by this mode of transportation
IATA PSN Code	:	ZZZ
IATA Proper Shipping Name	:	Not regulated by this mode of transportation
AFI PSN Code	:	ZZZ
AFI Proper Shipping Name	:	Not regulated by this mode of transportation
Additional transportation data	:	Not currently regulated under Department of Transportation regulations
Labeling	:	No labeling is required in accordance with the EEC directives
Placarding	:	No placarding is required in accordance with the EEC directives
Special transport requirements	:	None
Packaging	:	Avoid dark-colored packaging to prevent heat distortion

The product is classified as a non-hazardous material in the meaning of transport regulations.



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15. Regulatory Information

With regards to dust formed as a consequence of mechanical treatments, the appropriate regulations value limits for fine dust must be observed: MAC value (fine dust) – 5mg/m³.

United States Federal Regulations

US. Toxic Substances Control Act: Excluded: Article.

No substances are subject to TSCA 12(b) export notification requirements.

US. EPA CERCLA Hazardous Substances (40 CFR 302) Components:

None

SARA Section 311/312 Hazard Categories:

Non-hazardous under Section 311/312

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A) Components:

None

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required Components:

None

US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261):

Under RCRA, it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste.

State Right-To-Know Information

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the SDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

The concentrations reported below in units of parts per million (ppm) or parts per billion (ppb) are maximum values.

Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:

<u>Weight Percent</u>	<u>Components</u>	<u>CAS-No.</u>
>=1%	Bisphenol A Polycarbonate	25971-63-5
>=1%	Bisphenol A Polycarbonate	CAS# is a trade secret

Massachusetts Right to Know Extraordinarily Hazardous Substance List:

<u>Weight Percent</u>	<u>Components</u>	<u>CAS-No.</u>
<=3 ppm	Methylene Chloride	75-09-2

California Prop. 65:

Warning! This product contains chemical(s) known to the State of California to be Carcinogenic. Female reproductive toxin.

<u>Weight Percent</u>	<u>Components</u>	<u>CAS-No.</u>
<=3 ppm	Methylene Chloride	75-09-2
Trace element	Bisphenol A	80-05-7

Palram Americas, Inc. polycarbonate sheet products as sold contain BPA at concentrations below which would require the need for a warning under the Act.



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CFATS (Chemical Facility Anti-Terrorism Standards) Chemicals

To the best of our knowledge, this product does not contain Appendix A Chemicals of Interest (COI), at or above the Screening Threshold Quantity (STQ), as defined by the Department of Homeland Security Chemical Facility Anti-terrorism Standard (CFATS, 6 CFR Part 27. Based on information provided by our suppliers, this product is considered "DRC Conflict Free" as defined by the SEC Conflict Minerals Final Rule (Release No. 34-67716; File No. S7-40-10; Date: 2012-08-22).

16. Other Information

Recommended Uses And Restrictions

Please consult the relevant product and/or application information for this product.

Further Information

Additional information on this product may be obtained by calling your PALRAM Sales or Customer Service Contact.

Disclaimer:

Palram believes that the information and recommendations contained (including data and statements) in this PSDS are accurate as of the date hereof. This PSDS is based on information that is believed to be reliable, but may be subject to change as new information becomes available. Since it is not possible to anticipate all conditions of use, additional safety precautions may be required. The information is neither designed nor recommended for any other use than as safety data, or for use by any other person than the direct user and not for compliance with other laws. Palram does not warrant the suitability for use of this PSDS for any other material or product not specifically identified herein, nor the accuracy or authenticity of this PSDS unless it has been obtained directly from Palram.

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