This document covers safety data concerning the following products:
PALRUF®
PALCLEAR™
PALOPAQUE™
PALDOOR™
PALCLAD™
AG-TUF™
WALLTUF™
HYG (HYGIENIC) PRODUCTS

Rigid PVC Sheet
PALRAM urges the recipient of this Product Safety Data Sheet to study it carefully to become aware of hazards, if any, of the product involved. In the interest of safety you should (1) notify your employees, agents and contractors of the information on this sheet, (2) furnish a copy to each of your customers for the product, and (3) request your customers to inform their employees and customers as well.

1. Identification of the Article and the Company

1.1. Trade Names
PALRUF®, PALCLEAR™, PALOPAQUE™, PALDOOR™, PALCLAD™, AG-TUF™,
WALLTUF™, HYG (HYGIENIC) PRODUCTS

2. Composition / Information of Ingredients
Tin stabilized PVC sheets, 2.5% by weight tin-maleate or tin-mercaptide based stabilizer. Pigments and additives used to enhance specific properties are encapsulated in the polymer resin matrix. No solvents. No plasticizers.

No cadmium, lead, or other heavy metals used.

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
CAS Number: exposure is not expected to cause adverse health effects
Eye contact: non-relevant

Local: Call your nearest poison control center.

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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

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. Medical attention needed.

4.4. Skin Absorption
Route of entry – skin: No

4.5. Eye Contact
Like any foreign body, can cause mechanical irritation. Consult physician.

4.6. Notes for Physician
There are no specific notes.

5. Fire Fighting Measures

5.1. Extinguishing Media
Water spray or CO₂. 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 closing, gas mask approved for
acid vapors.

5.5. Unusual Fire and Explosion Hazards
PVC is a self extinguishing fire retardant material, that being exposed to open fire and high tempera-
tures decomposes emitting large quantities of HCl, which tends to extinguish the flames. It does
not continue to burn after ignition without an external fire source. HCl has a strong acidic odor that
causes sensory alert at very low concentrations. HCl odor threshold = 0.77 ppm. Exposure to high
concentrations of HCl will cause irritation of the respiratory passages, at very high concentrations may
cause burns to mucous membranes. OSHA legal airborne PEL is 5 ppm, not to be exceeded at any
time. ACGIH recommended airborne exposure limit is 5 ppm, which should not be exceeded at any
time. Soot emitted when PVC is forced to burn may obscure visibility.

6. Accidental Release Measures
No special precautions and no personal protective equipment needed. Collect mechanically
for disposal.
### 7. Handling and Storage

#### 7.1. Handling

**General handling precautions**
- Avoid mechanical contact with eyes.

**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. Static electricity discharge sparks possible during handling. Avoid contact or vicinity of flammable materials. When opening truck or rail car for unloading, ventilate before entering.

#### 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/protective gloves**
- No special protection needed

**Eye protection**
- No special protection needed

**Other protective equipment**
- No special protection needed

### 9. Physical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Flat or corrugated plastic sheets</td>
</tr>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Color</td>
<td>Clear or colored</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Density</td>
<td>1.35-1.45 gr/cm³</td>
</tr>
<tr>
<td>Heat Deflection</td>
<td>62 - 65°C (144˚F - 149˚F)</td>
</tr>
<tr>
<td>Boiling Point, 760 Hg</td>
<td>Not relevant</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not relevant</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>&lt;0.1g/100mL at 23°C</td>
</tr>
<tr>
<td>pH Value</td>
<td>Not relevant</td>
</tr>
<tr>
<td>Flash Point</td>
<td>391 °C (735°F) ASTM D 1929</td>
</tr>
<tr>
<td>Autoignition Temp.</td>
<td>454 °C (849°F) ASTM D 1921</td>
</tr>
<tr>
<td>Flammability Limit</td>
<td>None</td>
</tr>
<tr>
<td>Explosion Limits</td>
<td>None</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not relevant</td>
</tr>
<tr>
<td>Percent Volatiles</td>
<td>Not relevant</td>
</tr>
</tbody>
</table>

In as much as Palram Industries has no control over the use to which others may put the material, it does not guarantee that the same results as those described herein will be obtained. Each user of the material should make his own tests to determine the material’s suitability for his own particular use. Statements concerning possible or suggested uses of the materials described herein are not to be construed as constituting a license under any Palram Industries patent covering such use or as recommendations for use of such materials in the infringement of any patent. Palram Industries or its distributors cannot be held responsible for any losses incurred through incorrect installation of the material. In accordance with our company policy of continual product development you are advised to check with your local Palram Industries supplier to ensure that you have obtained the most up to date information.
10. Stability and Reactivity

10.1. Stability
Stable.

Conditions to avoid
Excessive heat, or open flame. Temperature above 150°C (302°F) will decompose raw polymer resin and liberate HCl.

Incompatible materials
Oxidizing agents or strong mineral acids can cause reaction.

Thermal decomposition
Begins above 150°C (302°F) caused by fire, overheating during improper processing. Fumes damaging to health may be released.

Hazardous decomposition products
Burning can produce the following combustion products:
- Carbon monoxide (CO) - is highly toxic if inhaled;
- Carbon dioxide (CO₂) - in sufficient concentrations can act as an asphyxiant;
- Hydrogen chloride (HCl) - in high concentrations cause irritation of the respiratory passages, at very high concentrations may cause burns to mucous membranes.

10.2. Reactivity
Hazardous polymerization: Will not occur
Hazardous reactions: None

11. Toxicological Information
PVC materials have a very low acute toxicity. In rats an acute LD₅₀ > 10 gr/kg of body weight.
PNEUMOCONIOSIS has been described from inhalation of combustion products (effects of overexposure). Industrial hygiene studies have shown that under normal and expected conditions of use of PVC materials, exposures are well below applicable limits.

11.1. Acute Toxicological Information
Acute oral toxicity: None
Acute percutaneous toxicity: None
Acute vapor exposure: None
Primary skin irritation: No irritation
Eye irritation: No irritation
Sensitization: No information available
Chronic effects: Unknown
Carcinogenicity- NTP: Not listed
Carcinogenicity- IARC: Not listed
Carcinogenicity- OSHA: Not listed

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: LD₅₀ (rats) > 10 gr/kg
LC₅₀ (bacterial inhibition) - no data available
Aquatic toxicity: LC₅₀ (daphnia magna) - no data available
LC₅₀ (fat head 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. High temperature incineration under controlled conditions due to formation of HCl.
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.

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. OSHA Hazard Communication Classification for dusts and combustion fumes: Irritant, Skin Hazard, and Lung Hazard. SARA Title III Classification for dusts and combustion fumes: Acute Health Hazard, Chronic Health Hazard. WHMIS Classification: Non-hazardous

16. Other Information
Recommended Uses And Restrictions
Please consult the relevant product and/or application information for this product.
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Further Information
Additional information on this product may be obtained by calling your PALRAM Sales or Customer Service Contact.

Disclaimer
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