



PA601-CF, PA602-CF, PA603-CF & PA603-CF

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Date of issue: 02/25/2014

Revision date: Jun 2020

Version: 1.1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : PA601-CF, PA602-CF, 603-CF &603-CF
Product code : Not available.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Specialty nylon composite for sintering.

1.3. Details of the supplier of the safety data sheet

Advanced Laser Materials, LLC.
3115 Lucius McCelvey
76504 Temple, Texas - USA
T (254) 773-3080 M-F, 8:00 a.m. – 5:00 p.m.

1.4. Emergency telephone number

Emergency number : (254) 773-3080 M-F, 8:00 a.m. – 5:00 p.m. (Central Time)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Combustible Dust

2.2. Label elements

GHS-US labelling

Signal word (GHS-US) : Warning
Hazard statements (GHS-US) : May form combustible dust concentrations in air

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

67-77 % of the mixture consists of ingredient(s) of unknown acute toxicity.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

| Name | Product identifier | % | GHS-US classification |
|---------------------|--------------------|-------|-----------------------|
| Nylon 12 | CAS# 25038-74-8 | 60-80 | None by OSHA criteria |
| Milled carbon fiber | Cas# 7440-44-0 | 20-40 | None by OSHA criteria |

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if condition worsens.
First-aid measures after skin contact : In case of contact, immediately flush skin with plenty of water. Call a physician if irritation develops and persists.
First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. If irritation persists, get medical attention.
First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : Dust may cause respiratory tract irritation.
Symptoms/injuries after skin contact : Dust may cause skin irritation. Repeated exposure may cause skin dryness or cracking.
Symptoms/injuries after eye contact : Dust may cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
Symptoms/injuries after ingestion : May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray, dry chemical, foam, carbon dioxide.
Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon, oxides of nitrogen.
Explosion hazard : Potential dust explosion hazard.

5.3. Advice for firefighters

Firefighting instructions : Cool closed containers exposed to fire with water.
Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Spills of this material are a slipping hazard. Avoid breathing dust. Combustible dust. Avoid generating dust. Dust may form flammable mixture with air.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Keep unnecessary personnel away from the release. Avoid contact with skin and eyes. Eliminate sources of ignition.
Emergency procedures : Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (ie, clearing dust surfaces with compressed air).

6.2. Methods and material for containment and cleaning up

For containment : Contain spill, then place in a suitable container. Minimize dust generation. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).
Methods for cleaning up : Vacuum or sweep material and place in a disposal container. Provide ventilation. Avoid generating dust. Use non-sparking tools.

6.3. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep away from sources of ignition. - No smoking. Avoid contact with skin and eyes. Good housekeeping is important to prevent accumulation of dust. The use of compressed air for cleaning clothing, equipment, etc, is not recommended. Do not breathe dust. Do not swallow. Handle and open container with care. Use with adequate ventilation. When using do not eat, drink or smoke. If spilled, may cause the floor to be slippery. Take precautionary measures against static discharge.
Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Store in dust-tight, dry, labelled containers. Keep cool.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Particulates Not Otherwise Regulated (PNOR) | | |
|---|-------------------------------------|--|
| USA ACGIH | ACGIH TWA (mg/m ³) | 10 mg/m ³ (Inhalable Particulate) |
| USA ACGIH | ACGIH TWA (mg/m ³) | 3 mg/m ³ (Respirable Particulate) |
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 15 mg/m ³ (Total Dust) |
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 5 mg/m ³ (Respirable Particulate) |

8.2. Exposure controls

Appropriate engineering controls : Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.
Personal protective equipment : Avoid all unnecessary exposure.
Hand protection : Use suitable impervious nitrile or neoprene gloves and protective apparel to reduce exposure.
Eye protection : Safety glasses with side shields or goggles are recommended for dust.
Skin and body protection : Wear suitable protective clothing.
Respiratory protection : A NIOSH approved dust mask or filtering facepiece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).

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| | |
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| Environmental exposure controls | : Maintain levels below Community environmental protection thresholds. |
| Other information | : Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices. |

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|-----------------------|
| Physical state | : Solid |
| Appearance | : Powder. |
| Colour | : Grey. |
| Odour | : Odorless. |
| Odour threshold | : No data available. |
| pH | : No data available. |
| Relative evaporation rate (butylacetate=1) | : No data available. |
| Melting point | : > 80 °C (> 176 °F) |
| Freezing point | : No data available. |
| Boiling point | : No data available. |
| Flash point | : > 350 °C (> 662 °F) |
| Self ignition temperature | : No data available. |
| Decomposition temperature | : No data available. |
| Flammability (solid, gas) | : Combustible |
| Vapour pressure | : No data available. |
| Relative vapour density at 20 °C | : No data available. |
| Relative density | : 1.1-1.2 g/cc |
| Solubility | : Negligible. |
| Log Pow | : No data available. |
| Log Kow | : No data available. |
| Viscosity, kinematic | : No data available. |
| Viscosity, dynamic | : No data available. |
| Explosive properties | : No data available. |
| Oxidising properties | : No data available. |
| Explosive limits | : No data available. |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions. Keep dry in storage. Combustible Dust.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Incompatible materials. Heat, sparks, flame.

10.5. Incompatible materials

Acids. Strong oxidizing agents.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon, oxides of nitrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Based on available data, the classification criteria are not met.

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|--|--------------------|
| LD50 oral rat | > 2000 mg/kg |
| LD50 dermal rabbit | No data available. |
| LC50 inhalation rat (mg/l) | No data available. |

Skin corrosion/irritation : Based on available data, the classification criteria are not met.

Serious eye damage/irritation : Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation : Based on available data, the classification criteria are not met.

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|--|--|
| Germ cell mutagenicity | : Based on available data, the classification criteria are not met. |
| Carcinogenicity | : Based on available data, the classification criteria are not met. |
| Reproductive toxicity | : Based on available data, the classification criteria are not met. |
| Specific target organ toxicity (single exposure) | : Based on available data, the classification criteria are not met. |
| Specific target organ toxicity (repeated exposure) | : Based on available data, the classification criteria are not met. |
| Aspiration hazard | : Based on available data, the classification criteria are not met. |
| Symptoms/injuries after inhalation | : Dust may cause respiratory tract irritation. |
| Symptoms/injuries after skin contact | : Dust may cause skin irritation. Repeated exposure may cause skin dryness or cracking. |
| Symptoms/injuries after eye contact | : Dust may cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling. |
| Symptoms/injuries after ingestion | : May be harmful if swallowed. May cause stomach distress, nausea or vomiting. |
| Other information | : Likely routes of exposure: inhalation, skin and eye. |

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability

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|-------------------------------|------------------|
| Persistence and degradability | Not established. |
|-------------------------------|------------------|

12.3. Bioaccumulative potential

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| | |
|---------------------------|------------------|
| Bioaccumulative potential | Not established. |
|---------------------------|------------------|

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations. Can be incinerated according to local regulations

SECTION 14: Transport information

In accordance with DOT

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Additional information

Other information : No supplementary information available.

Special transport precautions : Do not handle until all safety precautions have been read and understood.

SECTION 15: Regulatory information

15.1. US Federal regulations

All ingredients are on TSCA inventory.

15.2. US State regulations

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| | |
|----------------------------|--|
| State or local regulations | This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm. |
|----------------------------|--|

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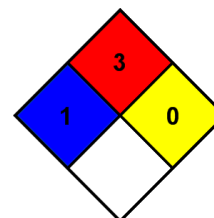
SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

| IARC (I) | International Agency for Research on Cancer. |
|----------|--|
| | 1 - Carcinogenic to humans; 2A - Probably carcinogenic to humans; 2B - Possibly carcinogenic to humans; 3 - Not classifiable; 4 - Probably not carcinogenic to humans. |
| NTP (N) | National Toxicology Program. |
| | 1 - Evidence of Carcinogenicity; 2 - Known Human Carcinogens; 3 - Reasonably anticipated to be Human Carcinogen; 4 - Substances delisted from report on Carcinogens; 5 - Twelfth Report - Items under consideration. |

SECTION 16: Other information

Indication of changes : None.
Data of issue : 02/25/2014
Other information : None.

NFPA health hazard : 1
NFPA fire hazard : 3
NFPA reactivity : 0



This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product