



SAFETY DATA SHEET

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

Important information *** This Safety Data Sheet is only authorised for use by HP for HP Original products. Any unauthorised use of this Safety Data Sheet is strictly prohibited and may result in legal action being taken by HP. ***

1.1. Product identifier

Trade name or designation of the mixture V1R23Series
Registration number -
Synonyms HR PA-12 GB Powder
Issue date 14-May-2018
Version number 03
Revision date 16-Oct-2020
Supersedes date 06-Jun-2019

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

Identified uses Materials to be processed in HP 3D MJF equipment only.
Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

HP Inc Danmark ApS
Engholm Parkvej 8
Allerød, 3450
Denmark
Telephone +45-3515-0600

HP Inc. health effects line

(Toll-free within the US) 1-800-457-4209
(Direct) 1-760-710-0048

HP Inc. Customer Care Line

(Toll-free within the US) 1-800-474-6836
(Direct) 1-208-323-2551
Email: hpcustomer.inquiries@hp.com

1.4 Emergency telephone number 35 31 60 60

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 as amended

This mixture does not meet the criteria for classification as hazardous according to Regulation (EC) 1272/2008.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Polyamide, Modified Polymer
Hazard pictograms None.
Signal word None.
Hazard statements The mixture does not meet the criteria for classification.

Precautionary statements

Prevention Not available.
Response Not available.
Storage Not available.
Disposal Not available.

Supplemental label information None.

2.3. Other hazards

May form combustible dust concentrations in air.
Risk of skin burns caused by hot melt.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Polyamide, Modified Polymer	100	Proprietary	-	-	
Classification:	-				

SECTION 4: First aid measures

General information

Risk of skin burn caused by hot melt.
Do not leave the victim unattended.
Remove victim immediately from source of exposure.
Victim to lie down in the recovery position, cover and keep him warm.

4.1. Description of first aid measures

Inhalation	If dust from the material is inhaled, remove the affected person immediately to fresh air. Move to fresh air in case of accidental inhalation of vapors or decomposition products. If breathing is difficult, give oxygen. Oxygen or artificial respiration if needed. Consult a physician for specific advice.
Skin contact	Wash the skin immediately with soap and water. In case of contact with molten product, cool rapidly with water and seek immediate medical attention. Do not attempt to remove molten product from skin because skin will tear easily.
Eye contact	Dust: Wash well-open eyes immediately, abundantly and thoroughly with water. Remove particle remaining under the eyelids. If irritation persists, consult a doctor. On contact with hot product: Cool eyes rapidly with cold water after contact with molten polymer. Continue to rinse for at least 15 minutes. Get medical attention immediately.
Ingestion	If swallowed, do NOT induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.

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

No experiences of acute or chronic damages in humans have been made yet.

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

Not available.

SECTION 5: Firefighting measures

General fire hazards

Dust clouds generated during handling and/or storage can form explosive mixtures with air. Check that all equipment is properly grounded and installed to satisfy electrical classification requirements. As with any dry material, pouring this material or allowing it to free-fall or to be conveyed through chutes or pipes can accumulate and generate electrostatic sparks, potentially causing ignition of the material itself, or of any flammable materials which may come into contact with the material or its container.

5.1. Extinguishing media

Suitable extinguishing media	Water spray, foam, dry powder or carbon dioxide.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

May be released in case of fire: carbon monoxide, carbon dioxide, nitric oxides, organic products of decomposition. Under certain fire conditions, traces of other toxic products may occur.

5.3. Advice for firefighters

Special protective equipment for firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
Special fire fighting procedures	Do not use a solid stream of water. A solid stream of water can cause a dust explosion. Fire fighting equipment should be thoroughly decontaminated after use.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	In case product dust is released: Dust mask
For emergency responders	Not available.

6.2. Environmental precautions

Prevent further leakage or spillage. Do not let product enter drains. Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up Sweep up or vacuum up spillage and collect in suitable container for disposal. If a vacuum is used, the motor must be rated as dust explosion-proof. Dispose of in compliance with federal, state, and local regulations.

6.4. Reference to other sections Not available.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Avoid contact with skin and eyes Avoid breathing dust. Prevent dust accumulation to minimize explosion hazard. Inside and outside the equipment should be cleaned regularly with an explosion-protected vacuum cleaner to avoid dust accumulation. Do not sweep the dust or try to remove it with a compressed-air gun. Remove contaminated clothing and wash the skin thoroughly with soap and water after work.

7.2. Conditions for safe storage, including any incompatibilities Store away from moisture and heat to maintain the technical properties of the product. Eliminate sources of ignition. Do not expose to heat or store above 60 C.

7.3. Specific end use(s) Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits No exposure limits noted for ingredient(s).

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

Recommended monitoring procedures Not available.

Derived no effect levels (DNELs) Not available.

Predicted no effect concentrations (PNECs) Not available.

Exposure guidelines Glass, oxide, chemicals ACGIH (TWA/TLV): 1 fibers/cm³ (Fiber) F: Respirable fibers: length > 5 micrometers; aspect ratio >= 3:1, as determined by the membrane filter method at 400-450X magnification (4-mm objective), using phase-contrast illumination.
US CA OEL (TWA/PEL): .2 fibers/cm³ (Fiber)

8.2. Exposure controls

Appropriate engineering controls HP recommends the use of HP accessories for unpacking 3D parts and refilling the build chamber. If other methods are used, read the following: Dust clouds generated during handling and/or storage can form explosive mixtures with air. Dust explosion characteristics vary with the particle size, particle shape, moisture content, contaminants, and other variables. Check that all equipment is properly grounded and installed to satisfy electrical classification requirements. As with any dry material, pouring this material or allowing it to fall freely or be conveyed through chutes or pipes can accumulate and generate electrostatic sparks, potentially causing ignition of the material itself, or of any flammable materials which may come into contact with the material or its container.

Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits. If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

Individual protection measures, such as personal protective equipment

General information Not available.

Eye/face protection Wear safety glasses with side shields.

Skin protection

- Hand protection Wear impermeable gloves. Protective heat-insulating gloves are to be used during thermal processing. Any areas of skin covered with dust must be washed immediately with soap and water as the powder draws out natural moisture from the skin. Use barrier cream regularly.

- Other Processing of this product releases vapors or fumes which may cause skin irritation. It is a good industrial hygiene practice to minimize skin contact. Wash thoroughly after handling.

Respiratory protection Avoid breathing dust. Avoid breathing processing fumes or vapors. Where airborne exposure is likely or airborne exposure limits are exceeded, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components and substances released during processing.

Thermal hazards In thermal processing: Risk of skin burns. Wear appropriate thermal protective clothing, when necessary.

Hygiene measures 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.

Environmental exposure controls Not available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Powder. Solid.
Physical state	Not available.
Form	Powder.
Color	Grey to white.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	363.2 - 368.6 °F (184 - 187 °C)
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	> 662 °F (> 350 °C)
Viscosity	Not available.
Explosive properties	Dusts might form explosive mixtures with air. Powder explosivity data: Minimum Ignition Energy (MIE) "dust cloud" w/ Inductance >30mJ. Layer Ignition Temperature (LIT) "dust layer" >400degC. Minimum Ignition Temperature (MIT) "dust cloud" >360degC. Auto Ignition Temperature (AIT) >400degC.
Oxidizing properties	Not oxidizing.
9.2. Other information	No relevant additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity	Not available.
10.2. Chemical stability	The product is stable under normal handling and storage conditions.
10.3. Possibility of hazardous reactions	Will not occur.
10.4. Conditions to avoid	Take measures to mitigate material spillage and avoid potential ignition sources such as ESD (ElectroStatic Discharges), flames, and sparks. Do not smoke nearby. Avoid wet/humid environment. Recommended working humidity 50-70%. Avoid dust formation.
10.5. Incompatible materials	Oxidizing materials, acids, strong bases, water and high humidity.
10.6. Hazardous decomposition products	Decomposition products on thermal decomposition, carbon monoxide, carbon dioxide, Nitrogen oxides (NOx), organic products of decomposition.

SECTION 11: Toxicological information

General information Not available.

Information on likely routes of exposure

Inhalation At high temperature, products of thermal decomposition can be irritating to respiratory system.

Skin contact	May be considered as comparable to a similar product for which experimental results are: Non irritating to skin.
Eye contact	May be considered as comparable to a similar product for which experimental results are: Not irritating to the eyes.
Ingestion	May be considered as comparable to a similar product for which experimental results are: Slightly harmful by ingestion.
Symptoms	Not available.

11.1. Information on toxicological effects

Acute toxicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.
Respiratory sensitization	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
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.
Mixture versus substance information	Not available.
Other information	Complete toxicity data are not available for this specific formulation

SECTION 12: Ecological information

12.1. Toxicity	No toxicity data noted for the ingredient(s).
12.2. Persistence and degradability	Not available.
12.3. Bioaccumulative potential	Not available.
Partition coefficient n-octanol/water (log Kow)	Not available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	Not available.
12.5. Results of PBT and vPvB assessment	Not a PBT or vPvB substance or mixture.
12.6. Other adverse effects	Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods	
Residual waste	Not available.
Contaminated packaging	Not available.
EU waste code	Not available.
Disposal methods/information	Do not allow this material to drain into sewers/water supplies. Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

SECTION 14: Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
ADR	Not regulated as dangerous goods.

Further information Not a dangerous good under DOT, IATA, ADR, IMDG, or RID.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorizations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

Other regulations

All chemical substances in this HP product have been notified or are exempt from notification under chemical substances notification laws in the following countries: US (TSCA), EU (EINECS/ELINCS), Switzerland, Canada (DSL/NDSL), Australia, Japan, Philippines, South Korea, New Zealand, and China.

Other information

This Safety Data Sheet complies with the requirements of Regulation (EU) 2015/830. Classification according to Regulation (EC) No 1272/2008 as amended. Specific Provisions: Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (in the amended version OJ L 396 from 29.05.2007 page 3 with further rectifications and amendments).

National regulations

Not available.

15.2. Chemical safety assessment

See attached SUMI or GEIS document, if applicable.

SECTION 16: Other information

References

Regulation (EC) No. 1907/2006 of December 18, 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) and establishing a European Chemicals Agency (REACH).

Regulation (EU) 2015/830 of May 28, 2015 amending Regulation (EC) No. 1907/2006.

Regulation (EC) No. 1272/2008 of December 16, 2008 on classification, labeling and packaging of substances and mixtures, and amendments (CLP).

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any H-statements not written out in full under Sections 2 to 15

None.

Revision information**Training information****Disclaimer**

SECTION 2: Hazards identification: Classification according to Regulation (EC) No 1272/2008

Follow training instructions when handling this material.

This Safety Data Sheet document is provided without charge to customers of HP. Data is the most current known to HP at the time of preparation of this document and is believed to be accurate. It should not be construed as guaranteeing specific properties of the products as described or suitability for a particular application. This document was prepared to the requirements of the jurisdiction specified in Section 1 above and may not meet regulatory requirements in other countries.

Explanation of abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstracts Service
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
COC	Cleveland Open Cup
DOT	Department of Transportation
EPCRA	Emergency Planning and Community Right-to-Know Act (aka SARA)
IARC	International Agency for Research on Cancer
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
RCRA	Resource Conservation and Recovery Act
REC	Recommended
REL	Recommended Exposure Limit
SARA	Superfund Amendments and Reauthorization Act of 1986
STEL	Short-Term Exposure Limit
TCLP	Toxicity Characteristics Leaching Procedure
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
VOC	Volatile Organic Compounds