

## SAFETY DATA SHEET

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### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name LEONA™  
FR200, FR250, FR270, FR290, FR370, FR650

SDS No. LE-W004-10

Company Name ASAHI KASEI CORPORATION

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Recommended use and restriction on use

Recommended use Plastic ingredient for home electronics, electronic materials, automotive materials, industrial materials.

## SAFETY DATA SHEET

Restriction on use Please do not use our product LEONA for the following use.  
 Medical containers/ packaging/ equipment/ parts of in-vivo, or which contact with mucosa, body fluid, blood, chemical solution.  
 Equipments, parts which contact with food containers/ packaging / equipment/ parts and drinking water.  
 Toys which contacts with mouth, drinking water etc.

### 2. HAZARDS IDENTIFICATION

#### [GHS-Classification]

Health Hazards Cannot be classified  
 Environmental Hazards Cannot be classified

#### [GHS label element]

Pictogram or symbol -  
 Signal word -  
 Hazard statements -  
 Special Hazard Gas is generated in melted condition.

#### [Precautionary statements]

Safety measures Do not handle until all safety precautions have been read, understood and precautionary measures are taken.  
 Do not eat, drink or smoke when using this product.  
 Wear protective gloves, eye-protection if necessary. Take burn prevention measures especially when handling melted resin.  
 Install effective local exhaust in extrusion press because gas is generated.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Product Name

LEONA™ FR270, FR370

Chemical name or generic name

Polyhexamethylene adipamide (Polyamide66) resin composition  
 Mixture of polyamide resin and additives (Stabilizer, Filler etc.)

Components, Contents, CAS number and EINECS number

Product Name	Components	Contents [wt%]	CAS No.	EINECS No.
FR370	Polyamide66	85-98	32131-17-2	N/A
	Melamine cyanurate	2-9	37640-57-6	253-575-7
	Other additives	0-10	confidential	confidential
	Total:	100wt%		
FR270	Polyamide66	80-90	32131-17-2	N/A
	Melamine cyanurate	10-20	37640-57-6	253-575-7

## SAFETY DATA SHEET

Other additives	0-10	confidential	confidential
Total:	100wt%		

Other additives might contain colorant following.

Components	Contents [wt%] <sup>*)</sup>	CAS No.	EINECS No.
Other additives	Colorant	0-10	confidential
(All of the above grade)	(Carbon black)	(0-3)	1333-86-4
	(Iron oxide)	(0-5)	1309-37-1 etc.
	(Titanium dioxide)	(0-10)	13463-67-7
	(Silica)	(0-1)	confidential
	(Copper complex)	(0-1)	confidential
	(Complex of metal oxides)	(0-7)	confidential
	(Other colorant)	(0-7)	confidential
	Other additives	0-10	confidential
	Total:	0-10	

\*) The number in parentheses is included in the content of the colorant.

Product Name

LEONA™ FR200, FR250, FR290, FR650

Chemical name or generic name

Polyhexamethylene adipamide and Poly-ε-caprolactam copolymer (Polyamide66/6) resin composition

Mixture of polyamide resin and additives (Stabilizer, Filler etc.)

Components, Contents, CAS number and EINECS number

Product Name	Components	Contents [wt%]	CAS No.	EINECS No.
FR200	Polyamide66/6	85-98	24993-04-2	N/A
	Melamine cyanurate	2-9	37640-57-6	253-575-7
	Other additives	0-10	confidential	confidential
	Total:	100wt%		
FR290	Polyamide66/6	65-90	24993-04-2	N/A
	Melamine cyanurate	10-35	37640-57-6	253-575-7
	Other additives	0-10	confidential	confidential
	Total:	100wt%		
FR250	Polyamide66/6	67-89	24993-04-2	N/A
	Polyamide6	10-30	25038-54-4	N/A
	Melamine cyanurate	1-3	37640-57-6	253-575-7
	Other additives	0-10	confidential	confidential
	Total:	100wt%		
FR650	Polyamide66/6	30-45	24993-04-2	N/A
	Polyamide6	20-40	25038-54-4	N/A

## SAFETY DATA SHEET

Melamine cyanurate	20-40	37640-57-6	253-575-7
Other additives	0-10	confidential	confidential
Total:	100wt%		

Other additives might contain colorant following.

Components	Contents [wt%] <sup>*)</sup>	CAS No.	EINECS No.
Other additives	Colorant	0-10	confidential
(All of the above grade)	(Carbon black)	(0-3)	1333-86-4
	(Iron oxide)	(0-5)	1309-37-1 etc.
	(Titanium dioxide)	(0-10)	13463-67-7
	(Silica)	(0-1)	confidential
	(Copper complex)	(0-1)	confidential
	(Complex of metal oxides)	(0-7)	confidential
	(Other colorant)	(0-7)	confidential
	Other additives	0-10	confidential
Total:	0-10		

\*) The number in parentheses is included in the content of the colorant.

All of ingredients are listed on TSCA, EINECS(ELINCS), ENCS(JPN), ISHL(JPN), and IECSC(CHN) inventories.

These ingredients are corresponding to the REACH regulations.

These products do not contain Substances of Very High Concern(SVHC) concentration above 0.1wt%

#### 4. FIRST AID MEASURES

##### Swallowed

If swallowed accidentally, vomit immediately and get medical attention/advice if any abnormality occurs.

##### Eyes

Do not rub if in eyes, wash with plenty of water. Remove contact lenses immediately. If abnormality is observed get medical attention and advice.

##### Skin

Do not peel off melted material; cool down affected area with plenty of water for more than 30 minutes. Then get medical attention.

##### Inhaled

If you feel unwell, move away from the working place immediately to well-ventilated area. Get medical advice if necessary.

##### Protection who gives the first aid

Those who suffer from any abnormality should get medical attention.

## SAFETY DATA SHEET

**WARNING :Do not attempt removal of plastic without medical assistance. Do not use solvent for removal.**

For processing fume inhalation irritation leave contaminated area and breathe fresh air. If coughing, difficult breathing or any other symptoms develop, seek medical attention at once, **even if symptoms develop at a later time.**

For skin contacts with condensate, immediately wash thoroughly with soap and water. If irritation develops, seek medical attention.

### 5. FIRE-FIGHTING MEASURES

Extinguisher

Pouring water, spraying water and other extinguisher can be used.

Specific hazards

Strong heat, black fume and gases such as CO<sub>2</sub>, CO, slight amount of HCN, NH<sub>3</sub> may be generated on fire.

Specific fire fighting method

Use the same fire fighting method as the general fire. Fight fire from the safe distance.

Protection of fire fighter

Wear fire retardant clothing and respiratory equipment when fighting fire. Work from the windward.

### 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Clean up the floor immediately because it may be slippery if pellet or powder remains.

Environmental precautions

Collect all leakage on the water surface such as drain system considering adverse effect to avian species and fish.

Methods for recovery, neutralization, containment and cleaning up.

Sweep up or clean with vacuum cleaner, collect and dispose of.

Prevention of secondary disaster

See "13. DISPOSAL CONSIDERATION"

### 7. HANDLING AND STORAGE

Handling

Engineering measures

Wear eye protection, heat-resistant gloves, long-sleeved work clothing for burn prevention when handling melted resin. Avoid breathing gases generated from the melted resin.

Local exhaust, total ventilation

Use effective local exhaust at the generating point of gases because gasses are generated when handling melted resin using extruder or injection molding machine. Perform total ventilation by ventilation fan at indoor or working area operating above procedure.

Cautions to fire

## SAFETY DATA SHEET

This resin in pellet condition is flame-retardant resin component and does not ignite or explode at room temperature. However gases may be generated if fire occurs in neighborhood and fire fighting activity may become difficult. Therefore keep working area neat and tidy, do not use fire.

- (1) Do not use heater with open flame. (stove, open fire, etc)
- (2) Do not carry match, lighter. No smoking.
- (3) Ground facilities and equipments (extruder, molding machine, air-conveying line, bag filters, etc) in order to prevent static discharge.
- (4) Use safe non-sparking tools.
- (5) Avoid generation or approach of any other ignition sources.

### Precautions for safe handling

- (1) Do not eat or drink when using this product.
- (2) If leaked on the floor, remove and keep cleaned up. If leakage is left the floor becomes slippery and may cause a fall.
- (3) Determine and keep proper working process.

### Storage

Store at the place where fulfills below storage conditions.

- (1) Protect from direct sunlight.
- (2) Protect from high temperature and humidity.
- (3) Store and keep away from ignition source.
- (4) Take precautionary measures against static discharge.

### Safe containers and packaging material

Containers and packaging materials should fulfill storage conditions.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Facility measures

See "7. HANDLING AND STORAGE" for facility measures.

### Administrative level, allowable limit

Gases are generated from melted resin but administrative level and allowable limit are not established.

### Dust

Allowable limit for this resin is not established in ACGIH. However below values are applicable for dust.

<Airborne Exposure Limit (reference 1,2)>

[OSHA PEL]

15 mg/m<sup>3</sup> (Total dust)

5 mg/m<sup>3</sup> (Respirable fraction)

[ACGIH : TLV-TWA(2015)]

10 mg/m<sup>3</sup> (Inhalable particulate)

3 mg/m<sup>3</sup> (Respirable particulate)

### Protective equipment

Respiratory protection

**SAFETY DATA SHEET**

Wear gas mask for organic gas when working in a place where generated gas or fume may be breathed. Wear dust control mask when dust is caused by the works such as machinery processing of resin product, sanding, removing resing powder from bag filter, cleaning of sieving machine.

**Hand protection**

It is recommended to wear hand protection if necesasry. Especially when handling melted resin, wear heat-resistant gloves for burn prevention.

**Eye protection**

It is recommended to wear side-shielded eye protection made with resin, resin goggles.

**Skin and body protection**

Wear long-sleeved clothing when handling melted resin for burn prevention.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : Pellet  
Physical state : Solid  
Odor : Slight specific odor  
pH : Not applicable

**Melting point**

Product name	FR270, FR370	FR200, FR250, FR290, FR650
Melting point	255-270 °C (491-518 °F)	215-265 °C (419-509 °F)

Decomposition point : Over 330 °C (Over 626 °F)  
Ignition point : Over 400 °C (Over 752 °F)  
Flash point : Over 400 °C (Over 752 °F)  
Explosion limit : No data  
Upper / lower : Precautionary measures for static discharge are necessary if handled as powder  
Specific gravity : 1.1- 1.8  
Solubility  
Water : Insoluble  
Other solvent : Soluble in inorganic acid (formic acid, sulfuric acid etc.)  
Octanol / water partition coefficient : No data

**10. STABILITY AND REACTIVITY**

Stability : Stable at room temperature as far as stored protected from direct sunlight, away from fire or heat source.  
Reactivity : No reactivity.  
Conditions to avoid : Direct sunlight, fire, heat source and generation of its dust.  
Materials to avoid : Not specific.  
Hazardous decomposition products :  
Black fume, gases such as CO<sub>2</sub>, CO, slight amount of HCN, NH<sub>3</sub> may be generated in combustion.

## SAFETY DATA SHEET

### 11. TOXICOLOGICAL INFORMATION

These products might contain Melamine cyanurate(≤ 40wt%), Carbon black(≤ 3wt%), Iron oxide(≤ 5wt%), Titanium dioxide(≤ 10wt%), and Complex of metal oxides(≤ 7wt%).

GHS classification is shown in the table as below. This toxicological classification is based on reference 3, 4, 5, and 6.

	Resin Additives	Melamine cyanurate (*1)	Carbon black(*2)	Iron oxide	Titanium dioxide	Complex of metal oxides(*4)	Classification of the products
Content	≥ 55wt%	≤ 40wt%	≤ 3wt%	≤ 5wt%	≤ 10wt%	≤ 7wt%	
Skin Corrosion/Irritation	Cannot be classified	Cannot be classified	Cannot be classified	Category 2	Not classified	Cannot be classified	Cannot be classified(1)
Serious Eye Damage/Irritation	Cannot be classified	Cannot be classified	Cannot be classified	Category 1	Category 2B	Cannot be classified	Cannot be classified(2)
Carcinogenicity	Cannot be classified	Cannot be classified	Cannot be classified (*3)	Not classified	Category 2	Cannot be classified	Cannot be classified(3)
Specific Target Organ Systematic Toxicity (Single Exposure)	Cannot be classified	Cannot be classified	Cannot be classified	Category 3 (Respiratory tract irritation)	Cannot be classified	Cannot be classified	Cannot be classified(3)
Specific Target Organ Systematic Toxicity (Repeated Exposure)	Cannot be classified	Category 2 (Kidneys)	Cannot be classified	Category 1 (Respiratory system)	Cannot be classified	Cannot be classified	Cannot be classified (3 and 4)

\*1) Based on the toxicological information from the manufacturer.

\*2) See reference 4

\*3) In the report (reference 5), the toxicological status of carbon black is specified as “not applicable”.

\*4) See reference 6

#### Notes

(1) Iron oxide exists in sold pellet, therefore it is not likely to come in contact to skin. Therefore, Classification of the products would be “Cannot be classified”.

(2) Iron oxide and Titanium dioxide exist in sold pellet, therefore it is not likely to come in contact with eyes as dust, mist, gas and vapor.

Therefore, Classification of the products would be “Cannot be classified”.

(3) Iron oxide and Titanium dioxide exist in sold pellet, therefore it cannot be drifted to atmosphere like dust, mist, gas and vapor.

Therefore, Classification of the products would be “Cannot be classified”.



## SAFETY DATA SHEET

(4) Melamine cyanurate is categorized as “Category 2 (Kidneys)” and included as 40wt% maximum in the product.

But, if you do not ingest it repeatedly, there is not nearly risk due to repeated exposure.

Therefore, Classification of the products would be “Cannot be classified”.

### 12. ECOLOGICAL INFORMATION

These products might contain Melamine cyanurate(≤ 40wt%), Carbon black(≤ 3wt%), Iron oxide(≤ 5wt%), Titanium dioxide(≤ 10wt%), and Complex of metal oxides(≤ 7wt%).

GHS classification is shown in the table as below. This toxicological classification is based on reference 3, 4, 5, and 6.

	Resin Additives	Melamine cyanurate	Carbon black(*1)	Iron oxide	Titanium dioxide	Complex of metal oxides(*2)	Classification of the products
Content	≥ 55wt%	≤ 40wt%	≤ 3wt%	≤ 5wt%	≤ 10wt%	≤ 7wt%	
Hazardous to the aquatic environment ( Acute Hazard )	Cannot be classified	Cannot be classified	Not classified	Cannot be classified	Cannot be classified	Cannot be classified	Cannot be classified
Hazardous to the aquatic environment ( Chronic Hazard )	Cannot be classified	Cannot be classified	Cannot be classified	Cannot be classified	Cannot be classified	Cannot be classified	Cannot be classified

\*1) See reference 4

\*2) See reference 6

#### Notes

Classification of the products would be “Cannot be classified” based on GHS Classification criteria for mixture.

### 13. DISPOSAL CONSIDERATIONS

Dispose of according to regulation and standard of regional government.

Avoid direct release of waste containing this product (effluent, solid and washing water) to the river or landfill. In case of incineration treat by the method in accordance with relevant laws such as Air Pollution Control Law using the incinerator. Remove all the residues before disposal of the container (paper bag, drum, flexible container) of this product after use, dispose of in accordance with relevant laws and do not re-use for other usage.

### 14. TRANSPORT INFORMATION

International regulations

## SAFETY DATA SHEET

IMDG : Not Restricted  
 ICAO-TI/ IATA-DGR : Not Restricted  
 UN Classification : Not Restricted  
 UN Number : Not Restricted  
 Domestic regulations : Not Restricted  
 Marine pollutant : Not Restricted

Special safety precautions and conditions during transport :

Do not handle roughly and keep dry not to break packaging bag. If the bag is broken and pellet is spilt, pay attention not to fall by slippery floor. If transported by air-conveying line take prevention measures against static discharge.

### 15. REGULATORY INFORMATION

#### USA

OSHA :

These products are not hazardous as defined by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

TSCA :

All ingredients are on the TSCA inventory.

40 CFR 799 Subpart B,C :	Not Applicable
40 CFR 721 Subpart E :	Not Applicable
40 CFR 707 Subpart D :	Not Applicable
40 CFR 747,749,761,762,763,766 :	Not Applicable
40 CFR 712(d),(e) :	Not Applicable

CERCLA/SUPERFUND (40 CFR 117,302) :

These products contain no Reportable Quantity (RQ) Substances.

SARA Hazard Category :

These products have been reviewed according to the EPA Hazard Categories promulgated under SECTION 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the Following categories: Not to have met any hazard category.

SARA 313 Information :

These products contain no substance subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

U.S. State Regulations :

These products might be included Carbon black, Iron oxide, and Titanium dioxide. These ingredients might be governed by various state regulations in U.S.

\*Please use these products after confirming the state regulations.

#### EU

(EC) 1272/2008 (CLP) Annex VI Table 3.1 :	Not Applicable
(EC) 1272/2008 (CLP) Annex VI Table 3.2 :	Not Applicable
(EC) 1272/2008 (CLP) :	Not Applicable

## SAFETY DATA SHEET

REACH Annex XIV : Not Applicable

REACH Annex XVII :

The products in some colors may contain a small amount of nickel compounds as the complex of metal oxides. In this case, the maximum content is 7wt%.

SVHC (REACH) : Does not contain more than 0.1wt%.

ELV (2011/37/EU) : Does not contain more than limit value.

RoHS (2011/65/EU) : Does not contain more than limit value.

### China

Limited toxic chemical substances for export : Not Applicable

Prohibited cargo list for import and export : Not Applicable

List of Dangerous Goods : Those products don't contain the dangerous goods.

List of Hazardous Chemicals : Those products don't contain the hazardous chemicals.

General rule for classification and hazard communication of Chemicals. (GB.13690) :  
 Not Applicable

### Korea

Prohibited or regulated toxic substances : Not Applicable

Toxic / Observed substances :

Those products don't contain the toxic or observed substances.

### Taiwan

Dangerous and Harmful Materials :

These products might contain the dangerous and harmful materials.

Material name	CAS No.	Maximum content
Carbon black	1333-86-4	3wt%
C.I. pigment blue 28	1345-16-0	7wt%
Pigment Yellow 150	68511-62-6	7wt%

Toxic substances : Those products don't contain the toxic substances.

## 16. OTHER INFORMATION

These products are used only for raw material of LEONA compound.

Use is prohibited to other usages.

Refer to "LEONA Technical information " for additional guidance and information

### NOTE:

The information furnished in this Safety Data Sheet is accurate to the best knowledge of ASAHI KASEI CORPORATION ( "Asahi" ) as of the date of its publication.

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## SAFETY DATA SHEET

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### Reference

- 1) ACGIH, "Guide to Occupational Exposure Value", (2015)
- 2) ACGIH, "TLVs, and BEIs Based on the Documentation of the Threshold Values for Chemical Substances and Physical Agents & Biological Exposure Indices", (2015)
- 3) Incorporated Administration Agency National Institute of Technology and Education HP, "Material List of GHS Classification", <http://www.safe.nite.go.jp/ghs/list.html>
- 4) Hazard information obtained from the supplier of carbon black
- 5) Japan Carbon Black Association, "The safety of carbon black as nano-materials", (2011)
- 6) Japan Complex Inorganic Colored Pigment Association, "Safety of CICP", <http://www.kaseikyo.jp/jcicpa/E-anzensei.html>