FRV1106

SAFETY DATA SHEET

1 Product and company identification

Name of chemical (Product name)	:	FRV1106
Manufacturer/Importer/Distributor Information	:	Momentive Performance Materials Japan LLC Akasaka Park Building 5-2-20 Akasaka, Minato-ku Tokyo Japan
Contact person	:	commercial.services@momentive.com
Telephone	:	+81-3-5544-3100
Telefax	:	+81-3-5544-3101
Emergency telephone number	:	+81-3-5544-3111 +81-276-31-4118 (night / weekend)
Responsible Department	:	Product Stewardship & Compliance Group

2 Hazard(s) identification

GHS classification:

Health Hazards:

Skin Corrosion/Irritation Category 2

GHS label elements:

Pictograms:

Signal Word: Warning

Hazard Statement: Causes skin irritation.

Precautionary Statements:

Prevention: Wash hands thoroughly after handling. Wear protective gloves.

Response: IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Specific treatment (see on this label). Take off contaminated clothing and wash it before reuse.

Storage: Not applicable

Disposal: Not applicable

Other hazards which do not result in classification:
none

3 Composition/information on ingredients

Chemical nature: Silicone compound

Mixtures

Chemical Identity	CAS number	Concentration*
Red iron oxide	1309-37-1	1 - 10%
di-tert-butoxydiacetoxysilane	13170-23-5	1.0 - 10%
Octamethylcyclotetrasiloxane	556-67-2	0.1 - 1.0%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4 First-aid measures

Inhalation: If inhaled, move victim to fresh air and seek medical attention.

Skin Contact: After contact with skin, remove product mechanically. Wash with plenty of soap and water. Get medical attention promptly if symptoms occur after washing.

Eye contact: Flush thoroughly with water for at least 15 minutes. Get medical assistance.

Ingestion: If swallowed, do NOT induce vomiting. Give a glass of water. Do not give victim anything to drink if he is unconscious. Get medical attention if any discomfort continues.

Most important symptoms/effects, acute and delayed

Symptoms: No data available.

Hazards: No data available.

5 Fire-fighting measures

Extinguishing media: Extinguish with foam, carbon dioxide or dry powder.

Unsuitable extinguishing media: No data available.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Wash skin thoroughly with soap and water. Keep container tightly closed and in a well-ventilated place. See Section 8 of the SDS for Personal Protective Equipment. Avoid contact with skin and eyes.

Environmental Precautions: No data available.

Methods or materials for containment and cleaning up:	Wipe, scrape or soak up in an inert material and put in a container for disposal. Wash walking surfaces with detergent and water to reduce slipping hazard. Wear proper protective equipment as specified in the protective equipment section.
Prevention of secondary hazards:	No data available.

7 Handling and storage

Handling

Technical measures (e.g. Local and general ventilation):	Provide adequate general and local exhaust ventilation. Eyewash bottle with clean water.
Safe handling advice:	"Wear eye, hand and respiratory protection when in handling." Ground container and transfer equipment to eliminate static electric sparks. Protect from moisture. Seal opened containers and use up as soon as possible. Acetic acid is formed during processing. Use only in well-ventilated areas.
Contact avoidance measures:	Eyewash bottle with clean water. Use only in well-ventilated areas. When using do not eat, drink or smoke. Wash hands after handling.
Hygiene measures:	Avoid contact with eyes, skin, and clothing. Ensure adequate ventilation, especially in confined areas. Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. When using do not eat, drink or smoke.

Storage

Safe storage conditions:	Store in a dark, cool place indoors, with container tightly closed.
Safe packaging materials:	No data available.

8 Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits:

Chemical name	Type	Exposure Limit Values	Regulation Sources
Red iron oxide - Dust.	TLV	0.025 mg/m3	Japan. OELs - ISHL. (Workplace Environment Assessment Standards), as amended (09 2015)
Red iron oxide - Total dust.	TWA	4 mg/m3	Japan. OELs - JSOH (Recommendation of Occupational Exposure Limits), as amended (05 2014)
Red iron oxide - Respirable dust.	TWA	1 mg/m3	Japan. OELs - JSOH (Recommendation of Occupational Exposure Limits), as amended (05 2014)
	TWA	1 mg/m3	Japan. OELs - JSOH (Recommendation of Occupational Exposure Limits), as amended (09 2015)
Red iron oxide - Total dust.	TWA	4 mg/m3	Japan. OELs - JSOH (Recommendation of Occupational Exposure Limits),

Chemical name	Type	Exposure Limit Values	Regulation Sources
			as amended (09 2015)
Acetic Anhydride	CEILING	5 ppm 21 mg/m3	Japan. OELs - JSOH (Recommendation of Occupational Exposure Limits), as amended (05 2014)
Acetic acid	TWA	10 ppm 25 mg/m3	Japan. OELs - JSOH (Recommendation of Occupational Exposure Limits), as amended (05 2014)

Personal protective equipment (ppe)

Respiratory Protection: Gas mask with organic vapor canister and dust and mist filter.

Hand Protection: Chemical resistant gloves

Eye Protection: Safety glasses with side shields

Skin and Body Protection: Chemical resistant clothing Wear rubber boots.

9 Physical and chemical properties

Physical state:	solid
Form:	Paste
Color:	Red
Odor:	Acetic acid.
Odor threshold	No data available.
Melting point/freezing point	No data available.
Initial boiling point and boiling range	>176 °C1.013 hPa
Flammability	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper:	No data available.
Explosive limit - lower:	No data available.
Flash Point	>121 °C
Evaporation rate	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
SADT	No data available.
pH	No data available.
Viscosity, dynamic:	No data available.
Viscosity, kinematic:	No data available.
Solubility(ies)	
Solubility in water:	No data available.
Solubility (other):	Insoluble
Partition coefficient (n-octanol/water)Log Pow	No data available.
Vapor pressure	No data available.
Density	No data available.
Relative density	No data available.

Vapor density No data available.

10 Stability and reactivity

Reactivity: No dangerous reaction if used as recommended.

Chemical Stability: No data available.

Possibility of hazardous reactions: No data available.

Conditions to avoid: No data available.

Incompatible Materials: The catalysis of strong acids or bases cause polymerization or decomposition.

Hazardous Decomposition Products: Generates acetic acid during cure. In case of fire, gives off (emits): Carbon dioxide Silicon dioxide. Measurements at temperatures above 150°C in presence of air (oxygen) have shown that small amounts of formaldehyde are formed due to oxidative degradation.

11 Toxicological information

Acute toxicity (list all possible routes of exposure)

Oral
Product: ATEmix: 126,582.28 mg/kg

Dermal
Product: Not classified for acute toxicity based on available data.

Components:

Red iron oxide	No data available.
di-tert-butoxydiacetoxysilane	No data available.
Octamethylcyclotetrasiloxane	LD 50 (Rat): > 2,375 mg/kg

Inhalation
Product: Not classified for acute toxicity based on available data.

Repeated dose toxicity
Product: No data available.

Skin Corrosion/Irritation
Product: Not Classified

Components:

Red iron oxide	No data available.
di-tert-butoxydiacetoxysilane	OECD Test Guideline 404 (Rabbit): Causes burns. The health hazard evaluation is based on the toxicological properties of a similar material. Category 1B
Octamethylcyclotetrasiloxane	No data available.

Serious Eye Damage/Eye Irritation

Product: OECD-Guideline 405 (Acute Eye Irritation/Corrosion) (Rabbit): Non irritating The health hazard evaluation is based on the toxicological properties of a similar material.

Components:

Red iron oxide	No data available.
di-tert-butoxydiacetoxysilane	No data available.
Octamethylcyclotetrasiloxane	OECD-Guideline 405 (Acute Eye Irritation/Corrosion) (Rabbit): Non irritating

Respiratory sensitization

Product: No data available.

Components:

Red iron oxide	No data available.
di-tert-butoxydiacetoxysilane	No data available.
Octamethylcyclotetrasiloxane	No data available.

Skin sensitization

Product: No data available.

Components:

Red iron oxide	No data available.
di-tert-butoxydiacetoxysilane	No data available.
Octamethylcyclotetrasiloxane	No data available.

Carcinogenicity

Product: No data available.

Components:

Red iron oxide	No data available.
di-tert-butoxydiacetoxysilane	No data available.
Octamethylcyclotetrasiloxane	No data available.

Japan Society for Occupational Health: Carcinogen:
No carcinogenic components identified

Japan. ISHL Designated Carcinogen:
No carcinogenic components identified

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

Germ Cell Mutagenicity

In vitro

Product: No data available.

Components:

Red iron oxide	No data available.
di-tert-butoxydiacetoxysilane	No data available.
Octamethylcyclotetrasiloxane	Ames-Test (OECD-Guideline 471 (Genetic Toxicology: Salmonella typhimurium, Reverse Mutation Assay)): negative (not mutagenic) Mouse Lymphoma Assay (OECD Guidline 476): negative (not mutagenic)

In vivo

Product: No data available.

Components:

Red iron oxide	No data available.
di-tert-butoxydiacetoxysilane	No data available.
Octamethylcyclotetrasiloxane	No data available.

Reproductive toxicity

Product: No data available.

Components:

Red iron oxide	No data available.
di-tert-butoxydiacetoxysilane	No data available.
Octamethylcyclotetrasiloxane	No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Components:

Red iron oxide	No data available.
di-tert-butoxydiacetoxysilane	No data available.
Octamethylcyclotetrasiloxane	No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Components:

Red iron oxide	No data available.
di-tert-butoxydiacetoxysilane	No data available.
Octamethylcyclotetrasiloxane	No data available.

Aspiration Hazard

Product: No data available.

Components:

Red iron oxide	No data available.
di-tert-butoxydiacetoxysilane	No data available.
Octamethylcyclotetrasiloxane	No data available.

Other effects:

Octamethylcyclotetrasiloxane (D4) Ingestion: Rodents given large doses via oral gavage of Octamethylcyclotetrasiloxane (1600mg/kg/day,14 days), developed increased liver weights relative to unexposed control animals due to hepatocellular hyperplasia (increased number of liver cells which appear normal) as well as hypertrophy (increased cell size). Inhalation: In inhalation studies, laboratory rodents exposed to Octamethylcyclotetrasiloxane (300 ppm five days/week, 90 days) developed increased liver weights in female animals relative to unexposed control animals. When the exposure was stopped, liver weights returned to normal. Microscopic examination of the liver cells did not show any evidence of pathology. This response in rats, which does not affect the animal's health, is well-documented and widely recognized. It is related to an increase of liver enzymes that metabolize and eliminate a material from the body. The increased liver weight reverses even while the D4 exposure continues. The finding is not adverse, but is considered a natural adaptive change in rats, and does not represent a hazard to humans. Inhalation studies utilizing laboratory rabbits and guinea pigs showed no effects on liver weights. Inhalation exposures typical of industrial usage (5-10 ppm) showed no toxic effects in rodents. Range finding reproductive studies were conducted (whole body inhalation, 70 days prior to mating, through mating, gestation and lactation), with D4. Rats were exposed to 70 and 700 ppm. In the 700 ppm group, there was a statistically significant reduction in mean litter size and in implantation sites. No D4 related clinical signs were observed in the pups and no exposure related pathological findings were found. A two-year, combined chronic/carcinogenicity study, during which rats were exposed to D4 by inhalation, data showed a statistically significant increase in a benign uterine tumor in female rats exposed at the highest level--a level much higher than the low levels that consumers or workers may encounter. An expert panel of independent scientists who have reviewed the results of this research concur that the finding seen in the two-year study occurred through a biological pathway that is specific to the rat and is not relevant to humans. Therefore, this observed effect does not indicate a potential health hazard to humans. In developmental toxicity studies, rats and rabbits were exposed to D4 at concentrations up to 700 ppm and 500 ppm, respectively. No teratogenic effects (birth defects) were observed in either study.

12 Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Components:

Red iron oxide	No data available.
di-tert-butoxydiacetoxysilane	No data available.
Octamethylcyclotetrasiloxane	No data available.

Toxicity to microorganisms

Product:	No data available.

Components

Red iron oxide	No data available.
di-tert-butoxydiacetoxysilane	No data available.
Octamethylcyclotetrasiloxane	No data available.

Chronic hazards to the aquatic environment

Fish

Product:	No data available.

Aquatic Invertebrates

Product:	No data available.

Toxicity to Aquatic Plants

Product:	No data available.

Components:

Red iron oxide	No data available.
di-tert-butoxydiacetoxysilane	No data available.
Octamethylcyclotetrasiloxane	No data available.

Persistence and Degradability

Biodegradation

Product:	No data available.

Components:

Octamethylcyclotetrasiloxane	3.7 % (29 d, 310 Ready Biodegradability - CO_2 in Sealed Vessels (Headspace Test)) Not readily biodegradable. Persistent

BOD/COD Ratio

Product:	No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product:	No data available.

Components:

Octamethylcyclotetrasiloxane	Bioconcentration Factor (BCF): 12,400

Partition Coefficient n-octanol / water (log Kow)

Product:	No data available.

Mobility in soil: No data available.

Hazardous to the ozone layer: Not Regulated

Further Information: No data available.

13 Disposal considerations

General information: The generation of waste should be avoided or minimized wherever possible. See Section 8 for information on appropriate personal protective equipment. Do not discharge into drains, water courses or onto the ground.

Disposal methods: This product falls under Industrial Waste based on Wastes Disposal and Public Cleansing Law. Dispose of in accordance with this law and local regulations.

Contaminated Packaging: Dispose of as unused product.

14 Transport information

International regulations

IMDG - International Maritime Dangerous Goods Code

Not regulated.

IATA

Not regulated.

National Regulations
Domestic Standard: In compliance with domestic law.

Special precautions for user: This product is not regarded as dangerous goods according to the national and international regulations on the transport of dangerous goods. Protect from moisture. keep away from odour sensitive materials Keep away from foodstuffs and animal feed.

15 Regulatory information

Japan CSCL:

Priority Assessment Chemical Substances: Not Regulated

Monitoring Chemical Substances: Not Regulated

Law concerning Pollutant Release and Transfer Register:

Specified Class 1 substance(s): Not Regulated

Class 1 Substance(s): Not Regulated
Class 2 Substance(s): Not Regulated

Industrial Safety and Health Act:

Article 57-2 Regulated Substance(s): IRON OXIDE;

Article 57 Regulated Substance(s) subject to labeling:	FERRIC OXIDE
Organic Solvent Regulation	Not Regulated
Specified Substances Regulation:	**Class 1 designated chemical substances:** Not Regulated **Class 2 designated chemical substances:** Not Regulated **Class 3 designated chemical substances:** Not Regulated

Poisonous and Deleterious Substances Control Act:

Specified poisonous substance(s):

Main law:	Not Regulated
Cabinet order:	Not Regulated

Poisonous Substance(s):

Main law:	Not Regulated
Cabinet order:	Not Regulated

Deleterious Substance(s):

Main law:	Not Regulated
Cabinet order:	Not Regulated

Fire Service Law:	Designated Combustible material (Combustible Solid) Keep away from fire
High Pressure Gas Safety Law:	Not Regulated
Act on Prevention of Marine Pollution and Maritime Disaster:	Not Regulated

Inventory Status:

Australia AICS:	y (positive listing)	Remarks: None.
EU EINECS List:	y (positive listing)	Remarks: None.
Japan (ENCS) List:	y (positive listing)	Remarks: None.
China Inventory of Existing Chemical Substances:	y (positive listing)	Remarks: None.
Korea Existing Chemicals Inv. (KECI):	y (positive listing)	Remarks: None.
Canada DSL Inventory List:	y (positive listing)	Remarks: None.
Canada NDSL Inventory:	n (negative listing)	Remarks: None.
Philippines PICCS:	y (positive listing)	Remarks: None.
US TSCA Inventory:	y (positive listing)	Remarks: On TSCA Inventory
Taiwan Chemical Substance Inventory:	y (positive listing)	Remarks: None.
REACH:	If purchased from Momentive Performance Materials GmbH in Leverkusen, Germany, all substances in this product have been registered by Momentive Performance Materials GmbH or upstream in our supply chain or are exempt from registration under Regulation (EC) No 1907/2006 (REACH). For polymers, this includes the constituent monomers and other reactants.	Remarks: None.

16 Other Information

Revision Information: ARGLO_INVSTSARGHS_JP
Issue Date: 07/19/2021
SDS No.:
Disclaimer:

Notice to reader

This material is developed and manufactured for industrial applications only. For medical or other special applications, use after performing safety testing on the product and confirming safety. Never use for human applications such as implant, impregnation, or where a residue may possibly remain in the body.

Further Information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only asa guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warrantyor quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Literature Reference: No data available.