

Material Safety Data Sheet

Product name

9209 FLOCK

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	9209 FLOCK
Recommended use of the chemical and restrictions on use	
Recommended use	Not available
Restrictions on use	Not available
Supplier	
Name	FDC Graphic Films, Inc.
Address	3820 William Richardson Dr. South Bend, IN 46628
Telephone No	(Tel) 800-634-7523

2. HAZARDS IDENTIFICATION

Hazard Classification	<p>Flammable liquid: Category 2</p> <p>Self- heating substances and mixtures: Category 2</p> <p>Serious eye damage / eye irritation: Category 1</p> <p>Carcinogenic: Category 2</p> <p>Reproductive toxicity: Category 1A</p> <p>Specific target organ toxicity (single exposure): Category 1</p> <p>Specific target organ toxicity (repeated exposure): Category 1</p>
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Label elements including precautionary statements
Symbol



Signal word	Danger
Hazard statements	<p>H225 Highly flammable liquid and vapor</p> <p>H251 Self- heating; It may catch fire</p> <p>H318 Causes serious eye damage</p> <p>H351 Suspected of causing cancer</p> <p>H360 May cause damage to the fetus or reproductive ability</p> <p>H370 Causes damage to the body of the (...)</p> <p>If prolonged or repeated exposure H372 Causes damage to (...) of the body</p>
Precautionary statements	
Prevention	<p>P201 Obtain special instructions before use.</p> <p>All safety precautions have been read and understood P202 Do not handle until.</p> <p>P210 heat, flames, sparks · Keep away from hot surfaces. - No smoking.</p> <p>P233 Keep container tightly closed.</p>



And maintain a low temperature P235 + P410 Avoid direct sunlight.



Bonded to the container and receiving equipment P240 Keep or ground.

Prevention

P241 explosion-proof electrical, ventilating, lighting, (...), please use the equipment.
 Please use only non-sparking tools P242.
 P243 Take precautionary measures against static discharge.
 (A) to P260 (dust, fumes, gas, vapor, mist, spray) Do not breathe.
 P264 Wash thoroughly after handling the treated area.
 When using this product P270 Do not eat, drink, or smoke.
 Wear P280 (eye or face protection, protective gloves, protective) (a).

Corresponding

P303 + P361 + P353 IF ON SKIN (or hair) all contaminated clothing IF ON Take off.
 Rinse skin with water / shower.
 Wash IF ON P305 + P351 + P338 eyes cautiously with water for several minutes.
 Remove contact lenses, if possible. Continue rinsing.
 P308 + P311 If exposed or concerns, call a poison center or physician.
 P308 + P313 If exposed or concerned about exposure Get medical attention.
 P310 Immediately call a poison center or physician.
 If you feel uncomfortable P314 Get medical attention.
 Keep the P321 (...) treatment.

Storage

To turn off the lights when P370 + P378 fire (...) to (a) Please use.
 Keep the P403 + P235 Keep cool and well-ventilated.
 Store in a storage place with P405 lock.
 Please maintain the distance between P407 cargo.
 Since the P413 highly reactive substances (...) while it is kept in kg or more (...)
 Please be careful not to exceed °C.
 P420 Store in the quarantine and other materials.

Disposal

(Depending on the content specified in the relevant legislation) P501 Dispose of contents of the container.

Hazard classification not included in other Hazard (NFPA)

Carbon Black

Health Not available
 Fire Not available
 Reactivity Not available

Dimethylformamide

Health 2
 Fire 2
 Reactivity 0

Methylethylketone

Health 2
 Fire 3
 Reactivity 0

POLY URETHANE RESIN

Health Not available
 Fire Not available
 Reactivity Not available

SATURATED COPOLYESTER RESIN

Health Not available
 Fire Not available
 Reactivity Not available



3. COMPOSITION/INFORMATION ON INGREDIENTS

Name	Synonym	CAS No	Content (%)
Carbon Black		1333-86-4	1-10
Viscose Cellulose – regenerated		68442-85-3	10-30
Dimethylformamide	N, N- Dimethylformamide Dimethyl formamide	68-12-2	1-15
Methylethylketone	Methylethylketone 2- Butanone Butanone	78-93-3	1-10
POLY URETHANE RESIN		Trade secret	10-30
Dimethyl tin	Dineo decanoate	68928-76-7	1-5

4. FIRST AID MEASURES

Necessary first-aid instructions by relevant routes of exposure

Inhalation: In the case of respiratory irritation, move to fresh air, consult a physician if symptoms persist.

Skin contact: In the case of skin irritation, wash off with soap and water; consult a physician if symptoms persist.

Eye contact: Remove contact lenses if present, and flush eyes with water to remove particles. consult a physician if symptoms persist.

Ingestion: Consult a physician if symptoms develop.

Description of the most important symptoms or effects, and any symptoms that are acute or delayed

Inhalation: May cause respiratory irritation.

Skin contact: Not expected to be an irritant but may cause skin irritation in some individuals. Eye contact: May cause eye irritation.

Ingestion: Unknown

Recommendations for immediate medical care and special treatment needed, when necessary: Not applicable

5. FIRE- FIGHTING MEASURES

Recommendations of suitable extinguishing equipment, and information about extinguishing equipment that is not appropriate for a particular situation: Foam, dry chemicals, CO₂; water mist to cool exposed surfaces.

Advice on specific hazards that develop from the chemical during the fire, such as any hazardous combustion products created when the chemical burns: May include, but are not limited to, CO and CO₂.

Recommendations on special protective equipment or precautions for firefighters: Firefighters should be equipped with positive pressure self-contained breathing apparatus (SCBA) when fighting all indoor fires and any significant outdoor fires and should fight fire from an upwind position.

6. ACCIDENTAL RELEASE MEASURES

Use of personal precautions (such as removal of ignition sources or providing sufficient ventilation) and protective equipment to prevent the contamination of skin, eyes, and clothing: A dust mask and goggles are recommended to prevent possible irritation from airborne fibers. Cleansing the skin after handling is advisable.

Emergency procedures, including instructions for evacuations, consulting experts when needed, and appropriate protective clothing: Not applicable

Methods and materials used for containment (e.g., covering the drains and capping procedures): Not applicable

Cleanup procedures (e.g., appropriate techniques for neutralization, decontamination, cleaning, or vacuuming; adsorbent materials; and/or equipment required for containment/clean up): Vacuum or sweep up and place in a standard disposal container. Avoid the use of air jets, if possible, to prevent fibers from becoming airborne.



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7. HANDLING AND STORAGE

Fire precautions:

Remove dust, fly and finish residues by ventilation and vacuum cleaning, especially on heat setting operations. Keep away from ignition sources. Beware of static electricity and discharges (s. point 9).

Storage: No special safety precautions.

Storage conditions: Consider technical advice referring to optimal processability.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits of chemical and biological exposure limits, etc.

National regulations

Carbon black	TWA - 3.5mg/m ³
Dimethylformamide	TWA - 10ppm 30mg/m ³ (Skin)
Methyl ethyl ketone	TWA - 200ppm 590mg/m ³ STEL - 300ppm 885mg/m ³
POLY URETHANE RESIN	Not available
Viscose Cellulose – regenerated	

Components with occupational exposure limits: None

Industrial hygiene:

No special risks if handled in accordance with good industrial hygiene practice and any legal requirements.

Personal protection: Dust mask, protecting goggles recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Appearance	Solid, Film
Color	Black
Odor	Not available
Odor threshold	Not available
pH	Not available
Melting point / freezing point	Not available
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	Not available
Vapor pressure	Not available
Solubility	Not available
Vapor density	Not available
Specific gravity	Not available
n- octanol / water partition coefficient	Not available
Ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Molecular Weight	Not available

Carbon black

Appearance

Appearance	Not available
Color	Not available
Odor	Odorless
Odor threshold	Not available



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(Not available)



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Melting point / freezing point	(About 3550 °C)
Initial boiling point and boiling range	4200 °C
Flash point	> 500 °C

Evaporation rate	(Not applicable)
Flammability (solid, gas)	Not available
Upper / lower flammability or explosive limits	Not available
Vapor pressure	Not available
Solubility	(Not melt)
Vapor density	(Not applicable)
Specific gravity	1.7- 2.1
n- octanol / water partition coefficient	Not available
Ignition temperature	900 °C
Decomposition temperature	Not available
Viscosity	Not available
Molecular Weight	12.01

Dimethylformamide

Appearance

Appearance	Liquid
Color	Colorless to yellow
Odor	Fishy
Odor threshold	300 mg/m ³
pH	6.7 (0.5mol / L aqueous solution)
Melting point / freezing point	- 61 °C
Initial boiling point and boiling range	153 °C
Flash point	58 °C (c.c.)
Evaporation rate	<1 (butyl acetate = 1)
Flammability (solid, gas)	Not applicable
Upper / lower flammability or explosive limits	15.2 / 2.2 % (100 °C)
Vapor pressure	3.87 mmHg (25°C)
Solubility	(Availability)
Vapor density	2.5 (air = 1)
Specific gravity	0.95 (water=1)
n- octanol / water partition coefficient	- 0.87
Ignition temperature	445 °C
Decomposition temperature	Not available
Viscosity	0.802 CP (25°C)
Molecular Weight	73.09

Methyl ethyl ketone

Appearance

Appearance	Liquid
Color	Colorless
Odor	Minty, sweet odor
Odor threshold	20 ppm
pH	Not available

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Melting point / freezing point

-86 °C

Initial boiling point and boiling range

80 °C



Flash point	-9 °C (c.c.)
Evaporation rate	2.7 (ether = 1)
Flammability (solid, gas)	Not available
Upper / lower flammability or explosive limits	11.5 / 1.8 %
Vapor pressure	90.6 mmHg (25°C)
Solubility	29 g/100mℓ (20°C)
Vapor density	2.41 (air=1)
Specific gravity	0.8 (water=1)
n- octanol / water partition coefficient	0.29
Ignition temperature	505 °C
Decomposition temperature	Not available
Viscosity	0.40 CP (25°C)
Molecular Weight	72.11

POLY URETHANE RESIN

Appearance	
Appearance	Liquid
Color	Colorless to yellow
Odor	Fishy
Odor threshold	Not available
pH	Not available
Melting point / freezing point	Not available
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	Not available
Vapor pressure	Not available
Solubility	Not available
Vapor density	Not available
Specific gravity	Not available
n- octanol / water partition coefficient	Not available
Ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Molecular Weight	Not available

10. STABILITY AND REACTIVITY

Chemical stability and the possibility of adverse reactions

Carbon black	Can be decomposed at a high temperature generates a toxic gas
Carbon black	Unstable at room temperature.
Carbon black	Friction, heat, sparks can be ignited by a flame
Carbon black	Powder, exploding into dust, debris, drilling, lathe, cutting, etc., or that can burn explosively
Carbon black	Even after digestion can be re- ignition
Carbon black	Flammable / combustible materials



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Carbon black

Carbon black

Some materials can fast flash

Molten material that upon contact with the skin can cause serious burns to eyes



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Carbon black	Contact with the skin can cause burns to the eyes
Carbon black	in case of fire may cause an irritating and toxic gases
Dimethylformamide	Flammable liquid and vapor
Dimethylformamide	Vigorous polymerization reaction that can cause an explosion and fire
Dimethylformamide	Flash point or more can form an explosive mixture
Dimethylformamide	Containers may explode when heated
Dimethylformamide	Highly flammable: heat, sparks, readily ignited by the flame
Dimethylformamide	Water may leak a fire / explosion hazard
Dimethylformamide	Indoor, outdoor, that the risk of steam explosions in sewers
Dimethylformamide	Vapors can form explosive mixtures with air
Dimethylformamide	Vapors can backfire (flash back), go to the source of ignition
Dimethylformamide	There may be toxic by inhalation and skin absorption
Methyl ethyl ketone	Highly flammable liquid and vapor
Methyl ethyl ketone	Vigorous polymerization reaction that can cause an explosion and fire
Methyl ethyl ketone	Flash point or more can form an explosive mixture
Methyl ethyl ketone	Containers may explode when heated
Methyl ethyl ketone	Highly flammable: heat, sparks, readily ignited by the flame
Methyl ethyl ketone	Water may leak a fire / explosion hazard
Methyl ethyl ketone	Indoor, outdoor, that the risk of steam explosions in sewers
Methyl ethyl ketone	Vapors can form explosive mixtures with air
Methyl ethyl ketone	Vapors can backfire (flash back), go to the source of ignition
Methyl ethyl ketone	Vapors may cause dizziness or asphyxiation without awareness
POLY URETHANE RESIN	Not available
Methyl ethyl ketone	Irritation to skin and eyes and if inhaled or in contact with icing image
Conditions to avoid	
Carbon black	Friction, heat, sparks, flame
Carbon black	Heat, sparks, open flame ignition sources such as
Carbon black	Drilling, lathe cutting, such as dust and debris generated
Dimethylformamide	Heat, flames, sparks · Keep away from hot surfaces. - No smoking.
Methyl ethyl ketone	Heat, flames, sparks · Keep away from hot surfaces. - No smoking.
POLY URETHANE RESIN	Not available
Materials to avoid	
Carbon black	Not available
Dimethylformamide	Not available
Methyl ethyl ketone	Not available
POLY URETHANE RESIN	Not available
Hazardous decomposition products	
Carbon black	Pungent, toxic gas
Dimethylformamide	Irritation and highly toxic gases by thermal decomposition or combustion can occur while riding
Methyl ethyl ketone	Irritation and highly toxic gases by thermal decomposition or combustion can occur while riding
POLY URETHANE RESIN	Not available

11. TOXICOLOGICAL INFORMATION

Information on the likely routes of exposure

Carbon black	It may cause irritation.
Dimethylformamide	Not available
Methyl ethyl ketone	Not available
POLY URETHANE RESIN	Not available



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SATURATED COPOLYESTER RESIN

Not available

Health Hazard Information

Acute Toxicity



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oral

Carbon black	LD50 15400 mg/kg Rat
Dimethylformamide	LD50 2800 mg/kg Rat
Methyl ethyl ketone	LD50 2737 mg/kg Rat
POLY URETHANE RESIN	Not available

Transdermal

Carbon black	LD50 3000 mg/kg Rabbit
Dimethylformamide	LD50 4720 mg/kg Rabbit
Methyl ethyl ketone	LD50 6480 mg/kg Rabbit
POLY URETHANE RESIN	Not available

inhale

Carbon black	Not available
Dimethylformamide	Steam LC50 9400 mg / m ³ 2 hr. Mouse (4.7mg / L 4 hours, less than 90% of the estimated steam saturation vapor pressure)
Methyl ethyl ketone	Vapor LC50 32 mg / l 4 hr. Mouse
POLY URETHANE RESIN	Not available

Skin corrosion or irritation

Carbon black	Not available
Dimethylformamide	Non- irritating (Rabbit), Mild (Human)
Methyl ethyl ketone	Moderate irritation (Rabbit)
POLY URETHANE RESIN	Not available

Serious eye damage or irritation

Carbon black	Not available
Dimethylformamide	Severe irritation (Rabbit)
Methyl ethyl ketone	It appears not to be irritating by vapor exposure in humans.
POLY URETHANE RESIN	Not available

Respiratory sensitization

Carbon black	Not available
Dimethylformamide	Not available
Methyl ethyl ketone	Not available
POLY URETHANE RESIN	Not available

Skin sensitization

Carbon black	Not available
Dimethylformamide	Not available
Methyl ethyl ketone	Not available
POLY URETHANE RESIN	Not available

Carcinogenic

Occupational Health and Safety Act

Carbon black	Not available
Dimethylformamide	Not available
Methyl ethyl ketone	Not available
POLY URETHANE RESIN	Not available

Ministry of Employment and Labor Notice

Carbon black	2
Dimethylformamide	Not available
Methyl ethyl ketone	Not available
POLY URETHANE RESIN	Not available

IARC

Carbon black	2B
Dimethylformamide	3
Methyl ethyl ketone	Not available

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POLY URETHANE RESIN
OSHA

Not available

Carbon black

Not available



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Dimethylformamide	Not available
Methyl ethyl ketone	Not available
POLY URETHANE RESIN	Not available
ACGIH	
Carbon black	A3
Dimethylformamide	A4
Methyl ethyl ketone	Not available
POLY URETHANE RESIN	Not available
NTP	
Carbon black	Not available
Dimethylformamide	Not available
Methyl ethyl ketone	Not available
POLY URETHANE RESIN	Not available
EU CLP	
Carbon black	Not available
Dimethylformamide	Not available
Methyl ethyl ketone	Not available
POLY URETHANE RESIN	Not available
Germ cell mutagenicity	
Carbon black	Not available
Dimethylformamide	Mutagenicity testing positive in vivo somatic
Methyl ethyl ketone	Mammalian erythrocyte micronucleus test using Voice
POLY URETHANE RESIN	Not available
Reproductive toxicity	
Carbon black	Not available
Dimethylformamide	* Employment and Labor Notice 1B
Methyl ethyl ketone	by inhalation exposure in rats showed delayed bone abnormalities, mutations of the fetus is not determined.
POLY URETHANE RESIN	Not available
Specific target organ toxicity (single exposure)	
Carbon black	Not available
Dimethylformamide	Eating disorder in humans, vomiting, abdominal, lumbar, followed by pain in the thigh showing symptoms also disappeared fibrosis of the liver, it appears like a wall thickening in the lung ground cherry in experimental animals
Methyl ethyl ketone	in the rat or mouse inhalation exposure test results appear in the relatively low concentration the effect on the central nervous system. It appears also affect the kidneys at concentrations in the rat courtyard. This prayer appears irritant by inhalation exposure in humans.
POLY URETHANE RESIN	Not available
Specific target organ toxicity (repeated exposure)	
Carbon black	the impact of waste on the reference value in the range of Category 1 and pneumoconiosis in the rat inhalation studies of people (epidermal hyperplasia, growth, pulmonary fibrosis, cell proliferation of lung ground cherry, etc.)
Dimethylformamide	Causes irregular liver function in humans, hepatocellular hypertrophy in experimental animals' centrality of Futaba, acute hepatocellular injury, SGPT and SGOT activity rises, appears in the pathologic changes in the liver of young animals
Methyl ethyl ketone	It appears the sensation of numbness in the hands and arms person. It appears central nervous disorder.
POLY URETHANE RESIN	Not available
Aspiration Hazard	
Carbon black	Not available
Dimethylformamide	Not available
Methyl ethyl ketone	Ketones less than 13 carbon atoms
POLY URETHANE RESIN	Not available

12. Impact on the environment

Ecotoxicity

Fish

Carbon black	Not available
Dimethylformamide	LC50 7100 mg/ℓ 96 hr. Lepomis
macrochirus Methyl ethyl ketone promelas	LC50 3220 mg/ℓ 96 hr. Pimephales
POLY URETHANE RESIN	Not available

Shellfish

Carbon black	EC50 5600 mg/ℓ 24 hr.
Dimethylformamide	EC50 4500 mg/ℓ 48 hr. Daphnia magna
Methyl ethyl ketone	EC50 5091 mg/ℓ 48 hr. Daphnia magna
POLY URETHANE RESIN	Not available

Birds

Carbon black	Not available
Dimethylformamide	EC50 > 500 mg/ℓ 96 hr. Scenedesmus
subspicatus Methyl ethyl ketone costatum	EC50 > 500 mg/ℓ 96 hr. Skeletonema
POLY URETHANE RESIN	Not available

Persistence and degradability

Persistence

Carbon black	Not available
Dimethylformamide	log Kow - 0.87
Methyl ethyl ketone	log Kow 0.29
POLY URETHANE RESIN	Not available

Degradability

Carbon black	Not available
Dimethylformamide	Not available
Methyl ethyl ketone	Not available
POLY URETHANE RESIN	Not available

Bio accumulative

accumulative

Carbon black	Not available
Dimethylformamide	BCF 0.3 ~ 1.2
Methyl ethyl ketone	Not available
POLY URETHANE RESIN	Not available

Biodegradable

Carbon black	Not available
Dimethylformamide	100 (%) 14 days
Methyl ethyl ketone	89 (%) 20 days

Mobility in soil

Carbon black	Not available
Dimethylformamide	Not available
Methyl ethyl ketone	Not available
POLY URETHANE RESIN	Not available

Other adverse effects

Carbon black	Not available
Dimethylformamide	Not available
Methyl ethyl ketone	Not available
POLY URETHANE RESIN	Not available



13. Disposal Considerations

Methods of disposal

Carbon black	If specified in the Waste Management Act Dispose of contents and container in accordance with regulations.
Dimethylformamide	If specified in the Waste Management Act Dispose of contents and container in accordance with regulations.
Methyl ethyl ketone	1) Keep treated with neutralization and hydrolysis and oxidation and reduction. 2) Keep the high temperature incineration or hot- melt processing. 3) Keep the solidification process.
POLY URETHANE RESIN	Not available

Disposal Considerations

Carbon black	(Depending on the content specified in the relevant legislation) Dispose of the container contents.
Dimethylformamide	(Depending on the content specified in the relevant legislation) Dispose of the container contents.
Methyl ethyl ketone	(Depending on the content specified in the relevant legislation) Dispose of the container contents.
POLY URETHANE RESIN	Not available

14. TRANSPORT INFORMATION

UN No.

Carbon black	1361
Dimethylformamide	2265
Methyl ethyl ketone	1193
POLY URETHANE RESIN	Not available

Proper Shipping Name

Carbon black	Carbon (the flora and fauna personal) (CARBON animal or vegetable origin)
Dimethylformamide	N, N- dimethylformamide (N, N- DIMETHYLFORMAMIDE)
Methyl ethyl ketone	Ethyl methyl ketone (methyl ethyl ketone) (METHYL ETHYL KETONE (METHYL ETHYL KETONE))
POLY URETHANE RESIN	Not available

Hazard class

Carbon black	4.2
Dimethylformamide	3
Methyl ethyl ketone	3
POLY URETHANE RESIN	Not available

Packing

Carbon black	II or III
Dimethylformamide	III
Methyl ethyl ketone	II
POLY URETHANE RESIN	Not available

Marine pollutants

Carbon black	Not available
Dimethylformamide	Non- applicable
Methyl ethyl ketone	non-applicable
POLY URETHANE RESIN	Not available

Transport in relation to the user needs to know, or any special safety measures

In case of fire emergency

Carbon black	F- A
Dimethylformamide	F- E
Methyl ethyl ketone	F- E
POLY URETHANE RESIN	Not available

In case of spill emergency

Carbon black	S- J
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Dimethylformamide

Methyl ethyl ketone

POLY URETHANE RESIN

S-D

S-D

Not available



15. Regulatory Information

Occupational Safety and Health Act

Carbon black	Exposure limits set material
Dimethylformamide	Management Harmful Substances
Dimethylformamide	Working environment measurement target substance (measurement period: 6 months)
Dimethylformamide	Special medical examination the substance (diagnostic period: 6 months)
Dimethylformamide	Exposure limits set material
Dimethylformamide	Limits set material
Methyl ethyl ketone	Management Harmful Substances
Methyl ethyl ketone	Working environment measurement target substance (measurement period: 6 months)
Methyl ethyl ketone	Special medical examination the substance (diagnostic period: 12 months)
Methyl ethyl ketone	Exposure limits set material

Hazardous Chemicals Control Act

Carbon black	Not available
Dimethylformamide	Toxic substances
Methyl ethyl ketone	Awareness materials
Methyl ethyl ketone	Toxic substances
POLY URETHANE RESIN	Not available

Dangerous Goods Safety Management Law

Carbon black	Not available
Dimethylformamide	4 The second kind of petroleum (water- soluble) 2000 ℓ
Methyl ethyl ketone	The first four kinds of petroleum (a non- aqueous liquid)
200 ℓ POLY URETHANE RESIN	Not available

Waste Control Act

Carbon black	Not available
Dimethylformamide	Not available
Methyl ethyl ketone	Hazardous waste
POLY URETHANE RESIN	Not available

by other domestic and foreign regulatory

National regulation

POPs Control Act

Carbon black	Not applicable
Dimethylformamide	Not applicable
Methyl ethyl ketone	Not applicable
POLY URETHANE RESIN	Not available

Foreign regulatory

USA management information (OSHA Regulation)

Carbon black	Not applicable
Dimethylformamide	Not applicable
Methyl ethyl ketone	Not applicable
POLY URETHANE RESIN	Not available

USA management information (CERCLA Regulation)

Carbon black	Not applicable
Dimethylformamide	45.3599 kg 100 lb
Methyl ethyl ketone	2267.995 kg 5000 lb
POLY URETHANE RESIN	Not available



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USA management information
(EPCRA 302 Regulation)

Carbon black	Not applicable
Dimethylformamide	Not applicable
Methyl ethyl ketone	Not applicable
POLY URETHANE RESIN	Not applicable

USA management information
(EPCRA 304 Regulation)

Carbon black	Not applicable
Dimethylformamide	Not applicable
Methyl ethyl ketone	Not applicable
POLY URETHANE RESIN	Not applicable

USA management information
(EPCRA 313 Regulation)

Carbon black	Not applicable
Dimethylformamide	Not applicable
Methyl ethyl ketone	Not applicable
POLY URETHANE RESIN	Not applicable

USA management information
(materials Rotterdam Convention)

Carbon black	Not applicable
Dimethylformamide	Not applicable
Methyl ethyl ketone	Not applicable
POLY URETHANE RESIN	Not applicable

USA management information
(Stockholm Convention substances)

Carbon black	Not applicable
Dimethylformamide	Not applicable
Methyl ethyl ketone	Not applicable
POLY URETHANE RESIN	Not applicable

USA management information
(Montreal Protocol on Substances)

Carbon black	Not applicable
Dimethylformamide	Not applicable
Methyl ethyl ketone	Not applicable
POLY URETHANE RESIN	Not applicable

EU classification (Classification)

Carbon black	Not applicable
Dimethylformamide	Repr. Cat. 2; R61Xn; R20/21Xi; R36
Methyl ethyl ketone	F; R11Xi; R36R66R67
POLY URETHANE RESIN	Not applicable

EU classified information (Risk phrases)

Carbon black	Not applicable
Dimethylformamide	R61, R20/21, R36
Methyl ethyl ketone	R11, R36, R66, R67
POLY URETHANE RESIN	Not applicable

EU classified information (safety phrases)

Carbon black	Not applicable
Dimethylformamide	S53, S45
Methyl ethyl ketone	S2, S9, S16
POLY URETHANE RESIN	Not applicable



16. OTHER INFORMATION

Source of data

Carbon black

Corporate Solution from Thomson Micromedex(<http://csi.micromedex.com>)
ECB-ESIS (European chemical Substances Information System) (<http://ecb.jrc.it/esis>)
ECOTOX Database, EPA(<http://cfpub.epa.gov/ecotox>)
IUCLID Chemical Data Sheet, EC- ECB
International Chemical Safety Cards (ICSC)(<http://www.nihs.go.jp/ICSC>)
TOXNET, U.S. National Library of Medicine (<http://toxnet.nlm.nih.gov>)

The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>)

Dimethylformamide

HSDB (smell) HSDB
(Odor threshold)
HSDB (pH)
ICSC (Melting / freezing point) ICSC
(Boiling range)
ICSC (Flashpoint)
ICSC (Explosion range of upper / lower
limit) HSDB (Vapor pressure)
ICSC(Solubility) ICSC
(Vapor Density) ICSC
(importance)
ICSC (n- octanol / water partition coefficient)
ICSC (Ignition temperature)
IUCLID(Biodegradable)

Methyl ethyl ketone

HSDB (smell) HSDB
(Odor threshold)
HSDB (pH)
ICSC (Melting / freezing point) ICSC
(Boiling range)
ICSC (Flashpoint)
ICSC (Explosion range of upper / lower
limit) HSDB (Vapor pressure)
ICSC(Solubility)

ICSC (Vapor Density) ICSC
(importance)
ICSC (n- octanol / water partition coefficient)
ICSC (Ignition temperature)
IUCLID(Biodegradable)

Date First	2015- 04- 13
Revision number and date	
Revision number	1 times
Date of last revision	2021- 09- 28