



Akzonobel Industrial Coatings Korea

# MATERIAL SAFETY DATA SHEET

## SENOSOFT SF-10 4X(YFA)

Date of issue: 2015-02-11

Revision date: Not applicable

Version: R0001.0001

### 1. IDENTIFICATION

#### A. Product name

- SENOSOFT SF-10 4X(YFA) [KF000033765]

#### B. Recommended use and restriction on use

- General use : 플라스틱용 페인트
- Restriction on use : 용도 이외의 사용을 금함

#### C. Manufacturer / Supplier / Distributor information

##### ○ Manufacturer information

- Company name : Akzonobel Industrial Coatings Korea Ltd.
- Address : 60, Bonsan 1-ro 56beon-gil, Jinyeong-eup, Gimhae-si, Gyeongsangnam-do, Korea
- Dept. :
- Telephone number :
- Emergency telephone number : (82) 55-720-0200
- Fax number :
- E-mail address :

##### ○ Supplier/Distributor information

- Company name : Akzonobel Industrial Coatings Korea Ltd.
- Address : 11, Byeolmang-ro 459beon-gil, Danwon-gu, Ansan-si, Gyeonggi-do, Korea
- Dept. :
- Telephone number :
- Emergency telephone number : (82) 31-490-4200
- Fax number :
- E-mail address :

### 2. HAZARD IDENTIFICATION

#### A. GHS Classification

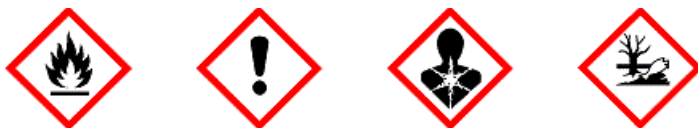
- Acute toxicity (inhalation: vapor) : Category4
- Chronic aquatic toxicity : Category2
- Carcinogenicity : Category2
- Reproductive toxicity : Category2
- Serious eye damage/irritation : Category2
- Flammable liquids : Category2
- Specific target organ toxicity(Single exposure) : Category2
- Skin sensitization : Category1
- Skin corrosion/irritation : Category2

#### B. GHS label elements

##### ○ Hazard symbols



All information concerning this product and/or suggestions for handling and use contained herein are offered in good faith and are believed to be reliable. Akzo Nobel however makes no warranty as to the accuracy of and/or sufficiency of such information.



○ **Signal words**

- Danger

○ **Hazard statements**

- H225 Highly flammable liquid and vapour
- H315 Causes skin irritation
- H317 May cause an allergic skin reaction
- H319 Causes serious eye irritation
- H332 Harmful if inhaled
- H351 Suspected of causing cancer
- H361 Suspected of damaging fertility or the unborn child
- H371 May cause damage to organs (Refer Section SDS 11)
- H411 Toxic to aquatic life with long lasting effects

○ **Precautionary statements**

**1) Prevention**

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P210 Keep away from heat/sparks/open flames/hot surfaces. ? No smoking.
- P233 Keep container tightly closed.
- P240 Ground/bond container and receiving equipment.
- P241 Use explosion-proof electrical/ventilating/lighting/equipment.
- P242 Use only non-sparking tools. Flammable liquids (chapter 2.6) 1, 2, 3
- P243 Take precautionary measures against static discharge.
- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P281 Use personal protective equipment as required.

**2) Response**

- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 If exposed or concerned: Get medical advice/attention.
- P309+P311 If exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P321 Specific treatment
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P362 Take off contaminated clothing and wash before reuse.
- P363 Wash contaminated clothing before reuse.
- P370+P378 In case of fire: Use Suitable extinguishing media for extinction(Refer Section MSDS 5).
- P391 Collect spillage.

**3) Storage**

- P403+P235 Store in a well-ventilated place. Keep cool.



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- P405 Store locked up.

#### 4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

### C. Other hazards which do not result in classification : (NFPA Classification)

#### o NFPA grade (0 ~ 4 level)

- Health : 2, Flammability : 0, Reactivity : 0

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
POLYESTER POLYOL	-	-	10 ~ 20
polyester resin	-	-	10 ~ 20
4-Methyl-2-pentanone	Methylisobutyl ketone, MIBK	108-10-1	10 ~ 20
Isobutyl acetate	Acetic acid, 2-methylpropyl ester	110-19-0	10 ~ 20
n-Butyl acetate	Acetic acid, butyl ester	123-86-4	1 ~ 10
Silicon dioxide	Silic anhydride	7631-86-9	1 ~ 10
N-methylpyrrolidone	N-Methyl-alpha-pyrrolidinone	872-50-4	1 ~ 10
DIACETONE ALCOHOL	4-Hydroxy-4-methyl-2-pentanone	123-42-2	1 ~ 10
Decanedioic acid bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester	Decanedioic acid, 1,10-bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester	41556-26-7	1 ~ 10
Carbon black	Acetylene black	1333-86-4	1 ~ 10
Secret	Secret	-	1 ~ 10

### 4. FIRST AID MEASURES

#### A. Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms (flare, irritate) occur.
- Remove contact lenses if worn.

#### B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms (flare, irritate) occur.
- Wash thoroughly after handling.

#### C. Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.

#### D. Ingestion contact

- About whether I should induce vomiting Take the advice of a doctor.
- Rinse your mouth with water immediately.
- Get medical attention immediately.



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**E. Delayed and immediate effects and also chronic effects from short and long term exposure**

- Not available

**F. Notes to physician**

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.
- If exposed or concerned, get medical attention/advice.

**5. FIREFIGHTING MEASURES****A. Suitable (Unsuitable) extinguishing media**

- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray
- Avoid use of water jet for extinguishing

**B. Specific hazards arising from the chemical**

- Not available

**C. Special protective actions for firefighters**

- Move containers from fire area, if you can do without the risk.
- Cool containers with water until well after fire is out.
- Do not access if the tank on fire.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.
- The extremely low flash point made by fire-fighters may be less effective at digesting weeks.

**6. ACCIDENTAL RELEASE MEASURES****A. Personal precautions, protective equipment and emergency procedures**

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Move container to safe area from the leak area.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.
- Avoid skin contact and inhalation.
- Cleanup and disposal under expert supervision is advised.
- Keep unauthorized people away, isolate hazard area and deny entry.

**B. Environmental precautions**

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

**C. Methods and materials for containment and cleaning up**

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Do not use plastic containers.
- Prevent the influx to waterways, sewers, basements or confined spaces.



## 7. HANDLING AND STORAGE

### A. Precautions for safe handling

- Avoid contact with incompatible materials.
- Get the manual before use.
- Do not handle until all safety precautions have been read and understood.
- Operators should wear antistatic footwear and clothing.
- Do not inhale the steam prolonged or repeated.
- Avoid contact with heat, sparks, flame or other ignition sources.
- Contaminated work clothing should not be allowed out of the workplace.

### B. Conditions for safe storage, including any incompatibilities

- Check regularly for leaks.
- Avoid direct sunlight.
- Keep in the original container.
- No open fire.
- Prevent static electricity and keep away from combustible materials or heat sources.
- By specifying a storage area for carcinogenic substances.
- Collected them in sealed containers.
- Store away from water and sewer.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### A. Exposure limits

- ACGIH TLV
  - [4-Methyl-2-pentanone] : TWA, 20 ppm, STEL 75 ppm
  - [Isobutyl acetate] : TWA, 150 ppm (713 mg/m<sup>3</sup>)
  - [n-Butyl acetate] : TWA, 150 ppm (713 mg/m<sup>3</sup>), STEL, 200 ppm (950 mg/m<sup>3</sup>)
  - [DIACETONE ALCOHOL] : TWA, 50 ppm (238 mg/m<sup>3</sup>)
  - [Carbon black] : TWA, 3 mg/m<sup>3</sup>, Inhalable particulate matter
  - [Secret] : TWA 100 ppm (434 mg/m<sup>3</sup>), STEL, 150 ppm (651 mg/m<sup>3</sup>)
  - [Secret] : TWA, 20 ppm (87 mg/m<sup>3</sup>)
  - [Secret] : TWA, 100 ppm (303 mg/m<sup>3</sup>)
  - [Secret] : TWA 20 ppm (75 mg/m<sup>3</sup>)

### B. Engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

### C. Personal protective equipment

- Respiratory protection
  - Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
  - Respiratory protection is ranked in order from minimum to maximum.
  - Consider warning properties before use.
  - Any chemical cartridge respirator with organic vapor cartridge(s).
  - Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
  - Any air-purifying respirator with a full facepiece and an organic vapor canister.
  - For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
- Eye protection
  - Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
  - Provide an emergency eye wash station and quick drench shower in the immediate work area.
- Hand protection



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- Wear appropriate chemical resistant glove.
- **Skin protection**
  - Wear appropriate chemical resistant protective clothing.
- **Others**
  - Not available

## 9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	
- Appearance	Liquid(Viscous liquid)
- Color	black
B. Odor	Not available
C. Odor threshold	Not available
D. pH	Not available
E. Melting point/Freezing point	Not available
F. Initial Boiling Point/Boiling Ranges	100 °C
G. Flash point	21 °C
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	Not available
K. Vapour pressure	Not available
L. Solubility	Not available
M. Vapour density	Not available
N. Specific gravity	1.00~1.10
O. Partition coefficient of n-octanol/water	Not available
P. Autoignition temperature	Not available
Q. Decomposition temperature	Not available
R. Viscosity	Not available
S. Molecular weight	Not available

## 10. STABILITY AND REACTIVITY

### A. Chemical stability

- This material is stable under recommended storage and handling conditions.

### B. Possibility of hazardous reactions

- Cylinders exposed to fire may vent and release flammable gas.

### C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces
- Avoid contact with heat, sparks, flame or other ignition sources.

### D. Incompatible materials

- Not available

### E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

## 11. TOXICOLOGICAL INFORMATION

### A. Information on the likely routes of exposure

- (Respiratory tracts)



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- Not available
- **(Oral)**
  - Not available
- **(Eye/Skin)**
  - Causes serious eye irritation
  - Causes skin irritation
  - May cause an allergic skin reaction

## B. Delayed and immediate effects and also chronic effects from short and long term exposure

### ○ Acute toxicity

#### \* Oral

- [4-Methyl-2-pentanone] : LD50 = 2080 mg/kg Rat
- [Isobutyl acetate] : LD50 = 15400 mg/kg Rat
- [n-Butyl acetate] : LD50 = 14130 mg/kg Rat
- [Silicon dioxide] : LD50 = 3160 mg/kg Rat
- [N-methylpyrrolidone] : LD50 = 7725 mg/kg Rat (Oral)
- [DIACETONE ALCOHOL] : LD50 = 2520 mg/kg Rat
- [Decanedioic acid bis(1,2,2,6,6-pentamethyl-4-piperidiny) ester] : LD50 = 2369 mg/kg Rat
- [Carbon black] : LD50 = 15400 mg/kg Rat
- [Secret] : LD50 = 5000 mg/kg Rat
- [Secret] : LD50=3550 mg/kg rat
- [Secret] : LD50 = 8532 mg/kg Rat
- [Secret] : LD50 = 600 mg/kg Rat
- [Secret] : LD50 = 2000 ~ 3000 mg/kg Rat (female)
- [Secret] : LD50 = 3500 mg/kg Rat
- [Secret] : LD50 = 2200 mg/kg Rat
- [Secret] : LD50 > 8000 mg/kg Rat
- [Secret] : LD50 = 1540 mg/kg Rat
- [Secret] : rat LD50=2600 mg/kg

#### \* Dermal

- [4-Methyl-2-pentanone] : LD50 = 3000 mg/kg rabbit
- [Isobutyl acetate] : LD50 = 17400 mg/kg rabbit
- [n-Butyl acetate] : LD50 = 17600 mg/kg Rabbit
- [N-methylpyrrolidone] : LD50 = 5000 mg/kg Rat
- [DIACETONE ALCOHOL] : LD50 = 13630 mg/kg Rabbit
- [Carbon black] : LD50 = 3000 mg/kg rabbit
- [Secret] : LD50 4350 mg/kg Rabbit
- [Secret] : LD50 > 5000 mg/kg Rabbit
- [Secret] : LD50 = 15400 mg/kg Rabbit
- [Secret] : LD50 > 2000 mg/kg Rat
- [Secret] : LD50 = 2400 mg/kg Rat
- [Secret] : rabbit LD50=12,000 mg/kg

#### \* Inhalation

- [4-Methyl-2-pentanone] : LC50 = 8.2 mg/l Rat
- [Isobutyl acetate] : LC50 = 38.0 mg/L/4 hr Rat
- [n-Butyl acetate] : Steam LC50 = 0.74 mg/L/4hr Rat (GLP)
- [Secret] : Steam LC50 6700 ppm 4 hr Rat (Equivalents : 29.09 mg/L)
- [Secret] : Steam LC50 = 28.8 mg/L/4 hr Rat
- [Secret] : Steam LC50 = 9.6 mg/L/4 hr Rat
- [Secret] : LC50 = 48.5 mg/l 4 hr Rat
- [Secret] : dust LC50 = 9.44 mg/L 4hr (75.5 mg/l 30 min의 환산치) Rat
- [Secret] : LC50 = 36 mg/l 4 hr Rat
- [Secret] : rat LC50=28.1 mg/L/4hr



- **Skin corrosion/irritation**
  - Causes skin irritation
- **Serious eye damage/irritation**
  - Causes serious eye irritation
- **Respiratory sensitization**
  - Not available
- **Skin sensitization**
  - May cause an allergic skin reaction
- **Carcinogenicity**
  - \* **IARC**
    - [4-Methyl-2-pentanone] : Group 2B
    - [Silicon dioxide] : Group 3
    - [Carbon black] : Group 2B
    - [Secret] : Group 3
    - [Secret] : Group 2B
  - \* **OSHA**
    - Not available
  - \* **ACGIH**
    - [4-Methyl-2-pentanone] : A3
    - [Carbon black] : A3
    - [Secret] : A4
    - [Secret] : A3
  - \* **NTP**
    - Not available
  - \* **EU CLP**
    - Not available
- **Germ cell mutagenicity**
  - Not available
- **Reproductive toxicity**
  - Suspected of damaging fertility or the unborn child
- **STOT-single exposure**
  - May cause damage to organs (Refer Section SDS 11)
- **STOT-repeated exposure**
  - Not available
- **Aspiration hazard**
  - Not available

## 12. ECOLOGICAL INFORMATION

### A. Ecotoxicity

- **Fish**
  - [4-Methyl-2-pentanone] : LC50 = 540 mg/ℓ 96 hr
  - [Isobutyl acetate] : LC50 = 17 mg/ℓ 96 hr
  - [n-Butyl acetate] : LC50 = 62 mg/ℓ 96 hr
  - [N-methylpyrrolidone] : LC50 = 832 mg/ℓ 96 hr
  - [DIACETONE ALCOHOL] : LC50 = 420 mg/ℓ 96 hr
  - [Decanedioic acid bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester] : LC50 = 0.97 mg/ℓ 96 hr *Lepomis macrochirus*
  - [Secret] : LC50 = 0.996 mg/ℓ 96 hr
  - [Secret] : LC50 3.3 mg/ℓ 96 hr
  - [Secret] : LC50 > 20000 mg/ℓ 96 hr *Oncorhynchus mykiss*
  - [Secret] : LC50 ≥ 100 mg/ℓ 96 hr *Oryzias latipes*
  - [Secret] : LC50 = 344 mg/ℓ 96 hr
  - [Secret] : LC50 = 9.09 mg/ℓ 96 hr
  - [Secret] : LC50 = 3670 mg/ℓ 96 hr



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- [Secret] : LC50 24 mg/ℓ 96 hr *Oncorhynchus mykiss*

#### ○ Crustaceans

- [4-Methyl-2-pentanone] : EC50 = 170 mg/ℓ 48 hr
- [n-Butyl acetate] : LC50 = 32 mg/ℓ 48 hr
- [N-methylpyrrolidone] : LC50 = 1.23 mg/ℓ 48 hr
- [Decanedioic acid bis(1,2,2,6,6-pentamethyl-4-piperidiny) ester] : EC50 = 20 mg/ℓ 24 hr
- [Carbon black] : EC50 = 5600 mg/ℓ 24 hr
- [Secret] : LC50 = 0.110 mg/ℓ 48 hr
- [Secret] : LC50 190 mg/ℓ 96 hr
- [Secret] : EC50 = 373 mg/ℓ 48 hr *Daphnia magna*
- [Secret] : EC50 > 500 mg/ℓ 48 hr (Cyclops)
- [Secret] : LC50 = 0.4 mg/ℓ 96 hr
- [Secret] : EC50 = 2300 mg/ℓ 24 hr
- [Secret] : EC50 11.5 mg/ℓ 48 hr *Daphnia magna*

#### ○ Algae

- [N-methylpyrrolidone] : EC50 > 500 mg/ℓ 72 hr
- [Decanedioic acid bis(1,2,2,6,6-pentamethyl-4-piperidiny) ester] : EC50 = 0.017 mg/ℓ 96 hr
- [Secret] : EC50 = 0.615 mg/ℓ 96 hr
- [Secret] : EC50 ≥ 1000 mg/ℓ 72 hr *Selenastrum capricornutum*
- [Secret] : EC50 = 500 mg/ℓ 72 hr
- [Secret] : EC50 = 745 mg/ℓ 48 hr

### B. Persistence and degradability

#### ○ Persistence

- [4-Methyl-2-pentanone] : log Kow = 1.38
- [Isobutyl acetate] : log Kow = 1.78
- [n-Butyl acetate] : log Kow = 1.78
- [Silicon dioxide] : log Kow = 0.53
- [N-methylpyrrolidone] : log Kow = -0.54
- [Decanedioic acid bis(1,2,2,6,6-pentamethyl-4-piperidiny) ester] : log Kow = 0.37 (at 25 °C)
- [Secret] : log Kow = 5.14
- [Secret] : log Kow = 0.43
- [Secret] : log Kow = 1.16
- [Secret] : log Kow 2.73

#### ○ Degradability

- [N-methylpyrrolidone] : BOD5/COD = 0.68
- [Secret] : (75% (20days))

### C. Bioaccumulative potential

#### ○ Bioaccumulative potential

- [Silicon dioxide] : BCF = 3.162
- [N-methylpyrrolidone] : BCF = 0.16
- [Decanedioic acid bis(1,2,2,6,6-pentamethyl-4-piperidiny) ester] : BCF = 1351
- [Secret] : BCF = 180.1
- [Secret] : BCF = 0.3493

#### ○ Biodegradation

- [n-Butyl acetate] : Biodegradability = 98 (%)
- [N-methylpyrrolidone] : Biodegradability = 73 (%) 28 day
- [DIACETONE ALCOHOL] : Biodegradability = 100 (%) 14 day (Aerobic, Easily decomposed)
- [Decanedioic acid bis(1,2,2,6,6-pentamethyl-4-piperidiny) ester] : Biodegradability = 38 (%) 28 day
- [Secret] : 39 (%)
- [Secret] : Biodegradability > 60 (%) 28 day
- [Secret] : 86 (%) 20 day



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**D. Mobility in soil**

- [Secret] : log Kow = 3.12 (measured) (ortho), 3.2 (measured) (meta), 3.15 (measurements) (p) (5)
- [Secret] : log Kow = 3.15 (11)

**E. Other adverse effects**

- Not available

**13. DISPOSAL CONSIDERATIONS****A. Disposal methods**

- Since more than two kinds of designaed waste is mixed, it is difficult to treat seperatly, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- High temperature incinerate
- After taking off organic solvents that are supposed to be recycled, incinerate the rest of them at a high degree.

**B. Special precautions for disposal**

- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

**14. TRANSPORT INFORMATION****A. UN number**

- 1263

**B. Proper shipping name**

- Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base

**C. Hazard class**

- 3

**D. Packing group**

- II

**E. Marine pollutant**

- Applicable
- [Secret] : Applicable

**F. Special precautions for user related to transport or transportation measures**

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-E (Non-water-reactive flammable liquids)
- EmS SPILLAGE SCHEDULE : S-E (Flammable liquids, floating on water)

**15. REGULATORY INFORMATION****A. National and/or international regulatory information**

- o POPs Management Law
  - Not applicable
- o Information of EU Classification
  - \* Classification
    - [4-Methyl-2-pentanone] : F; R11 Xn; R20 Xi; R36/37 R66



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- [Isobutyl acetate] : F; R11 R66
- [n-Butyl acetate] : R10 R66 R67
- [N-methylpyrrolidone] : Repr. Cat. 2; R61, Xi; R36/37/38
- [DIACETONE ALCOHOL] : Xi; R36
- [Secret] : R10 Xn; R20/21 Xi; R38
- [Secret] : R10
- [Secret] : Xn; R22 Xi; R36
- [Secret] : F; R11Xn; R20
- [Secret] : R10 Xi; R36/37 R67
- [Secret] : Repr. Cat. 3; R62 R53
- [Secret] : F; R11 Repr.Cat.3; R63 Xn; R48/20-65 Xi; R38 R67

**\* Risk Phrases**

- [4-Methyl-2-pentanone] : R11, R20, R36/37, R66
- [Isobutyl acetate] : R11, R66
- [n-Butyl acetate] : R10, R66, R67
- [N-methylpyrrolidone] : R61, R36/37/38
- [DIACETONE ALCOHOL] : R36
- [Secret] : R10, R20/21, R38
- [Secret] : R10
- [Secret] : R22, R36
- [Secret] : R11, R20
- [Secret] : R10, R36/37, R67
- [Secret] : R53, R62
- [Secret] : R11, R38, R48/20, R63, R65, R67

**\* Safety Phrase**

- [4-Methyl-2-pentanone] : S2, S9, S16, S29
- [Isobutyl acetate] : S2, S16, S23, S25, S29, S33
- [n-Butyl acetate] : S2, S25
- [N-methylpyrrolidone] : S53, S45
- [DIACETONE ALCOHOL] : S2, S24/25
- [Secret] : S2, S25
- [Secret] : S2
- [Secret] : S2, S26
- [Secret] : S2, S16, S24/25, S29
- [Secret] : S2, S7/9, S13, S24/25, S26, S46
- [Secret] : S2, S36/37, S46, S51, S61
- [Secret] : S2, S36/37, S46, S62

○ **U.S. Federal regulations**

**\* OSHA PROCESS SAFETY (29CFR1910.119)**

- Not applicable

**\* CERCLA Section 103 (40CFR302.4)**

- [4-Methyl-2-pentanone] : 2267.995 kg 5000 lb
- [Isobutyl acetate] : 2267.995 kg 5000 lb
- [n-Butyl acetate] : 2267.995 kg 5000 lb
- [Secret] : 45.3599 kg 100 lb
- [Secret] : 453.599 kg 1000 lb

**\* EPCRA Section 302 (40CFR355.30)**

- Not applicable

**\* EPCRA Section 304 (40CFR355.40)**

- Not applicable

**\* EPCRA Section 313 (40CFR372.65)**

- [4-Methyl-2-pentanone] : Applicable
- [N-methylpyrrolidone] : Applicable



- [Secret] : Applicable
- **Rotterdam Convention listed ingredients**
  - Not applicable
- **Stockholm Convention listed ingredients**
  - Not applicable
- **Montreal Protocol listed ingredients**
  - Not applicable

## 16. OTHER INFORMATION

### A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.
- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

### B. Issue date

- 2015-02-11

### C. Revision number and Last date revised

- Not applicable

### D. Other

- This MSDS is prepared according to the Globally Harmonized System (GHS).

