



1. IDENTIFICATION

A. PRODUCT NAME

- KUMHO HFA-707

B. Recommended Use and Restriction on Use

- General use : Not available
- Restriction on Use : Not applicable

C. Information of Manufacturer

- Manufacturer

- Company name : Korea Kumho Petrochemical Co., Ltd.
- Address : 45-25 Seongam-dong Nam-gu Ulsan, Korea
- Dept. : Quality Assurance Team
- Person in charge :
- Telephone number : +82-52-279-8852
- Fax number : +82-52-279-8840
- Emergency :

- Supplier / distributor

- Company name :
- Address :
- Dept. :
- Person in charge :
- Telephone number :
- Fax number :
- Emergency :

2. HAZARD IDENTIFICATION

A. GHS Classification :

- Acute inhalation toxicity : Category 4
- Respiratory sensitization : Category 1
- Carcinogenicity : Category 1B
- Reproductive toxicity : Category 1B
- Specific target organ toxicity (Single exposure) : Category 1(heart),



MATERIAL SAFETY DATA SHEET

Product : HFA-707
Issue date : 2010.03.03
Rev. date : . .

- Specific target organ toxicity (Single exposure) : Category 2(Respiratory)
- Specific target organ toxicity (Repeated exposure) : Category 1(Respiratory),
Category 2(affects the growth)
- Acute aquatic toxicity : Category 1
- Chronic aquatic toxicity : Category 1

B. GHS label elements

- Hazard symbols :



- Signal word : Danger

- Hazard statement :

- H332 (Dust)Toxic if inhaled
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H350 May cause cancer
- H360 May damage fertility or the unborn child
- H370 Causes damage to heart, respiratory
- H372 Causes damage to respiratory and affects the growth through prolonged or repeated exposure
- H400 Very toxic to aquatic life
- H410 Very toxic to aquatic life with long lasting effects

- Precautionary statements :

- Prevention
 - P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
 - P271 Use only outdoors or in a well-ventilated area.
 - P285 In case of inadequate ventilation wear respiratory protection.
 - P201 Obtain special instructions before use.
 - P202 Do not handle until all safety precautions have been read and understood.
 - P281 Use personal protective equipment as required.



MATERIAL SAFETY DATA SHEET

Product : HFA-707
Issue date : 2010.03.03
Rev. date : . .

- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P264 Wash thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P273 Avoid release to the environment.
- Response
 - P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 - P312 Call a POISON CENTER or doctor/physician if you feel unwell.
 - P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
 - P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
 - P308+P313 IF exposed or concerned: Get medical advice/attention.
 - P307+P311 IF exposed: Call a POISON CENTER or doctor/physician.
 - P314 Get medical advice/attention if you feel unwell.
 - P391 Collect spillage.
- Storage
 - P405 Store locked up.
- Disposal
 - P501 Dispose of contents/container in accordance with local/regional/national/international regulation.

C. Other hazards which do not result in classification :

- NFPA rating: (0~4 steps) : Health=1, Flammability=0, Reactivity=0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No./ECL No./EINECS No.	Contents(%)
ABS Resin	9003-56-9/KE-29398/-	50~70
Tetra Bromo Bisphenol A	79-94-7/KE-23971/201-236-9	5~30
Chlorinated Polyethylene	64754-90-1/KE-5477/-	5~20
Antimony Trioxide	1309-64-4/KE-9846/215-175-0	1~20
Antioxidant	2082-79-3/KE-3070/218-216-0	0.1~10
Wax	110-30-5/KE-13662/203-755-6	0.1~5

※ Reference No. : ECL(Registration number of Korean Existing Chemical List)



EINECS(Registration number of Europe Existing Chemical List)

4. FIRST-AID MEASURES

A. Eye Contact :

- Immediately flush eyes with plenty of water at least 15minutes.
- If irritation persists, get a doctor's examination.
- Lifting eyelids occasionally to wash eyelids down enough to follow up.

B. Skin Contact :

- Wash the contaminated skin area with running water.
- Cooling the contaminated skin with cool running water when contact with melt.
- Get medical attention when burn by melt.

C. Inhalation :

- Remove exposed person to fresh air.
- Remove victim to fresh air and keep at rest in a position comfortable.
- Intake the water to clean the throat and blow nose to remove the dust.
- Get medical attention.

D. Ingestion :

- Rinse mouth with water.
- Give large amounts of water to relieve stimulus.
- Toxic by ingestion does not high.
- If irritation or symptoms occurs, get a doctor's examination.

E. Delay and immediate effects and also chronic effects from short and long term exposure : Not available

F. Notice to Physician :

- Treatment may vary with condition of victim and specifics of incident.

5. FIRE FIGHTING MEASURE

A. Suitable (Unsuitable) extinguishing media :



MATERIAL SAFETY DATA SHEET

Product : HFA-707
Issue date : 2010.03.03
Rev. date : . .

- Extinguishing media : Powder foam, carbon dioxide, foam.
- Unsuitable Extinguishing media : Do not use direct water.
- Big Fire : Water spray, regular foam

B. Specific hazards arising from the chemical

- Combustion :
 - Generate hydrogen cyanide, halogenated compounds, carbon oxides occurs when fire.
- Levels of fire hazard :
 - Dust / air mixtures may ignite or explode.

C. Fire fighting procedures and equipments :

- Wear appropriate personal protective equipment(see section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION).
- Avoid inhalation of smoke or gas when fire fighting.
- Move container from fire area if it can be done without risk.
- Cool containers with water until well after fire is out.

6. ACCIDENTAL RELEASE MEASURES

A. Personal Precautions, Protective Equipment and Emergency procedures :

- Perform in accordance with 「 See section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION」 . Put on appropriate personal protective equipment.
- Where possible allow leak of molten material to solidify mechanical and chemical protective.
- Use a way to minimize dust.
- Avoid contact with eyes and skin.
- Avoid inhalation of substance itself or combustion.
- Evacuation against the wind.
- Avoid contact with heat, sparks, flame or other ignition sources.

B. Environmental Precautions

- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise emergency services.



C. Methods and materials for containment and cleaning up :

- For small spills.
 - Remove all sources of ignition.
 - Suppression occurrence of dust.
 - Appropriate container for disposal of spilled material collected.
 - Ventilate leak areas and clearing leak area.
- For large spills.
 - Remove all sources of ignition.
 - Suppression occurrence of dust.
 - Avoid entering to sewers or water system.
 - For disposal of spilled material in appropriate containers collected and clear surface.
 - Appropriate container for disposal of spilled material collected.

7. HANDLING AND STORAGE

A. Handling :

- Perform in accordance with 「 See section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION」 . Put on appropriate personal protective equipment.
- Handle in a well-ventilated place.
- Avoid contact with heat, sparks, flame or other ignition sources.
- Remove all sources of ignition.
- Use all the equipment after the ground.
- Wash thoroughly after handling.

B. Storage Precautionary Statements :

- Keep in original container and tightly closed.
- Avoid contact moisture.
- Avoid contact with incompatible materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limit

- Exposure limit under ISHL :
 - ABS Resin : Not available



MATERIAL SAFETY DATA SHEET

Product : HFA-707
Issue date : 2010.03.03
Rev. date : . .

- Tetra Bromo Bisphenol A : Not available
- Chlorinated Polyethylene : Not available
- Antimony Trioxide : TWA 0.5 mg/m³
- Antioxidant : Not available
- Wax : Not available

– ACGIH :

- ABS Resin : Not available
- Tetra Bromo Bisphenol A : Not available
- Chlorinated Polyethylene : Not available
- Antimony Trioxide :
A2 : Suspected as a Human Carcinogen
TWA = 0.5 mg/m³ (when Antimon)
- Antioxidant : Not available
- Wax : Not available

– Biological exposure limits : Not applicable

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 : Use the respirator be given official approval by Korea Occupational Safety & Health Agency. 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.
 - Dust, mist, fume-purifying respiratory protection
 - Any air-purifying respirator with a corpuscle filter of high efficiency
 - Any respiratory protection with a electromotion fan(for dust, mist, fume-purifying)
- ※ For Unknown Concentration or Immediately Dangerous to Life or

**MATERIAL SAFETY DATA SHEET**Product : HFA-707
Issue date : 2010.03.03
Rev. date : . .

Health

- Self-contained breathing apparatus (pressure-demand or other positive-pressure mode in combination)
- Supplied-air respirator with full facepiece
- Eye Protection : Wear primary eye protection such as splash resistant safety goggles with a secondary protection faceshield. Provide an emergency eye wash station and quick drench shower in the immediate work area.
- Hand Protection : Wear chemical resistant protected gloves if there is hazard potential for direct skin contact. Wear heat resistant protected gloves to withstand the temperature of molten product.
- Body Protection : Wear chemical resistant protected clothing if there is hazard potential for direct contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

- A. Appearance : Pellet
- B. Odor : Odorless
- C. Odor threshold : Not available
- D. pH : Not available
- E. Melting point/Freezing point : Not applicable
- F. Initial Boiling Point/Boiling Ranges : Not applicable
- G. Flash point : 350 °C
- H. Evaporating Rate : Not available
- I. Flammability (solid, gas) : Not available
- J. Upper/Lower Flammability or explosive limits : Not available
- K. Vapour pressure : Not applicable
- L. Solubility : Insoluble
- M. Vapour density (Air=1) : Not applicable
- N. Relative density : 1.15~1.18
- O. Partition coefficient of n-octanol/water : Not available
- P. Autoignition Temperature : Not applicable
- Q. Decomposition Temperature : Not applicable
- R. Viscosity : 150~170 °C
- S. Molecular weight : Not available



10. STABILITY AND REACTIVITY

A. Stability

- This material is stable under recommended storage and handling conditions

B. Possibility of Hazardous Reaction

- Will not occur.

C. Conditions to Avoid

- Avoid contact with heat, sparks, flame or other ignition sources.

D. Materials to Avoid

- Strong oxidizing agents.

E. Hazardous Decomposition Products

- Generate hydrogen cyanide, halogenated compounds, carbon oxides.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

- (Respiratory tracts) : Not applicable
- (Oral) : Not applicable
- (Eye · Skin) : Not applicable

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

Acute toxicity :

- Acute oral toxicity
 - ABS Resin : Not available
 - Tetra Bromo Bisphenol A : LD50(rat) > 5000 mg/kg bw
 - Chlorinated Polyethylene : LD50(rat) > 5000 mg/kg
 - Antimony Trioxide : LD50(rat) 5000 mg/kg
 - Antioxidant : LD50(rat) > 10000 mg/kg bw
 - Wax : LD50(rat) > 5000 mg/kg bw

- Acute dermal toxicity :



- ABS Resin : Not available
- Tetra Bromo Bisphenol A : LD50(rabbit) > 2000 mg/kg bw
- Chlorinated Polyethylene : Not available
- Antimony Trioxide : Not available
- Antioxidant : LD50(rat) > 2000 mg/kg bw
- Wax : LD50(rabbit) > 2000 mg/kg bw
- Acute Inhalation toxicity :
 - ABS Resin : Not available
 - Tetra Bromo Bisphenol A : LC50(rat) > 0.5 mg/L/8hr
 - Chlorinated Polyethylene : Not available
 - Antimony Trioxide : Not available
 - Antioxidant : LC50(rat) > 1.8 mg/L/4hr
 - Wax : Not available
- Skin corrosion/irritation :
 - ABS Resin : Not available
 - Tetra Bromo Bisphenol A :
rabbit, not irritating, TBBPA was applied to 2 intact and 2 abraded skin sites on each rabbit (5 males and 5 females). The application sites were covered with an occlusive dressing and kept in contact with the skin for 24 hours. Observations were recorded at 24 and 72 hours post exposure. All scores for all animals for all readings were zero.
 - Chlorinated Polyethylene : Not available
 - Antimony Trioxide :
Classification not possible, “ Irritative ” according to EU Risk Phrase (2005), but data that can serve as evidence are unknown. (NITE)
 - Antioxidant :
No irritation in rabbits
 - Wax :
rabbit, not irritating, 500 mg EBS in 1.2 ml Polyethylene glycol 400 (approx. 40%) occlusively applied on the skin of 6 rabbits for 24 hours.
- Serious eye damage/irritation :
 - ABS Resin : Not available
 - Tetra Bromo Bisphenol A :
rabbit, not irritating, TBBPA was instilled in the right eye of six rabbits (3males, 3 females). Four of the rabbits exhibited slight redness of the



conjunctiva at the one hr observation period. No other ocular reactions were observed during the study.

· Chlorinated Polyethylene : Not available

· Antimony Trioxide :
Causes slight irritation to rabbit

· Antioxidant :
No irritation in rabbits

· Wax :
No obvious symptoms

○ Respiratory sensitization :

- ABS Resin : Not available
- Tetra Bromo Bisphenol A : Not available
- Chlorinated Polyethylene : Not available
- Antimony Trioxide : Not available
- Antioxidant :

A number of chemical agents produce an allergic hypersensitivity dermatitis or asthma with bronchospasm and wheezing with chronic exposure.

· Wax : Not available

○ Skin sensitization :

- ABS Resin : Not available
- Tetra Bromo Bisphenol A :
guinea pig, not sensitizing, TBBPA was applied dermally to 10 guinea pigs for a total of 9 six- hr insult periods.
- Chlorinated Polyethylene : Not available
- Antimony Trioxide : Not available
- Antioxidant :
Patch- Test, human, not sensitizing
- Wax : Not available

○ Carcinogenicity :

- ABS Resin : Not available
- Tetra Bromo Bisphenol A : Not available
- Chlorinated Polyethylene : Not available
- Antimony Trioxide :
Category 1B, the substance is classified as Category A2 by ACGIH.



MATERIAL SAFETY DATA SHEET

Product : HFA-707
Issue date : 2010.03.03
Rev. date : . .

- Antioxidant :
mouse, male/female, No tumourigenic potential noted.
- Wax :
rat, oral feed, daily/2yr, Tissues from only a limited number of organs were examined microscopically. Number on animals per sex per group was 20. No convincing evidence of carcinogenicity.
- Germ cell mutagenicity :
 - ABS Resin : Not available
 - Tetra Bromo Bisphenol A :
in vitro, Ames test, negative
 - Chlorinated Polyethylene : Not available
 - Antimony Trioxide :
Based on the absence of data on multi-generation mutagenicity tests, negative data on germ cell multi-generation mutagenicity tests in vivo (chromosome aberration tests), somatic cell mutagenicity tests in vivo (chromosome aberration tests) show negative (the results of a single administration show negative, while those of 21-day administration show an increase in the incidence of bone marrow chromosome aberrations). The judgment conforms to that of experts (i.e., classification based on the information obtained from the search of literatures).
 - Antioxidant :
in Vitro, Ames test(S.typhimurium TA), Negative
in Vivo, Dominant lethal assay, male, No dominant lethal effects noted:
Negative;
Somatic mutation assay, Chinese hamster, male/female, No chromosomal aberrations noted. Not mutagen.: Negative
 - Wax :
in vitro, Ames test, negative
- Reproductive toxicity :
 - ABS Resin :
IARC(2009) Group 3
(Not classifiable as to its carcinogenicity to humans)
 - Tetra Bromo Bisphenol A : Not available
 - Chlorinated Polyethylene : Not available
 - Antimony Trioxide :



Based on the description in the report on rat teratogenicity and reproductive toxicity tests (IARC 47 (1989)): Infertility and an increase in absorbed embryos (during pre- and post implantation stages) are observed at dosing levels not toxic to dams. The judgment conforms to that of experts: Although the substance could be classified into Category 2 based solely on the results of animal studies, Category 1B should be appropriate because epidemiological data are not considered "reliable enough to provide evidence for the classification into Category 1A."

· Antioxidant :

One generation study, rat, female, body weight: no effects up to and comprising 500 mg/kg/d.

Fetal weight: decreased at 500 and 1000 mg/kg/d (GLP);

Two generation study, rat, male/female, NOAEL Parental: = 1500 ppm, NOAEL F1 Offspr.: < 500 ppm, NOAEL F2 Offspr.: < 500 ppm (GLP)

· Wax : Not available

○ Specific target organ toxicity(single exposure) :

· ABS Resin : Not available

· Tetra Bromo Bisphenol A : Not available

· Chlorinated Polyethylene : Not available

· Antimony Trioxide :

Category 1 (heart)

Category 2 (respiratory organs), Based on the human evidence including "a total of fifty-six inpatients developed burning pain in the stomach, colicky pain and nausea", "heart muscle necrosis was observed in autopsy specimens", and the evidence from animal studies including "mild and local discoloration of the lungs, white protuberant lesions". The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 2.

· Antioxidant : Not available

· Wax : Not available

○ Specific target organ toxicity(repeated exposure) :

· ABS Resin : Not available

· Tetra Bromo Bisphenol A :

rat(male,female), oral feed, 28d, Charles River CD rats were fed dietary dose levels of 0, 1, 10, 100, or 1000 ppm TBBPA in the diet for 28 days



after which 5 rats/sex/group were sacrificed and the remaining rats were placed on withdrawal with normal diets for periods of 2, 6, or 12 weeks. No changes were observed in general appearance, behavior, body weight, and food consumption. No compound related mortality, gross lesions, or microscopic lesions were observed. Bromine levels were determined on fat and liver tissue of rats in the control and 1000 ppm groups sacrificed at the end of the 28 day feeding period. No difference in bromine tissue levels was found.

- Chlorinated Polyethylene : Not available

- Antimony Trioxide :

Category 1 (respiratory organs), Based on the human evidence including "pneumonia (diagnosed by X-ray examination)," "antimony pneumoconiosis associated with symptoms of pneumoconiosis," "a correlation reported between abnormal x-ray shadows in the chest, antimony deposition in the lungs and exposure time," "infiltrating patchy shadows with a diameter of less than 1mm and their concentration in the middle lobe", and the evidence from animal studies including "discoloration of the lungs (autopsy findings), phagocytes containing particles, degenerated phagocytes, cellular debris in the wall of the alveoli, interstitial fibrosis, enlargement/hyperplasia of alveolar epithelial cells, granulomatous inflammation, granuloma", "body weight reduction, pulmonary interstitial fibrosis, enlargement/hyperplasia of alveolar epithelial cells, cubic/columnar epithelium metaplasia". The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1.

- Antioxidant : Not available

- Wax :

rat, oral, N,N' ethylenebis(stearamide). Combined 15 weeks – 2 year feeding study. Adverse effect on growth at all dose levels.

- Aspiration hazard :

- ABS Resin : Not available

- Tetra Bromo Bisphenol A : Not available

- Chlorinated Polyethylene : Not available

- Antimony Trioxide : Not available

- Antioxidant : Not available



- Wax : Viscosity (160°C) : 10 mm²/s approx
- Chronic effect : Not available

C. Calculation the classification of the mixture(acute toxicity estimate calculation etc.) :

The acute toxicity estimate(ATE) of the mixture is calculates from the acute toxicity values for all relevant ingredients in product according to the following formula.

$$[100-(\Sigma\text{Cunknown if } >10\%)]/ATE_{\text{mix}}=\Sigma C_i/ATE_i,$$

$$100(\Sigma\text{Cunknown if } <10\%)/ATE_{\text{mix}} = \Sigma C_i/ATE_i$$

- Acute toxicity estimate value(Oral) :
ATE_{mix} > 5284 mg/kg, Out of Category.
(The total concentration of the ingredients with unknown is > 10%)
- Acute toxicity estimate value(Dermal) :
ATE_{mix} > 2000 mg/kg, Out of Category.
(The total concentration of the ingredients with unknown is > 10%)
- Acute toxicity estimate value(Inhalation) :
ATE_{mix} > 1.8 mg/l, Category 4
(The total concentration of the ingredients with unknown is > 10%)

12. ECOLOGICAL INFORMATION

A. Ecotoxicity :

- Acute aquatic toxicity
 - Fish :
 - ABS Resin : Not available
 - Tetra Bromo Bisphenol A : LC50 0.54 mg/L/96hr, Pimephales promelas
 - Chlorinated Polyethylene : Not available
 - Antimony Trioxide : Not available
 - Antioxidant : LC50 > 100mg/L/96hr, Lepomis macrochirus
 - Wax : Not available
 - Invertebrate :
 - ABS Resin : Not available



- Tetra Bromo Bisphenol A : EC50 0.96 mg/L/48hr, Daphnia magna
- Chlorinated Polyethylene : Not available
- Antimony Trioxide : Not available
- Antioxidant : Not available
- Wax : Not available
- Algae :
 - ABS Resin : Not available
 - Tetra Bromo Bisphenol A :
 - EC50 > 5.6 mg/L/96hr, Selenastrum capricornutum
 - Chlorinated Polyethylene : Not available
 - Antimony Trioxide : Not available
 - Antioxidant : EC50 > 30mg/L/72hr, Scenedesmus subspicatus
 - Wax : Not available

B. Persistence and degradability

- Persistence :
 - ABS Resin : Not available
 - Tetra Bromo Bisphenol A : log Kow = 7.20 (calculated)
 - Chlorinated Polyethylene : Not available
 - Antimony Trioxide : log Kow = 6.23 (calculated)
 - Antioxidant : log Kow = 13.41 (calculated)
 - Wax : log Kow = 13.98 (calculated)
- Degradability : Not available

C. Bioaccumulative potential

- Bioaccumulation :
 - ABS Resin : Not available
 - Tetra Bromo Bisphenol A : BCF = 1200
 - Chlorinated Polyethylene : Normally, bioaccumulation value is high in water.
 - Antimony Trioxide : BCF = 5983 (calculated)
 - Antioxidant : BCF = 0.8954 (calculated)
 - Wax : BCF = 5.048 (calculated)
- Biodegradability : Not available



D. Mobility in soil :

- ABS Resin : Not available
- Tetra Bromo Bisphenol A : log Koc = 5.2413 (calculated)
- Chlorinated Polyethylene : Not available
- Antimony Trioxide : log Koc = 5.4066 (calculated)
- Antioxidant : log Koc = 8.444 (calculated)
- Wax : log Koc = 8.6067 (calculated)

E. Other adverse effects : Not available

13. DISPOSAL CONSIDERATION

A. Disposal methods

- The user of this product must properly characterize the waste/container generated from the use of this product in accordance with all applicable federal, state and/or local laws and regulations in order to determine the proper disposal of the waste in accordance with all applicable federal, state and/or local laws and regulations.

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 local regulation.

14. TRANSPORT INFORMATION

A. UN number : Not regulated for transport of dangerous goods

B. Proper shipping name : Not applicable

C. Hazard class : Not applicable

D. Packing group : Not applicable



E. Marine pollutant : Not applicable

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

- 1) EmS FIRE SCHEDULE : F-A
- 2) EmS SPILLAGE SCHEDULE : S-H

15. REGULATORY INFORMATION

A. Korea Industry Safety and Health Law (ISHL) :

- This product is subject to the chemical for classification and labeling under ISHL Article 41.
- Korea. OELs (ISHL Article 42; MOL Public Notice No. 2008-26)
 - Antimony Trioxide; 1309-64-4
- Regulated hazardous substances (Industrial Health Standards Article 166, Table 7.)
 - [Antimony Trioxide; 1309-64-4] and its compounds : Contents > 1%

B. The Toxic Chemical Control Act in Korea(TCCA)

- This product is not classified as Toxic chemical and Observational chemical under TCCA Article 2.3. and 2.4.
- Toxic Release Inventory(TRI) Chemicals :
 - [Antimony Trioxide; 1309-64-4] and its compounds : Contents > 0.1%,
Handling amounts : 10ton/annual

C. Dangerous goods Safety Management Law in Korea : Not applicable

D. US regulations

- OSHA regulation (29CFR1910.119) : Not available
- CERCLA section 103 (40CFR302.4) : Not available
- EPCRA section 302(40CFR355.30) : Not available
- EPCRA section 304(40CFR355.40) : Not available
- EPCRA section 313(40CFR372.65) : Not available

E. Other local or international regulation

- POPs Management Law : Not applicable
- Rotterdam Convention on Harmful Chemicals & Pesticides : Not applicable



MATERIAL SAFETY DATA SHEET

Product : HFA-707
Issue date : 2010.03.03
Rev. date : . .

- Stockholm Convention on Persistent Organic Pollutants : Not applicable
- Montreal Protocol on Substances That Deplete the Ozone Layer : Not applicable
- Information of EU Classification :
 - Tetra Bromo Bisphenol A
 - Classification : N; R50-53
 - Risk Phrases : R50-53
 - Safety Phrases : S60, S61
 - Antimony Trioxide
 - Classification : Carc. Cat. 3; R40
 - Risk Phrases : R40
 - Safety Phrases : S2 , S22, S36/37

16. OTHER INFORMATION

A. Reference

- This MSDS is prepared in accordance with ISHL Article 41 and MOL Notification No. 09-68 in Korea and consider the internal regulations by Korea Kumho Petrochemical Co., Ltd.

B. Issue date : 2010. 03. 03

C. Revision number and Last revised : Not applicable

D. Other information : Not available