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SAFETY DATA SHEET

1. Identification

Product identifier	**Royston A51 Mastic**	
Other means of identification		
Synonyms	Royston A51 Plus, Roskote A51 Plus	
Recommended use	Not available.	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier/Distributor information		
Manufacturer		
Company name	CHASE CORPORATION Blawnox Plant	
Address	128 1st Street Blawnox, PA 15238-3223 United States	
Telephone	866-932-0800	
E-mail	Not available.	
Emergency phone number	800-424-9300	Chemtrec, US
	703-527-3887	Chemtrec, outside of US

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Skin corrosion/irritation	Category 2
	Germ cell mutagenicity	Category 1B
	Carcinogenicity	Category 1A
	Reproductive toxicity	Category 1B
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1
OSHA defined hazards	Not classified.	

Label elements

Signal word	Danger
Hazard statement	Highly flammable liquid and vapor. May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness or dizziness. May cause genetic defects. May cause cancer. May damage fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed or concerned: Get medical advice/attention. Call a poison center/doctor if you feel unwell. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish. Collect spillage.
Storage	Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.
Supplemental information	52% of the mixture consists of component(s) of unknown acute oral toxicity. 52% of the mixture consists of component(s) of unknown acute dermal toxicity. % of the mixture consists of component(s) of unknown acute inhalation toxicity. 5% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 5% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Pitch, Coal Tar, High-temp.		65996-93-2	40 - < 50
TOLUENE		108-88-3	30 - < 40
METHYL ETHYL KETONE		78-93-3	3 - < 5
Coal Tar Pitch		8007-45-2	1 - < 3
Other components below reportable levels			10 - < 20

Constituents

Chemical name	Common name and synonyms	CAS number	%
Fluoranthene		206-44-0	2 - 2.75
Phenanthrene		85-01-8	1.8 - 2.5
Pyrene		129-00-0	1.5 - 2
1,2-benzanthracene		56-55-3	0.7 - 1
1,2-benzphenanthrene		218-01-9	0.7 - 1
Benzo(a) Pyrene		50-32-8	0.7 - 1
Benzo[ghi]perylene		191-24-2	0.5 - 1
Benzo (b) Fluoranthene		205-99-2	0.5 - 0.7
Indeno[1,2,3-cd]pyrene		193-39-5	0.5 - 0.7
Dibenzo(a,h)pyrene		189-64-0	0.4 - 0.6
Benzo[j]fluoranthene		205-82-3	0.4 - 0.5
Benzo[k]fluoranthene		207-08-9	0.4 - 0.5
Carbazole		86-74-8	0.3 - 0.4
Acenaphthene		83-32-9	0.2 - 0.3
Dibenzo(a,e)pyrene		192-65-4	0.15 - 0.25
Dibenz[a,h]anthracene		53-70-3	0.15 - 0.15
Dibenzo[a,i]pyrene		189-55-9	0.15 - 0.15
Naphthalene		91-20-3	0.02 - 0.15

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Occupational Exposure Limits for constituents are listed in Section 8. All the Constituents listed are part of the Coal Tar Pitch (25036-25-3).

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Direct contact with eyes may cause temporary irritation. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Carbon dioxide (CO2). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

For additional information on equipment bonding and grounding, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code".

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
METHYL ETHYL KETONE (CAS 78-93-3)	PEL	590 mg/m3
		200 ppm
Pitch, Coal Tar, High-temp. (CAS 65996-93-2)	PEL	0.2 mg/m3

Constituents	Type	Value
Naphthalene (CAS 91-20-3)	PEL	50 mg/m3
		10 ppm

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
TOLUENE (CAS 108-88-3)	Ceiling	300 ppm
	TWA	200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
METHYL ETHYL KETONE (CAS 78-93-3)	STEL	300 ppm	
	TWA	200 ppm	
Pitch, Coal Tar, High-temp. (CAS 65996-93-2)	TWA	0.2 mg/m3	Aerosol.
TOLUENE (CAS 108-88-3)	TWA	20 ppm	

Constituents	Type	Value
Naphthalene (CAS 91-20-3)	TWA	10 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
METHYL ETHYL KETONE (CAS 78-93-3)	STEL	885 mg/m3	
		300 ppm	
	TWA	590 mg/m3	
		200 ppm	
Pitch, Coal Tar, High-temp. (CAS 65996-93-2)	TWA	0.1 mg/m3	Cyclohexane-extractable fraction.
TOLUENE (CAS 108-88-3)	STEL	560 mg/m3	
		150 ppm	
	TWA	375 mg/m3	
		100 ppm	

Constituents	Type	Value
Naphthalene (CAS 91-20-3)	STEL	75 mg/m3
		15 ppm
	TWA	50 mg/m3
		10 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
METHYL ETHYL KETONE (CAS 78-93-3)	2 mg/l	MEK	Urine	*
TOLUENE (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*

Constituents	Value	Determinant	Specimen	Sampling Time
1,2-benzanthracene (CAS 56-55-3)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*
1,2-benzphenanthrene (CAS 218-01-9)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*

ACGIH Biological Exposure Indices

Constituents	Value	Determinant	Specimen	Sampling Time
Benzo(a) Pyrene (CAS 50-32-8)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*
Benzo[ghi]perylene (CAS 191-24-2)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*
Pyrene (CAS 129-00-0)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*
Phenanthrene (CAS 85-01-8)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*
Fluoranthene (CAS 206-44-0)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*
Dibenz[a,h]anthracene (CAS 53-70-3)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*
Dibenzo[a,i]pyrene (CAS 189-55-9)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*
Dibenzo(a,e)pyrene (CAS 192-65-4)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*
Acenaphthene (CAS 83-32-9)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*
Benzo[j]fluoranthene (CAS 205-82-3)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*
Benzo[k]fluoranthene (CAS 207-08-9)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*
Dibenzo(a,h)pyrene (CAS 189-64-0)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*
Benzo (b) Fluoranthene (CAS 205-99-2)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*
Indeno[1,2,3-cd]pyrene (CAS 193-39-5)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Naphthalene (CAS 91-20-3)	Can be absorbed through the skin.
TOLUENE (CAS 108-88-3)	Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

TOLUENE (CAS 108-88-3)	Skin designation applies.

US ACGIH Threshold Limit Values: Skin designation

Naphthalene (CAS 91-20-3)	Can be absorbed through the skin.

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Observe any medical surveillance requirements. When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Viscous Liquid.

Color Black.

Odor Aromatic Solvent.

Odor threshold Not available.

pH Not available.

Melting point/freezing point -138.82 °F (-94.9 °C) estimated

Initial boiling point and boiling range 231.08 °F (110.6 °C) estimated

Flash point 40.0 °F (4.4 °C) estimated

Evaporation rate 3.2 BuAc

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) 1.3 % estimated

Flammability limit - upper (%) 7 % estimated

Explosive limit - lower (%) 1.8 %

Explosive limit - upper (%) 11.5 %

Vapor pressure 15.97 hPa estimated

Vapor density Not available.

Relative density Not available.

Solubility(ies)

Solubility (water) Not available.

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature	896 °F (480 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	9.20 g/cm3 estimated
Explosive properties	Not explosive.
Flammability class	Flammable IB estimated
Oxidizing properties	Not oxidizing.
Percent volatile	45 - 55 %
Specific gravity	1.1 estimated
VOC	< 420 g/l

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
Symptoms related to the physical, chemical and toxicological characteristics	Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways.

Components	Species	Test Results
METHYL ETHYL KETONE (CAS 78-93-3)		
Acute		
Dermal		
LD50	Rabbit	> 8000 mg/kg
Oral		
LD50	Rat	2300 - 3500 mg/kg
TOLUENE (CAS 108-88-3)		
Acute		
Dermal		
LD50	Rabbit	12120 mg/kg
Oral		
LD50	Rat	2.6 g/kg

Constituents	Species	Test Results
Naphthalene (CAS 91-20-3)		
Acute		
Dermal		
LD50	Rabbit	> 2 g/kg
Carbazole (CAS 86-74-8)		
Acute		
Oral		
LD50	Rat	> 5000 mg/kg
Benzo(a) Pyrene (CAS 50-32-8)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg
Oral		
LD50	Rat	725 mg/kg
Phenanthrene (CAS 85-01-8)		
Acute		
Oral		
LD50	Mouse	700 mg/kg
Fluoranthene (CAS 206-44-0)		
Acute		
Dermal		
LD50	Rabbit	3180 mg/kg

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity May cause genetic defects.

Carcinogenicity May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

1,2-benzanthracene (CAS 56-55-3)	2B Possibly carcinogenic to humans.
1,2-benzphenanthrene (CAS 218-01-9)	2B Possibly carcinogenic to humans.
Acenaphthene (CAS 83-32-9)	3 Not classifiable as to carcinogenicity to humans.
Benzo (b) Fluoranthene (CAS 205-99-2)	2B Possibly carcinogenic to humans.
Benzo(a) Pyrene (CAS 50-32-8)	1 Carcinogenic to humans.
Benzo[ghi]perylene (CAS 191-24-2)	3 Not classifiable as to carcinogenicity to humans.
Benzo[j]fluoranthene (CAS 205-82-3)	2B Possibly carcinogenic to humans.
Benzo[k]fluoranthene (CAS 207-08-9)	2B Possibly carcinogenic to humans.
Carbazole (CAS 86-74-8)	2B Possibly carcinogenic to humans.
Coal Tar Pitch (CAS 8007-45-2)	1 Carcinogenic to humans.
Dibenz[a,h]anthracene (CAS 53-70-3)	2A Probably carcinogenic to humans.
Dibenzo(a,e)pyrene (CAS 192-65-4)	3 Not classifiable as to carcinogenicity to humans.
Dibenzo(a,h)pyrene (CAS 189-64-0)	2B Possibly carcinogenic to humans.
Dibenzo[a,i]pyrene (CAS 189-55-9)	2B Possibly carcinogenic to humans.
Fluoranthene (CAS 206-44-0)	3 Not classifiable as to carcinogenicity to humans.
Indeno[1,2,3-cd]pyrene (CAS 193-39-5)	2B Possibly carcinogenic to humans.
Naphthalene (CAS 91-20-3)	2B Possibly carcinogenic to humans.
Phenanthrene (CAS 85-01-8)	3 Not classifiable as to carcinogenicity to humans.
Pitch, Coal Tar, High-temp. (CAS 65996-93-2)	1 Carcinogenic to humans.
Pyrene (CAS 129-00-0)	3 Not classifiable as to carcinogenicity to humans.
TOLUENE (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

1,2-benzanthracene (CAS 56-55-3)	Reasonably Anticipated to be a Human Carcinogen.
Benzo (b) Fluoranthene (CAS 205-99-2)	Reasonably Anticipated to be a Human Carcinogen.
Benzo(a) Pyrene (CAS 50-32-8)	Reasonably Anticipated to be a Human Carcinogen.
Benzo[j]fluoranthene (CAS 205-82-3)	Reasonably Anticipated to be a Human Carcinogen.
Benzo[k]fluoranthene (CAS 207-08-9)	Reasonably Anticipated to be a Human Carcinogen.
Dibenz[a,h]anthracene (CAS 53-70-3)	Reasonably Anticipated to be a Human Carcinogen.
Dibenzo(a,e)pyrene (CAS 192-65-4)	Reasonably Anticipated to be a Human Carcinogen.
Dibenzo(a,h)pyrene (CAS 189-64-0)	Reasonably Anticipated to be a Human Carcinogen.
Dibenzo[a,i]pyrene (CAS 189-55-9)	Reasonably Anticipated to be a Human Carcinogen.
Indeno[1,2,3-cd]pyrene (CAS 193-39-5)	Reasonably Anticipated to be a Human Carcinogen.
Naphthalene (CAS 91-20-3)	Reasonably Anticipated to be a Human Carcinogen.
Pitch, Coal Tar, High-temp. (CAS 65996-93-2)	Known To Be Human Carcinogen.

Reproductive toxicity May damage fertility or the unborn child.

Specific target organ toxicity - single exposure May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Product		Species	Test Results
Royston A51 Mastic			
Aquatic			
Crustacea	EC50	Daphnia	29.2008 mg/l, 48 hours estimated
Fish	LC50	Fish	251.5143 mg/l, 96 hours estimated
Components		**Species**	**Test Results**
METHYL ETHYL KETONE (CAS 78-93-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	4025 - 6440 mg/l, 48 hours
Fish	LC50	Sheepshead minnow (Cyprinodon variegatus)	> 400 mg/l, 96 hours
TOLUENE (CAS 108-88-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	5.46 - 9.83 mg/l, 48 hours
Fish	LC50	Coho salmon,silver salmon (Oncorhynchus kisutch)	8.11 mg/l, 96 hours
Constituents		**Species**	**Test Results**
Naphthalene (CAS 91-20-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1.09 - 3.4 mg/l, 48 hours
Fish	LC50	Pink salmon (Oncorhynchus gorbuscha)	1.11 - 1.68 mg/l, 96 hours
Acenaphthene (CAS 83-32-9)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1.102 - 1.475 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	0.52 - 0.71 mg/l, 96 hours
Carbazole (CAS 86-74-8)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	2.3 - 4.88 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	0.93 mg/l, 96 hours

Constituents		Species	Test Results
Pyrene (CAS 129-00-0)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	> 2 mg/l, 96 hours
Phenanthrene (CAS 85-01-8)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	0.185 - 0.243 mg/l, 48 hours
Fish	LC50	Sheepshead minnow (Cyprinodon variegatus)	0.438 - 0.523 mg/l, 96 hours
Fluoranthene (CAS 206-44-0)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	0.0054 - 0.0085 mg/l, 96 hours

Persistence and degradability No data is available on the degradability of any ingredients in the mixture.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

METHYL ETHYL KETONE	0.29
TOLUENE	2.73

Mobility in soil No data available.

Other adverse effects The product contains volatile organic compounds which have a photochemical ozone creation potential.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. If discarded, this product is considered a RCRA ignitable waste, D001. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code D001: Waste Flammable material with a flash point <140 F
D035: Waste Methyl ethyl ketone
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

US RCRA Hazardous Waste U List: Reference

1,2-benzanthracene (CAS 56-55-3)	U018
1,2-benzphenanthrene (CAS 218-01-9)	U050
Benzo(a) Pyrene (CAS 50-32-8)	U022
Dibenz[a,h]anthracene (CAS 53-70-3)	U063
Dibenzo[a,i]pyrene (CAS 189-55-9)	U064
Fluoranthene (CAS 206-44-0)	U120
Indeno[1,2,3-cd]pyrene (CAS 193-39-5)	U137
Naphthalene (CAS 91-20-3)	U165

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number UN1139

UN proper shipping name Coating Solution (include surface treatemnts or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining) (TOLUENE RQ = 2857 LBS, METHYL ETHYL KETONE RQ = 166667 LBS), MARINE POLLUTANT

Transport hazard class(es)

Class 3

Subsidiary risk -

Label(s)	3
Packing group	II
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB2, T7, TP1, TP8, TP28
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1139
UN proper shipping name	Coating Solution (include surface treatemnts or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining) (TOLUENE, METHYL ETHYL KETONE)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	Yes
ERG Code	3H
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

IMDG

UN number	UN1139
UN proper shipping name	Coating Solution (include surface treatemnts or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining) (TOLUENE, METHYL ETHYL KETONE), MARINE POLLUTANT
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	Yes
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.

DOT

IATA; IMDG

Marine pollutant

General information IMDG Regulated Marine Pollutant. DOT Regulated Marine Pollutant.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Coal Tar Pitch (CAS 8007-45-2)	0.1 % One-Time Export Notification only.

CERCLA Hazardous Substance List (40 CFR 302.4)

1,2-benzanthracene (CAS 56-55-3)	Listed.
1,2-benzphenanthrene (CAS 218-01-9)	Listed.
Acenaphthene (CAS 83-32-9)	Listed.
Benzo (b) Fluoranthene (CAS 205-99-2)	Listed.
Benzo(a) Pyrene (CAS 50-32-8)	Listed.
Benzo[ghi]perylene (CAS 191-24-2)	Listed.
Benzo[k]fluoranthene (CAS 207-08-9)	Listed.
Dibenz[a,h]anthracene (CAS 53-70-3)	Listed.
Dibenzo[a,i]pyrene (CAS 189-55-9)	Listed.
Fluoranthene (CAS 206-44-0)	Listed.
Indeno[1,2,3-cd]pyrene (CAS 193-39-5)	Listed.
METHYL ETHYL KETONE (CAS 78-93-3)	Listed.
Naphthalene (CAS 91-20-3)	Listed.
Phenanthrene (CAS 85-01-8)	Listed.
Pyrene (CAS 129-00-0)	Listed.
TOLUENE (CAS 108-88-3)	Listed.

SARA 304 Emergency release notification

Pyrene (CAS 129-00-0)	5000 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Pyrene	129-00-0	5000		1000	10000

SARA 311/312 Hazardous chemical Yes

Classified hazard categories	Flammable (gases, aerosols, liquids, or solids) Acute toxicity (any route of exposure) Skin corrosion or irritation Germ cell mutagenicity Carcinogenicity Reproductive toxicity Specific target organ toxicity (single or repeated exposure) Aspiration hazard Hazard not otherwise classified (HNOC)

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
TOLUENE	108-88-3	30 - < 40
1,2-benzanthracene	56-55-3	0.7 - 1
1,2-benzphenanthrene	218-01-9	0.7 - 1
Benzo (b) Fluoranthene	205-99-2	0.5 - 0.7
Benzo(a) Pyrene	50-32-8	0.7 - 1
Benzo[ghi]perylene	191-24-2	0.5 - 1
Benzo[j]fluoranthene	205-82-3	0.4 - 0.5
Benzo[k]fluoranthene	207-08-9	0.4 - 0.5
Dibenz[a,h]anthracene	53-70-3	0.15 - 0.15
Dibenzo(a,e)pyrene	192-65-4	0.15 - 0.25
Dibenzo(a,h)pyrene	189-64-0	0.4 - 0.6
Dibenzo[a,i]pyrene	189-55-9	0.15 - 0.15
Fluoranthene	206-44-0	2 - 2.75
Indeno[1,2,3-cd]pyrene	193-39-5	0.5 - 0.7
Naphthalene	91-20-3	0.02 - 0.15
Phenanthrene	85-01-8	1.8 - 2.5

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

1,2-benzanthracene (CAS 56-55-3)
1,2-benzphenanthrene (CAS 218-01-9)
Acenaphthene (CAS 83-32-9)
Benzo (b) Fluoranthene (CAS 205-99-2)
Benzo(a) Pyrene (CAS 50-32-8)
Benzo[ghi]perylene (CAS 191-24-2)
Benzo[j]fluoranthene (CAS 205-82-3)
Benzo[k]fluoranthene (CAS 207-08-9)
Dibenz[a,h]anthracene (CAS 53-70-3)
Dibenzo(a,e)pyrene (CAS 192-65-4)
Dibenzo(a,h)pyrene (CAS 189-64-0)
Dibenzo[a,i]pyrene (CAS 189-55-9)
Fluoranthene (CAS 206-44-0)
Indeno[1,2,3-cd]pyrene (CAS 193-39-5)
Naphthalene (CAS 91-20-3)
Phenanthrene (CAS 85-01-8)
Pyrene (CAS 129-00-0)
TOLUENE (CAS 108-88-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

METHYL ETHYL KETONE (CAS 78-93-3)	6714
TOLUENE (CAS 108-88-3)	6594

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

METHYL ETHYL KETONE (CAS 78-93-3)	35 %WV
TOLUENE (CAS 108-88-3)	35 %WV

DEA Exempt Chemical Mixtures Code Number

METHYL ETHYL KETONE (CAS 78-93-3)	6714
TOLUENE (CAS 108-88-3)	594

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

METHYL ETHYL KETONE (CAS 78-93-3) Low priority

US state regulations

California Proposition 65

WARNING: This product can expose you to chemicals including Indeno[1,2,3-cd]pyrene, which is known to the State of California to cause cancer, and TOLUENE, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

1,2-benzanthracene (CAS 56-55-3)	Listed: July 1, 1987
1,2-benzphenanthrene (CAS 218-01-9)	Listed: January 1, 1990
Benzo (b) Fluoranthene (CAS 205-99-2)	Listed: July 1, 1987
Benzo(a) Pyrene (CAS 50-32-8)	Listed: July 1, 1987
Benzo[j]fluoranthene (CAS 205-82-3)	Listed: July 1, 1987
Benzo[k]fluoranthene (CAS 207-08-9)	Listed: July 1, 1987
Carbazole (CAS 86-74-8)	Listed: May 1, 1996
Dibenz[a,h]anthracene (CAS 53-70-3)	Listed: January 1, 1988
Dibenzo(a,e)pyrene (CAS 192-65-4)	Listed: January 1, 1988
Dibenzo(a,h)pyrene (CAS 189-64-0)	Listed: January 1, 1988
Dibenzo[a,i]pyrene (CAS 189-55-9)	Listed: January 1, 1988
Indeno[1,2,3-cd]pyrene (CAS 193-39-5)	Listed: January 1, 1988
Naphthalene (CAS 91-20-3)	Listed: April 19, 2002

California Proposition 65 - CRT: Listed date/Developmental toxin

TOLUENE (CAS 108-88-3) Listed: January 1, 1991

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

1,2-benzanthracene (CAS 56-55-3)
1,2-benzphenanthrene (CAS 218-01-9)
Acenaphthene (CAS 83-32-9)
Benzo (b) Fluoranthene (CAS 205-99-2)
Benzo(a) Pyrene (CAS 50-32-8)
Benzo[ghi]perylene (CAS 191-24-2)
Benzo[j]fluoranthene (CAS 205-82-3)
Benzo[k]fluoranthene (CAS 207-08-9)
Carbazole (CAS 86-74-8)
Coal Tar Pitch (CAS 8007-45-2)
Dibenz[a,h]anthracene (CAS 53-70-3)
Dibenzo(a,e)pyrene (CAS 192-65-4)
Dibenzo(a,h)pyrene (CAS 189-64-0)
Dibenzo[a,i]pyrene (CAS 189-55-9)
Fluoranthene (CAS 206-44-0)
Indeno[1,2,3-cd]pyrene (CAS 193-39-5)
METHYL ETHYL KETONE (CAS 78-93-3)
Naphthalene (CAS 91-20-3)
Phenanthrene (CAS 85-01-8)
Pitch, Coal Tar, High-temp. (CAS 65996-93-2)
Pyrene (CAS 129-00-0)
TOLUENE (CAS 108-88-3)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 05-28-2015

Revision date 01-25-2019

Version # 03

HMIS® ratings
Health: 3*
Flammability: 3
Physical hazard: 0

NFPA ratings
Health: 2
Flammability: 3
Instability: 0

Disclaimer The information offered in this data sheet is designed only as guidance for the safe use, storage and handling of the product. This information is correct to the best of our knowledge and belief at the date of publication, however, no guarantee is made to its accuracy. This 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 other process. This material is intended for industrial use only. No warranty, expressed or implied is made.

Revision information
Product and Company Identification: Chase - Product Identification
Transport Information: Material Transportation Information