



Safety Data Sheet

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Universal Retarder
Product Code : FS 5665-4
Recommended Use : Solvent

Manufacturer/Importer/Supplier/Distributor information

Company name INTERNATIONAL AUTOBODY MARKETING GROUP
Address 1505 NORTH HAYDEN RD, SUITE 111
SCOTTSDALE, AZ 85257
UNITED STATES

Website www.5starxtreme.com

Telephone 1-87-REFINISH
480.451.4451

Emergency phone number 800-424-9300 ChemTrec EMERGENCY 24 Hrs.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 2
Skin irritation : Category 2
Eye irritation : Category 2A
Germ cell mutagenicity : Category 1B
Carcinogenicity : Category 1B
Reproductive toxicity : Category 2
Specific target organ toxicity - repeated exposure (Inhalation) : Category 2 (Auditory system, Eyes)
Aspiration hazard : Category 1

GHS Label element

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Hazard pictograms



Signal word

: Danger

Hazard statements

: H225 Highly flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H340 May cause genetic defects.
H350 May cause cancer.
H361 Suspected of damaging fertility or the unborn child.
H373 May cause damage to organs (Auditory system, Eyes) through prolonged or repeated exposure if inhaled.

Precautionary statements

: **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, hot surfaces, sparks, open flames and other ignition sources. 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.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ eye protection/ face protection.
P281 Use personal protective equipment as required.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
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.
P331 Do NOT induce vomiting.

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P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Storage:
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

Carcinogenicity:

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Emergency Overview

Appearance	liquid
Colour	white
Odour	hydrocarbon-like
Hazard Summary	No information available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

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Hazardous components

CAS-No.	Chemical Name	Concentration (%)
108-65-6	Glycol ether PM acetate	20 - 30
106-65-0	Dimethyl succinate	10 - 20
627-93-0	Dimethyl adipate	10 - 20
108-88-3	Toluene	10 - 20
68410-97-9 / 64742-49-0 / 64742-89-8	Distillates, pet, It dist hydrotreat process, low-boil AND/OR Naphtha (pet), hy- drotreated It AND/OR Solvent naphtha (pet), It aliph.	1 - 5

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Symptoms of poisoning may appear several hours later.
Do not leave the victim unattended.
- If inhaled : If unconscious place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : If skin irritation persists, call a physician.
If on skin, rinse well with water.
If on clothes, remove clothes.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Alcohol-resistant foam
Carbon dioxide (CO2)

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	Dry chemical Water spray
Unsuitable extinguishing media	: High volume water jet
Specific hazards during firefighting	: Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	: No hazardous combustion products are known
Specific extinguishing methods	: Use a water spray to cool fully closed containers.
Further information	: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments.
Special protective equipment for firefighters	: Wear self-contained breathing apparatus for fire-fighting if necessary. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Environmental precautions	: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

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SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid formation of aerosol.
Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Take precautionary measures against static discharges.
Provide sufficient air exchange and/or exhaust in work rooms.
Open drum carefully as content may be under pressure.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : No smoking.
Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully re-sealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

CAS-No.	Components	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
108-65-6	Glycol ether PM acetate	TWA	50 ppm	US WEEL
108-88-3	Toluene	TWA	20 ppm	ACGIH
		TWA	100 ppm 375 mg/m ³	NIOSH REL
		ST	150 ppm 560 mg/m ³	NIOSH REL
		TWA	200 ppm	OSHA Z-2
		CEIL	300 ppm	OSHA Z-2
		Peak	500 ppm	OSHA Z-2
		TWA	100 ppm 375 mg/m ³	OSHA P0

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		STEL	150 ppm 560 mg/m ³	OSHA P0
68410-97-9 / 64742-49-0 / 64742-89-8	Distillates, pet, It dist hydrotreat process, low-boil AND/OR Naphtha (pet), hydrotreated It AND/OR Solvent naphtha (pet), It aliph.	TWA	500 ppm 2,000 mg/m ³	OSHA Z-1
		TWA	400 ppm 1,600 mg/m ³	OSHA P0

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Toluene	108-88-3	Toluene	In blood	Prior to last shift of work-week	0.02 mg/l	ACGIH BEI
		Toluene	Urine	End of shift (As soon as possible after exposure ceases)	0.03 mg/l	ACGIH BEI
		o-Cresol	Urine	End of shift (As soon as possible after exposure ceases)	0.3 mg/g Creatinine	ACGIH BEI

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.
In the case of vapour formation use a respirator with an approved filter.

Hand protection
Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water

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Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : white

Odour : hydrocarbon-like

Odour Threshold : No data available

pH : No data available

Freezing Point : No data available

Boiling Point : No data available

Flash point : 7 °C (45 °F)

Evaporation rate : 1
Ethyl Ether

Flammability (solid, gas) : No data available

Burning rate : No data available

Upper explosion limit : 8 %(V)
Calculated Explosive Limit

Lower explosion limit : 0.9 %(V)
Calculated Explosive Limit

Vapour pressure : 171 mmHg @ 37.78 °C (100.00 °F)
Calculated Vapor Pressure

Relative vapour density : > 1(Air = 1.0)

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Relative density	: 1.005 @ 20 °C (68 °F) Reference substance: (water = 1)
Density	: 1.005 g/cm ³ @ 20 °C (68 °F)
Bulk density	: No data available
Water solubility	: No data available
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Thermal decomposition	: No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No hazards to be specially mentioned.
Conditions to avoid	: Keep away from heat, flame, sparks and other ignition sources. Exposure to air. Exposure to moisture.
Incompatible materials	: Acids alkalis Oxygen Strong oxidizing agents
Hazardous decomposition products	: None known.

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SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

Components:

108-65-6:

Acute oral toxicity : LD50 (rat): 8,532 mg/kg

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : LD50 (rabbit): > 5,000 mg/kg
Method: OECD Test Guideline 402

106-65-0:

Acute oral toxicity : LD50 (rat, female): 6,892 mg/kg

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : LD50 (rabbit): > 2,000 mg/kg
Method: OECD Test Guideline 402
GLP: yes

627-93-0:

Acute oral toxicity : LD50 (rat, male and female): > 5,000 mg/kg
GLP: yes
Assessment: The component/mixture is low toxic after single ingestion.
Remarks: Practically non-toxic by Ingestion

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : LD50 (rabbit, male and female): > 1,000 mg/kg
Assessment: The component/mixture is low toxic after single contact with skin.

108-88-3:

Acute oral toxicity : LD50 (rat, male): > 5,580 mg/kg

Acute inhalation toxicity : LC50 (rat, male and female): 28.1 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (rabbit): > 5,000 mg/kg

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68410-97-9 / 64742-49-0 / 64742-89-8:

- Acute oral toxicity : LD50 (rat, male and female): > 5,000 mg/kg
Method: OECD Test Guideline 401
GLP: yes
Assessment: The substance or mixture has no acute oral toxicity
- Acute inhalation toxicity : Assessment: The substance or mixture has no acute inhalation toxicity
- Acute dermal toxicity : LD50 (rabbit, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
GLP: yes
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Product:

Result: Irritating to skin.

Components:

108-65-6:

Species: rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

106-65-0:

Species: rabbit
Method: OECD Test Guideline 404
Result: No skin irritation
GLP: yes

627-93-0:

Species: rabbit
Exposure time: 4 h
Method: In vivo
Result: No skin irritation
GLP: yes

108-88-3:

Species: rabbit
Exposure time: 4 h
Result: Irritating to skin.

68410-97-9 / 64742-49-0 / 64742-89-8:

Species: rabbit
Exposure time: 4 h

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Result: Irritating to skin.

Serious eye damage/eye irritation

Product:

Result: Irritating to eyes.

Components:

108-65-6:

Species: rabbit

Result: No eye irritation

Method: OECD Test Guideline 405

106-65-0:

Species: rabbit

Result: Mild eye irritation

Method: OECD Test Guideline 405

627-93-0:

Species: rabbit

Result: Irritating to eyes.

108-88-3:

Species: rabbit

Result: Irritating to eyes.

Method: OECD Test Guideline 405

68410-97-9 / 64742-49-0 / 64742-89-8:

Species: rabbit

Result: Irritating to eyes.

Respiratory or skin sensitisation

Components:

108-65-6:

Test Type: Maximization test

Species: guinea pig

Method: OECD Test Guideline 406

Result: Did not cause sensitisation on laboratory animals.

GLP: no

106-65-0:

Test Type: lymph node assay

Species: mouse

Result: Did not cause sensitisation on laboratory animals.

627-93-0:

Test Type: lymph node assay

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Exposure routes: Dermal
Species: mouse
Method: OECD Test Guideline 429
Result: Did not cause sensitisation on laboratory animals.

108-88-3:

Test Type: Maximisation Test (GPMT)
Species: guinea pig
Result: Did not cause sensitisation on laboratory animals.
GLP: yes

68410-97-9 / 64742-49-0 / 64742-89-8:

Test Type: Buehler Test
Species: guinea pig
Result: Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

Components:

108-65-6:

Genotoxicity in vitro : Test Type: DNA damage and/or repair
Test species: rat hepatocytes
Metabolic activation: Without metabolic activation
Method: OECD Test Guideline 482
Result: negative
GLP: yes

Germ cell mutagenicity-Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

106-65-0:

Genotoxicity in vitro : Test Type: Mammalian cell gene mutation assay
Test species: Mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: yes

Germ cell mutagenicity-Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

627-93-0:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
Test species: Chinese hamster ovary (CHO)
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: positive with metabolic activation
GLP: yes

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Remarks: Information given is based on data obtained from similar substances.

Genotoxicity in vivo	: Test Type: In vivo micronucleus test Test species: rat (male and female) Application Route: Inhalation Exposure time: 6 h/d, 2 d Dose: 0, 0.5, 1.0, 2.0 mg/l Method: OECD Test Guideline 474 Result: negative GLP: yes
Germ cell mutagenicity-Assessment	: Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
108-88-3: Genotoxicity in vitro	: Test Type: Mammalian cell gene mutation assay Test species: Mouse lymphoma cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative
Genotoxicity in vivo	: Test Type: Dominant lethal assay Test species: mouse (male) Application Route: inhalation (vapour) Exposure time: 6 h/d, 5 d/wk for 8 wks Dose: 0, 100, 400 ppm Method: OECD Test Guideline 478 Result: negative
Germ cell mutagenicity-Assessment	: Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
68410-97-9 / 64742-49-0 / 64742-89-8: Germ cell mutagenicity-Assessment	: Positive result(s) from mutagenicity tests in mammals. Evidence that the substance has potential to cause mutations to germ cells

Carcinogenicity

Components:

108-65-6:

Species: rat, (male and female)
Application Route: inhalation (vapour)
Exposure time: 2 yr
Dose: 0, 300, 1000, 3000 ppm
Frequency of Treatment: 6 hr/d, 5 d/wk
NOAEL: No observed adverse effect level: 3,000 ppm

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Method: OECD Test Guideline 453
Result: did not display carcinogenic properties
GLP: yes

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

106-65-0:

Remarks: This information is not available.

Carcinogenicity - Assessment : Carcinogenicity classification not possible from current data.

627-93-0:

Remarks: This information is not available.

Carcinogenicity - Assessment : Carcinogenicity classification not possible from current data.

108-88-3:

Species: rat, (male and female)
Application Route: inhalation (vapour)
Exposure time: 103 wks
Dose: 0, 600, 1200 ppm
Frequency of Treatment: 6.5 h/d, 5 d/wk
NOAEL: No observed adverse effect level: 1,200 ppm

Method: OECD Test Guideline 453
Result: did not display carcinogenic properties
Symptoms: Erosion of nasal epithelium
GLP: yes

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

68410-97-9 / 64742-49-0 / 64742-89-8:

Carcinogenicity - Assessment : Possible human carcinogen

Reproductive toxicity

Components:

108-65-6:

Effects on fertility : Species: rat
Application Route: Oral
Dose: 0, 100, 300, 1000 mg/kg
General Toxicity - Parent: NOAEL: 1,000 mg/kg bw
General Toxicity F1: NOAEL: 1,000 mg/kg bw
Method: OECD Test Guideline 422
Result: Animal testing did not show any effects on

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	fertility. GLP: yes Remarks: Information given is based on data obtained from similar substances.
Effects on foetal development	: Species: rat Application Route: Inhalation Dose: 0, 500, 2000, 4000 ppm Duration of Single Treatment: 9 d Frequency of Treatment: 6 hr/day General Toxicity Maternal: NOAEL: 500 ppm Teratogenicity: NOAEL: > 4,000 ppm GLP: yes
Reproductive toxicity - Assessment	: No evidence of adverse effects on sexual function and fertility, and on development, based on animal experiments.
106-65-0: Effects on fertility	: Test Type: One generation study Species: rat, male and female Application Route: Inhalation Dose: 0, 0.16, 0.4 and 1.0 mg/L Duration of Single Treatment: 6 h Frequency of Treatment: 5 days/week General Toxicity F1: NOAEC: 1 mg/L Result: No reproductive effects. GLP: yes Remarks: Information given is based on data obtained from similar substances.
Effects on foetal development	: Species: rat Application Route: Inhalation Dose: 0.16, 0.4 and 1.0 mg/L Duration of Single Treatment: 9 d Frequency of Treatment: 7 days/week Developmental Toxicity: NOAEC: 1 Method: OECD Test Guideline 414 Result: No teratogenic effects. GLP: yes Remarks: Information given is based on data obtained from similar substances.
Reproductive toxicity - Assessment	: No evidence of adverse effects on sexual function and fertility, and on development, based on animal experiments.
627-93-0: Effects on fertility	: Test Type: One generation study Species: rat, male and female Application Route: Inhalation

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Dose: 0, 0.16, 0.40, 1.0 mg/l
General Toxicity - Parent: NOAEC: < 0.16 mg/l
General Toxicity F1: NOAEC: 1.0 mg/l
Fertility: NOAEC: 1.0 mg/l
Result: No reproductive effects.
GLP: yes
Remarks: Information given is based on data obtained from similar substances.

Effects on foetal development

: Species: rabbit
Application Route: Inhalation
Dose: 0, 30, 100, 300, 1000 mg/m³
Duration of Single Treatment: 22 d
Frequency of Treatment: 6 hr/day
General Toxicity Maternal: NOAEC: 100 mg/m³
Teratogenicity: NOAEC: 1,000
Developmental Toxicity: NOAEC: 1,000 mg/m³
Result: No teratogenic effects.
Remarks: Information given is based on data obtained from similar substances.

Reproductive toxicity - Assessment

: No evidence of adverse effects on sexual function and fertility, and on development, based on animal experiments.

108-88-3:

Effects on fertility

: Test Type: Two-generation study
Species: rat, male and female
Application Route: Inhalation
Dose: 0, 100, 500, 2000 ppm
Frequency of Treatment: 7 days/week
General Toxicity - Parent: NOAEC: 500 ppm
General Toxicity F1: NOAEC: 500 ppm
Fertility: NOAEC: 2,000 ppm
Symptoms: Reduced maternal body weight gain. Reduced offspring weight gain.
Method: OECD Test Guideline 416
Result: Animal testing did not show any effects on fertility.
GLP: yes

Test Type: Fertility
Species: rat, male and female
Application Route: inhalation (vapour)
Dose: 0, 600, 1200 ppm
Frequency of Treatment: 7 days/week
General Toxicity - Parent: NOAEC: 600 ppm
Symptoms: Decreased sperm count
Result: Animal testing did not show any effects on fertility.

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Effects on foetal development : Species: rat
Application Route: inhalation (vapour)
Dose: 0, 250, 750, 1500, 3000 ppm
Duration of Single Treatment: 10 d
Frequency of Treatment: 6 hr/day
General Toxicity Maternal: NOAEC: 750 ppm
Developmental Toxicity: NOAEC: 750 ppm
Symptoms: Maternal toxicity, Reduced body weight, Skeletal malformations.
GLP: yes

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

68410-97-9 / 64742-49-0 / 64742-89-8:

Reproductive toxicity - Assessment : No toxicity to reproduction
No evidence of adverse effects on sexual function and fertility, and on development, based on animal experiments.

STOT - single exposure

Product: No data available

Components:

108-65-6: No data available

106-65-0: No data available

627-93-0: No data available

108-88-3:

Exposure routes:	Target Organs:	Assessment:	Remarks:
Inhalation	Central nervous system	May cause drowsiness or dizziness., The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.	

68410-97-9 / 64742-49-0 / 64742-89-8:

Exposure routes:	Target Organs:	Assessment:	Remarks:
Inhalation	Central nervous system	May cause drowsiness or dizziness.,	

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		The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.	
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STOT - repeated exposure

Product: No data available

Components:

108-65-6: No data available

106-65-0: No data available

627-93-0: No data available

108-88-3:

Exposure routes:	Target Organs:	Assessment:	Remarks:
Inhalation	Auditory system, Eyes	May cause damage to organs through prolonged or repeated exposure., The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.	

68410-97-9 / 64742-49-0 / 64742-89-8: No data available

Repeated dose toxicity

Components:

108-65-6:

Species: rat, male and female

NOAEL: > 1,000 mg/kg

Application Route: Oral

Dose: 0, 100, 300, 1000 mg/kg

Method: OECD Test Guideline 422

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106-65-0:

Species: rat, male and female

NOAEL: 20

LOAEL: 76

Application Route: inhalation (vapour)

Exposure time: 92-94 d

Number of exposures: 6 h/d, 5 d/wk

Dose: 0, 20, 76 and 390 mg/m³

Method: OECD Test Guideline 413

GLP: yes

Remarks: Information given is based on data obtained from similar substances.

627-93-0:

Species: rat, male and female

NOAEL: 1,000 mg/kg

Application Route: Dermal

Exposure time: 14 d

Number of exposures: 6 h/d, 7 d/wk

Dose: 0, 100, 300, 1000 mg/kg bw

Remarks: Information given is based on data obtained from similar substances.

108-88-3:

Species: rat, male and female

NOAEL: 300

Application Route: inhalation (vapour)

Exposure time: 6, 12, or 18 mths

Number of exposures: 6 h/d, 5 d/wk

Dose: 0, 30, 100, 300 ppm

Method: OECD Test Guideline 453

Repeated dose toxicity - : Causes skin irritation.
Assessment

68410-97-9 / 64742-49-0 / 64742-89-8:

Species: rat, male and female

NOAEL: 1402

Application Route: inhalation (vapour)

Test atmosphere: vapour

Exposure time: 13

Number of exposures: 6 hours/day, 5 day

Dose: 322,1402, 9869 mg/m³

GLP: yes

Target Organs: Kidney

Symptoms: Nasal and ocular discharge

Aspiration toxicity

Product:

May be fatal if swallowed and enters airways.

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Components:

106-65-0:

No aspiration toxicity classification

627-93-0:

No aspiration toxicity classification

108-88-3:

Aspiration Toxicity - Category 1

68410-97-9 / 64742-49-0 / 64742-89-8:

May be fatal if swallowed and enters airways.

Further information

Product:

Remarks: Solvents may degrease the skin.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

108-65-6:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 500 mg/l
Exposure time: 48 h
Test Type: Immobilization

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): > 1,000 mg/l
End point: Growth rate
Exposure time: 96 h
Test Type: static test

106-65-0:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 50 mg/l
Exposure time: 96 h
Test Type: semi-static test

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Analytical monitoring: yes
Method: OECD Test Guideline 203
GLP: yes
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): > 100 mg/l
Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae : EC50 (*Pseudokirchneriella subcapitata* (green algae)): > 100 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

Toxicity to bacteria : EC 50 (activated sludge): > 1,000 mg/l
Exposure time: 3 h
Test Type: Static
Method: OECD Test Guideline 209
GLP: yes

627-93-0:

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 72 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae : EC50 (*Pseudokirchneriella subcapitata* (*Selenastrum capricornutum*)): > 100 mg/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

Ecotoxicology Assessment
Acute aquatic toxicity : Harmful to aquatic life.

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

108-88-3:

Toxicity to fish : LC50 (*Oncorhynchus mykiss* (rainbow trout)): 5.5

Safety Data Sheet

Urethane Retarder

	mg/l Exposure time: 96 h Test Type: flow-through test
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Ceriodaphnia dubia): 3.78 mg/l Exposure time: 48 h Test Type: Renewal
Toxicity to algae	: EC50 (Chlorella vulgaris (Fresh water algae)): 134 mg/l Exposure time: 3 h Test Type: static test
Toxicity to bacteria	: IC50 (Bacteria): 84 mg/l Exposure time: 24 h Test Type: Static
Ecotoxicology Assessment	
Acute aquatic toxicity	: Toxic to aquatic life.
Chronic aquatic toxicity	: Toxic to aquatic life with long lasting effects.
68410-97-9 / 64742-49-0 / 64742-89-8:	
Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 8.2 mg/l Exposure time: 96 h Test Type: semi-static test
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 4.5 mg/l Exposure time: 48 h Test Type: Immobilization Analytical monitoring: yes
Toxicity to algae	: EC50 (Pseudokirchneriella subcapitata (green algae)): 3.7 Exposure time: 96 h Test Type: static test
Ecotoxicology Assessment	
Acute aquatic toxicity	: Toxic to aquatic life.
Chronic aquatic toxicity	: Toxic to aquatic life with long lasting effects.

Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Components:

Safety Data Sheet

Urethane Retarder

108-65-6:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 76.4 mg/l
Result: Readily biodegradable.
Biodegradation: 90 %
Exposure time: 28 d
GLP: yes

Biochemical Oxygen Demand (BOD) : 0.36 mg/l

Chemical Oxygen Demand (COD) : 1.74 mg/l

106-65-0:

Biodegradability : aerobic
Inoculum: Sewage
Concentration: 39 mg/l
Result: Readily biodegradable.
Biodegradation: 74.10 %
Testing period: 3 d
Exposure time: 28 d
Method: OECD Test Guideline 301B
GLP: yes

627-93-0:

Biodegradability : aerobic
Inoculum: Activated sludge, domestic, non-adapted
Concentration: 16 mg/l
Exposure time: 28 d
Method: OECD Test Guideline 302A
GLP: yes
Remarks: Inherently biodegradable.

108-88-3:

Biodegradability : Inoculum: Sewage
Biodegradation: 100 %
Remarks: Readily biodegradable

68410-97-9 / 64742-49-0 / 64742-89-8:

Biodegradability : Concentration: 49.2 mg/l
Result: Readily biodegradable.
Biodegradation: 77 %
Testing period: 2 d
Exposure time: 28 d

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Urethane Retarder

Bioaccumulative potential

Components:

108-65-6:

Partition coefficient: n-octanol/water : log Pow: 0.43

627-93-0:

Partition coefficient: n-octanol/water : log Pow: 1.03 (25 °C)

108-88-3:

Partition coefficient: n-octanol/water : log Pow: 2.73

Mobility in soil

No data available

Other adverse effects

No data available

Product:

Regulation

40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information

: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Harmful to aquatic life with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues

: Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging

: Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty

Safety Data Sheet

Urethane Retarder

drum.

SECTION 14. TRANSPORT INFORMATION

IATA (International Air Transport Association): UN1263, PAINT RELATED MATERIAL, 3, II, Flash Point: 7 °C (45 °F)

IMDG (International Maritime Dangerous Goods): UN1263, PAINT RELATED MATERIAL, 3, II

DOT (Department of Transportation): UN1263, PAINT RELATED MATERIAL, 3, II

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Flammable liquid, Moderate skin irritant, Moderate eye irritant, Carcinogen, Mutagen, Reproductive hazard, Specific target organ toxicity - repeated exposure, Aspiration hazard

WHMIS Classification : B2: Flammable liquid
D2A: Very Toxic Material Causing Other Toxic Effects
D2B: Toxic Material Causing Other Toxic Effects

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Toluene	108-88-3	1000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard
Chronic Health Hazard

SARA 302 : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Safety Data Sheet

Urethane Retarder

108-88-3	Toluene	12.9816 %
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Clean Air Act

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

108-88-3	Toluene	12.9816 %
100-41-4	Ethylbenzene	0.0165 %
71-43-2	Benzene	0.0132 %
1330-20-7	**Mixed Xylenes	0.0047 %
108-38-3	**m-Xylene	0.0018 %
91-20-3	**Naphthalene	0.0003 %
98-82-8	Cumene	0.6488 PPM

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

108-88-3	Toluene	12.9816 %
100-41-4	Ethylbenzene	0.0165 %
71-43-2	Benzene	0.0132 %
1330-20-7	**Mixed Xylenes	0.0047 %
98-82-8	Cumene	0.6488 PPM

Clean Water Act

The following Hazardous Substances are listed under the U.S. Clean Water Act, Section 311, Table 116.4A:

108-88-3	Toluene	12.9816 %
100-41-4	Ethylbenzene	0.0165 %
71-43-2	Benzene	0.0132 %
1330-20-7	**Mixed Xylenes	0.0047 %
108-38-3	**m-Xylene	0.0018 %
91-20-3	**Naphthalene	0.0003 %

The following Hazardous Chemicals are listed under the U.S. Clean Water Act, Section 311, Table 117.3:

108-88-3	Toluene	12.9816 %
100-41-4	Ethylbenzene	0.0165 %
71-43-2	Benzene	0.0132 %
1330-20-7	**Mixed Xylenes	0.0047 %
91-20-3	**Naphthalene	0.0003 %

This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

108-88-3	Toluene	12.9816 %
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US State Regulations

Massachusetts Right To Know

108-88-3	Toluene	10 - 20 %
71-43-2	Benzene	0 - 0.1 %

Pennsylvania Right To Know

1119-40-0	Dimethyl glutarate	30 - 50 %
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Safety Data Sheet

Urethane Retarder

108-65-6	Glycol ether PM acetate	20 - 30 %
106-65-0	Dimethyl succinate	10 - 20 %
627-93-0	Dimethyl adipate	10 - 20 %
108-88-3	Toluene	10 - 20 %
68410-97-9 / 64742-49-0 / 64742-89-8	Distillates, pet, lt dist hydrotreat process, low-boil AND/OR Naphtha (pet), hydrotreated lt AND/OR Solvent naphtha (pet), lt aliph.	1 - 5 %
100-41-4	Ethylbenzene	0 - 0.1 %
71-43-2	Benzene	0 - 0.1 %

New Jersey Right To Know

1119-40-0	Dimethyl glutarate	30 - 50 %
108-65-6	Glycol ether PM acetate	20 - 30 %
106-65-0	Dimethyl succinate	10 - 20 %
627-93-0	Dimethyl adipate	10 - 20 %
108-88-3	Toluene	10 - 20 %

California Prop 65

	WARNING! This product contains a chemical known to the State of California to cause cancer.	
100-41-4	Ethylbenzene	
71-43-2	Benzene	
91-20-3	**Naphthalene	
98-82-8	Cumene	
	WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.	
108-88-3	Toluene	
71-43-2	Benzene	

The components of this product are reported in the following inventories:

United States TSCA Inventory	:	y (positive listing) (On TSCA Inventory)
Canadian Domestic Substances List (DSL)	:	y (positive listing) (All components of this product are on the Canadian DSL.)
Australia Inventory of Chemical Substances (AICS)	:	y (positive listing) (On the inventory, or in compliance with the inventory)
New Zealand. Inventory of Chemical Substances	:	n (Negative listing) (Not in compliance with the inventory)

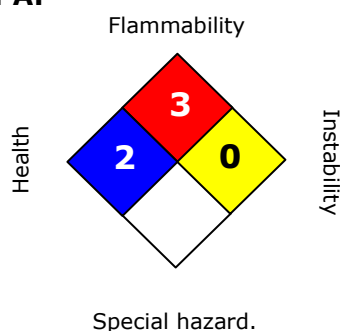
Safety Data Sheet

Urethane Retarder

Japan. ENCS - Existing and New Chemical Substances Inventory	:	y (positive listing) (On the inventory, or in compliance with the inventory)
Korea. Korean Existing Chemicals Inventory (KECI)	:	y (positive listing) (On the inventory, or in compliance with the inventory)
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	:	y (positive listing) (On the inventory, or in compliance with the inventory)
China. Inventory of Existing Chemical Substances in China (IECSC)	:	y (positive listing) (On the inventory, or in compliance with the inventory)

SECTION 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	2*
FLAMMABILITY	3
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 =Extreme, * = Chronic

Version 2.0
Revision Date 06/20/2019

The information accumulated is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made become available subsequently to the date hereof, we do not assume any responsibility for the results of its use. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

Safety Data Sheet

Urethane Retarder

Legacy MSDS: R0394718

Material number:
543717, 55472

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50			Lethal Concentration 50%