

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier GENERAL PURPOSE CLEANER

Other means of identification

Product code ADV 99-1
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.advantagerefinish.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

Acute toxicity (Oral) Category 3

Acute toxicity Category 3

(Inhalation)

Acute toxicity (Dermal) Category 3

Skin irritation Category 2

Eye irritation Category 2A

Germ cell mutagenicity Category 1B

Carcinogenicity Category 2

Reproductive toxicity Category 2

Specific target organ tox- Category 1

icity - single exposure

Category 1 (Eyes, Central nervous system)

Specific target organ toxicity - single exposure

Category 3 (Central nervous system)

Specific target organ toxicity - repeated exposure (Inhalation)

Category 2 (Auditory system, Eyes)

Aspiration hazard

Category 1

GHS Label element

Hazard pictograms









Signal word

Danger

Hazard statements

H225 Highly flammable liquid and vapour.

H301 + H311 + H331 Toxic if swallowed, in contact

with skin or if inhaled

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

H340 May cause genetic defects. H351 Suspected of causing cancer.

H361 Suspected of damaging fertility or the unborn

child.

H370 Causes damage to organs (Eyes, Central nervous

system).

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. P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area. 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.

P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth. P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P304 + P340 + P311 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P307 + P311 IF exposed: Call a POISON CENTER or doctor/ physician.

P331 Do NOT induce vomiting.

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 + P233 Store in a well-ventilated place. Keep container tightly closed.

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 Group 2B: Possibly carcinogenic to humans

64742-49-0 Naphtha (pet), hydrotreated

lt

64742-89-8

Solvent naphtha (pet), lt

aliph.

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.

OSHANo 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 antici-

pated carcinogen by NTP.

Emergency Overview

Appearance	liquid
Colour	clear, colourless
Hazard Summary	No information available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

CAS-No.	Chemical Name	Concentration (%)
67-56-1	Methanol	30 - 50
108-88-3	Toluene	30 - 50
67-64-1	Acetone	10 - 20
64742-49-0	Naphtha (pet), hydrotreated It	0 - 20
64742-89-8	Solvent naphtha (pet), lt aliph.	0 - 20
68410-97-9	Distillates, pet, It dist hydrotreat process,	0 - 20
	low-boil	
142-82-5	Hentane	0.1 - 1

Special Notes: Functionally equivalent petroleum streams may be

found in this preparation at varying concentrations.

SECTION 4. FIRST AID MEASURES

General advice Move out of dangerous area.

Consult a physician.

Show this safety data sheet to the doctor in attend-

ance

Symptoms of poisoning may appear several hours

later.

Do not leave the victim unattended.

If inhaled Consult a physician after significant exposure.

If unconscious place in recovery position and seek

medical advice.

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 per-

son.

If symptoms persist, call a physician. Take victim immediately to hospital.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing

media

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

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 sepa-

rately. This must not be discharged into drains.

Fire residues and contaminated fire extinguishing wa-

ter must be disposed of in accordance with local regu-

lations.

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.

NFPA Flammable and Combustible Liquids Classification:

Flammable Liquid Class IB

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 noncombustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regula-

tions (see section 13).

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 discharg-

Provide sufficient air exchange and/or exhaust in work rooms.

Container may be opened only under exhaust ventila-

tion hood.

Open drum carefully as content may be under pres-

sure.

Dispose of rinse water in accordance with local and

national regulations.

Conditions for safe stor-

age

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 com-

ply 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
67-56-1	Methanol	TWA	200 ppm	ACGIH
		STEL	250 ppm	ACGIH
		TWA	200 ppm 260 mg/m3	NIOSH REL
		ST	250 ppm 325 mg/m3	NIOSH REL
		TWA	200 ppm 260 mg/m3	OSHA Z-1
		STEL	250 ppm 325 mg/m3	OSHA PO
		TWA	200 ppm 260 mg/m3	OSHA PO
108-88-3	Toluene	TWA	20 ppm	ACGIH
		TWA	100 ppm 375 mg/m3	NIOSH REL
		ST	150 ppm 560 mg/m3	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/m3	OSHA PO
		STEL	150 ppm 560 mg/m3	OSHA PO
67-64-1	Acetone	TWA	500 ppm	ACGIH

		STEL	750 ppm	ACGIH
		TWA	250 ppm 590 mg/m3	NIOSH REL
		TWA	1,000 ppm 2,400 mg/m3	OSHA Z-1
		TWA	750 ppm 1,800 mg/m3	OSHA PO
		STEL	1,000 ppm 2,400 mg/m3	OSHA PO
64742-49-0	Naphtha (pet), hydrotreated lt	TWA	500 ppm 2,000 mg/m3	OSHA Z-1
		TWA	400 ppm 1,600 mg/m3	OSHA PO
64742-89-8	Solvent naphtha (pet), lt aliph.	TWA	500 ppm 2,000 mg/m3	OSHA Z-1
		TWA	400 ppm 1,600 mg/m3	OSHA PO
142-82-5	Heptane	TWA	85 ppm 350 mg/m3	NIOSH REL
		С	440 ppm 1,800 mg/m3	NIOSH REL
		TWA	500 ppm 2,000 mg/m3	OSHA Z-1
		TWA	400 ppm 1,600 mg/m3	OSHA PO
		STEL	500 ppm 2,000 mg/m3	OSHA PO

Biological occupational exposure limits

Components	CAS-No.	Control parame- ters	Biological specimen	Sam- pling time	Permissi- ble con- centration	Basis
Methanol	67-56-1	Methanol	Urine	End of shift (As soon as possible after expo- sure ceases)	15 mg/l	ACGIH BEI
Toluene	108-88-	Toluene	In blood	Prior to last shift of work- week	0.02 mg/l	ACGIH BEI
		Toluene	Urine	End of shift (As soon as	0.03 mg/l	ACGIH BEI

				possible after expo- sure ceases)		
		o-Cresol	Urine	End of shift (As soon as possible after expo- sure ceases)	0.3 mg/g Creatinine	ACGIH BEI
Acetone	67-64-1	Acetone	Urine	End of shift (As soon as possible after expo- sure ceases)	50 mg/l	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 dis-

cussed with the producers of the protective gloves.

Tightly fitting safety goggles

Wear face-shield and protective suit for abnormal pro-

cessing 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 Avoid contact with skin, eyes and clothing.

When using do not eat or drink. When using do not smoke.

Wash hands before breaks and immediately after

handling the product.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance liquid

Colour clear, colourless

Odour No data available

Odour Threshold No data available

pH No data available

Freezing Point No data available

Boiling Point (Boiling 56 - 150 °C (133 - 302 °F)

point/boiling range)

Flash point $>= -20.00 \, ^{\circ}\text{C} \, (-4.00 \, ^{\circ}\text{F})$

Evaporation rate No data available

Flammability (solid, gas) No data available

Burning rate No data available

Upper explosion limit 7 - 36.5 %(V)

Lower explosion limit 0.8 - 6 %(V)

Vapour pressure 231 mmHg @ 25 °C (77 °F)

Calculated Vapor Pressure

Relative vapour density No data available

Relative density 0.808 @ 20 °C (68 °F)

Density 0.808 g/cm3 @ 20 °C (68 °F)

Bulk density No data available

Water solubility No data available

Solubility in other sol- No data available

vents

Partition coefficient: n- No

octanol/water

No data available

Auto-ignition temperature No data available

Thermal decomposition No data available

Regulatory VOC (lbs/gal) 6.76

Regulatory VOC (g/l) 810.03

Actual VOC (lbs/gal) 5.97

Actual VOC (g/l) 715.36

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

Vapours may form explosive mixture with air.

Conditions to avoid Keep away from heat, flame, sparks and other ignition

sources.

Extremes of temperature and direct sunlight.

Incompatible materials Acids

alkalis aluminum Amines Ammonia halogens Lead Peroxides

Reducing agents Strong bases

Strong oxidizing agents

Zinc

metal salts

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Method: Calculation method

Exposure time: 4 h

Test atmosphere: vapour

Method: Calculation method

Method: Calculation method

Components:

67-56-1:

Acute oral toxicity LD50 (rat): 100 mg/kg

Assessment: The component/mixture is toxic after

single ingestion.

Acute inhalation toxicity LC50 (rat): 5 mg/l

Assessment: The component/mixture is toxic after

short term inhalation.

Acute dermal toxicity LD50 (rabbit): 300 mg/kg

Assessment: The component/mixture is 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

67-64-1:

Acute oral toxicity LD50 (rat): 5,800 mg/kg

Acute inhalation toxicity LC50 (rat): 76.0 mg/l

Exposure time: 4 h

Acute dermal toxicity LD50 : > 7,426 mg/kg

64742-49-0:

Acute oral toxicity LD50 (rat, male and female): > 5,000 mg/kg

Method: OECD Test Guideline 401

GLP: yes

Acute inhalation toxicity Remarks: No data available

Acute dermal toxicity LD50 (rabbit, male and female): > 2,000 mg/kg

Method: OECD Test Guideline 402

GLP: yes

64742-89-8:

Acute oral toxicity LD50 (rat, male and female): > 5,000 mg/kg

Method: OECD Test Guideline 401

GLP: yes

Acute inhalation toxicity Remarks: No data available

Acute dermal toxicity LD50 (rabbit, male and female): > 2,000 mg/kg

Method: OECD Test Guideline 402

GLP: yes

68410-97-9:

Acute oral toxicity LD50 (rat): > 5,000 mg/kg

Acute inhalation toxicity Remarks: No data available

Acute dermal toxicity LD50 (rabbit): > 2,000 mg/kg

142-82-5:

Acute oral toxicity LD50 (rat, male and female): 5,000 mg/kg

Method: OECD Test Guideline 401

Symptoms: Salivation

GLP: yes

Remarks: Information given is based on data obtained

from similar substances.

Acute inhalation toxicity LC50 (rat, male and female): 73.5 mg/l

Exposure time: 4 h
Test atmosphere: vapour

Method: OECD Test Guideline 403

Acute dermal toxicity LD50 (rabbit, male and female): > 2,000 mg/kg

Method: OECD Test Guideline 402

GLP: ves

Remarks: Information given is based on data obtained

from similar substances.

Skin corrosion/irritation

Product:

Remarks: Irritating to skin.

Components:

67-56-1:

Species: rabbit

Result: No skin irritation

108-88-3:

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

67-64-1:

Species: rabbit Exposure time: 24 h Method: In vivo

Result: Mild skin irritation

64742-49-0:

Species: rabbit

Result: Irritating to skin.

64742-89-8:

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

68410-97-9:

Species: rabbit

Result: Irritating to skin.

142-82-5:

Species: rabbit Exposure time: 24 h

Method: OECD Test Guideline 404

Result: Irritating to skin.

GLP: yes

Remarks: Based on a similar product formulation.

Serious eye damage/eye irritation

Product:

Remarks: Irritating to eyes.

Components:

67-56-1:

Species: rabbit

Result: No eye irritation

108-88-3:

Species: rabbit

Result: Irritating to eyes.

Method: OECD Test Guideline 405

67-64-1:

Species: rabbit

Result: Irritating to eyes. Exposure time: 24 h

64742-49-0:

Species: rabbit

Result: Irritating to eyes.

64742-89-8: Species: rabbit

Result: Irritating to eyes.

68410-97-9: Species: rabbit

Result: Irritating to eyes.

142-82-5: Species: rabbit

Result: Irritating to eyes.

Method: OECD Test Guideline 405

GLP: yes

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

Respiratory or skin sensitisation

Components:

67-56-1:

Test Type: Maximisation Test (GPMT)

Species: guinea pig

Method: OECD Test Guideline 406

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

67-64-1:

Test Type: Maximization test

Species: guinea pig

Result: Did not cause sensitisation on laboratory animals.

64742-49-0:

Test Type: Buehler Test Species: guinea pig

Result: Did not cause sensitisation on laboratory animals.

64742-89-8:

Test Type: Buehler Test Species: guinea pig

Result: Did not cause sensitisation on laboratory animals.

142-82-5:

Test Type: Maximization test

Species: guinea pig

Method: OECD Test Guideline 406

Result: Does not cause skin sensitisation.

Remarks: Based on a similar product formulation.

Germ cell mutagenicity

Components:

67-56-1:

Genotoxicity in vitro Test Type: DNA damage and/or repair

Metabolic activation: with and without metabolic acti-

vation

Result: Ambiguous

Genotoxicity in vivo Test Type: In vivo micronucleus test

Test species: mouse (male and female)

Cell type: Bone marrow

Application Route: Intraperitoneal

Exposure time: Single

Dose: 0, 1920, 3200, 4480 mg/kg

Result: negative

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 acti-

vation

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.

67-64-1:

Genotoxicity in vitro Test Type: Mammalian cell gene mutation assay

Test species: Mouse lymphoma cells

Metabolic activation: Without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Test Type: Ames test

Metabolic activation: with and without metabolic acti-

vation

Method: OECD Test Guideline 471

Result: negative

Test Type: Chromosome aberration test in vitro Test species: Chinese hamster ovary (CHO)

Metabolic activation: with and without metabolic acti-

vation

Method: OECD Test Guideline 473

Result: negative

Genotoxicity in vivo Test Type: In vivo micronucleus test

Test species: mouse Application Route: Oral Exposure time: 13 wk

Dose: 5,000, 10,000, 20,000 ppm

Result: negative

Germ cell mutagenicity-

Assessment

Tests on bacterial or mammalian cell cultures did not

show mutagenic effects.

64742-49-0:

Germ cell mutagenicity-

Assessment

Mutagenicity classification not possible from current

data

64742-89-8:

Germ cell mutagenicity-

Assessment

Mutagenicity classification not possible from current

data

68410-97-9:

Genotoxicity in vitro Test Type: Mammalian cell gene mutation assay

Test species: mouse lymphoma cells

Result: positive

Genotoxicity in vivo Test Type: In vivo micronucleus test

Test species: mouse

Method: OECD Test Guideline 474

Result: positive

Germ cell mutagenicity-

Assessment

Positive result(s) from in vivo heritable germ cell mu-

tagenicity tests in mammals

142-82-5:

Genotoxicity in vitro Test Type: Chromosome aberration test in vitro

Test species: Rat liver

Metabolic activation: Without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Test Type: Ames test

Metabolic activation: with and without metabolic acti-

vation

Method: OECD Test Guideline 471

Result: negative

Germ cell mutagenicity-

Assessment

Did not show mutagenic effects in animal experi-

ments.

Carcinogenicity

Components:

67-56-1:

Carcinogenicity - As-

sessment

Suspected human carcinogens

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 - As- Not classifiable as a human carcinogen.

Carcinogenicity classification not possible from current

sessment

67-64-1:

Species: mouse, (female) Application Route: Dermal

Exposure time: 365 d (90%) or 424 d (100%) Dose: 0.1ml 90(71mg) or 100% (79mg) Frequency of Treatment: 3 times per wk

NOAFI: 79

Result: did not display carcinogenic properties

sessment data.

64742-49-0:

Carcinogenicity - As-

Carcinogenicity - As-Not classifiable as a human carcinogen.

sessment

64742-89-8:

Carcinogenicity - As-

sessment

Not classifiable as a human carcinogen.

68410-97-9:

Species: mouse

NOAEL: 50 mg/kg bw/day

Method: OECD Test Guideline 451

Result: evidence of carcinogenic activity

sessment

Carcinogenicity - As- : Possible human carcinogen

142-82-5:

Remarks: This information is not available.

Carcinogenicity - As-

sessment

Carcinogenicity classification not possible from current

data.

Reproductive toxicity

Components:

67-56-1:

Effects on fertility Test Type: Two-generation study

> Species: rat, male and female Application Route: Inhalation Dose: 0, 0.013, 0.13, 1.3 mg/L Duration of Single Treatment: 20 h

General Toxicity - Parent: NOAEC: 1.3 mg/l General Toxicity F1: NOAEC: 0.13 mg/l

Fertility: NOAEC: 1.3 mg/l

Symptoms: Effects on postnatal development. Result: Animal testing did not show any effects on

fertility.

Effects on foetal devel-

opment

Species: rat

Application Route: inhalation (vapour) Dose: 0, 6.65, 13.3, 26.6 mg/L

Duration of Single Treatment: 20 d Frequency of Treatment: 7 hr/day

General Toxicity Maternal: NOAEC: 13.3 mg/L

Teratogenicity: NOAEC: 6.65 mg/L

Result: Teratogenic effects.

Reproductive toxicity -

Assessment

Some evidence of adverse effects on sexual function

and fertility, and/or 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. Re-

duced 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.

Effects on foetal devel-

opment

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.

67-64-1:

Effects on fertility

Species: rat, male Application Route: oral Dose: 0, 5000, 10000 mg/L

Frequency of Treatment: 7 days/week General Toxicity - Parent: LOAEL: 10,000

Fertility: 10,000

Effects on foetal devel-

opment

Species: rat

Application Route: Inhalation

Dose: 0, 440, 2200, 11000 ppm

Frequency of Treatment: 7 days/week

General Toxicity Maternal: NOAEC: 2,200 ppm

Teratogenicity: NOAEC: 11,000 ppm

Embryo-foetal toxicity.: NOAEC: 2,200 ppm

Method: OECD Test Guideline 414 Result: No teratogenic potential.

GLP: No data available

Reproductive toxicity -

Assessment

No evidence of adverse effects on sexual function and fertility, and on development, based on animal exper-

iments.

64742-49-0:

Reproductive toxicity -Assessment

Fertility classification not possible from current data. Embryotoxicity classification not possible from current

data.

64742-89-8:

Reproductive toxicity -Assessment

Fertility classification not possible from current data. Embryotoxicity classification not possible from current

data.

68410-97-9:

Reproductive toxicity -Assessment

Fertility classification not possible from current data. Embryotoxicity classification not possible from current

data.

142-82-5:

Effects on fertility

Test Type: Two-generation study Species: rat, male and female Application Route: vapour

Dose: 0, 900, 3000, 9000 ppm

Frequency of Treatment: 5 days/week

General Toxicity - Parent: NOAEC: 3,000 ppm General Toxicity F1: NOAEC: 3,000 ppm

Fertility: NOAEC: 9,000 ppm

Symptoms: Reduced maternal body weight gain. Re-

duced offspring weight gain. Method: OECD Test Guideline 416 Result: No reproductive effects.

Remarks: Information given is based on data obtained

from similar substances.

Effects on foetal devel-

opment

Species: mouse

Application Route: inhalation (vapour)

Dose: 0, 900, 3000, 9000 ppm Duration of Single Treatment: 10 d Frequency of Treatment: 6 hr/day

General Toxicity Maternal: NOAEC: 900 ppm Developmental Toxicity: NOAEC: 3,000 ppm

Symptoms: Skeletal malformations. Method: OECD Test Guideline 414

GLP: yes

Remarks: Information given is based on data obtained

from similar substances.

Reproductive toxicity - Assessment

Animal testing did not show any effects on fertility. Embryotoxicity classification not possible from current

data.

STOT - single exposure

Product:No data available

Components:

67-56-1:

Exposure routes:	Target Organs:	Assessment:	Remarks:
	Eyes, Central nerv-	Causes damage to	
	ous system	organs., The sub-	
		stance or mixture is	
		classified as specific	
		target organ toxi-	
		cant, single expo-	
		sure, category 1.	

108-88-3:

Exposure routes:	Target Organs:	Assessment:	Remarks:
Inhalation	Central nervous	May cause drowsi-	
	system	ness or dizziness.,	
		The substance or	
		mixture is classified	
		as specific target	
		organ toxicant, sin-	
		gle exposure, cate-	
		gory 3 with narcotic	
		effects.	

67-64-1:

U/ UT 1.			
Exposure routes:	Target Organs:	Assessment:	Remarks:
Inhalation	Central nervous	May cause drowsi-	
	system	ness or dizziness.,	
		The substance or	
		mixture is classified	
		as specific target	
		organ toxicant, sin-	
		gle exposure, cate-	
		gory 3 with narcotic	

effects.

64742-49-0:

Exposure routes: Target Orga	ns: Assessment:	Remarks:
Inhalation Central nervo		

64742-89-8:No data available

68410-97-9:

Exposure routes:	Target Organs:	Assessment:	Remarks:
Inhalation	Central nervous	May cause drowsi-	
	system	ness or dizziness.,	
		The substance or	
		mixture is classified	
		as specific target	
		organ toxicant, sin-	
		gle exposure, cate-	
		gory 3 with narcotic	
		effects.	

142-82-5:

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.	

STOT - repeated exposure

Product:No data available

Components:

67-56-1: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.	

67-64-1:No data available

64742-49-0:No data available

64742-89-8: No data available

68410-97-9: No data available

142-82-5: No data available

Repeated dose toxicity

Components:

67-56-1:

Species: mouse, male and female

NOAEL: 1.3 mg/l

Application Route: Inhalation Exposure time: 12 mths

Number of exposures: Continuous Dose: 0, 0.013, 0.13, 1.3 mg/L

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

67-64-1:

Species: mouse, male

NOAEL: 20000

Application Route: Oral Exposure time: 13 wk Number of exposures: daily

Dose: 1250, 2500, 5000, 10000, 20000

Method: OECD Test Guideline 408

GLP: No data available

Species: mouse, female

NOAEL: 20000 LOAEL: 50000

Application Route: Oral Exposure time: 13 wk Number of exposures: daily

Dose: 2500, 5000, 10000, 20000, 5000 Method: OECD Test Guideline 408

GLP: No data available

Repeated dose toxicity - Causes mild skin irritation., Causes serious eye irrita-

Assessment tion.

64742-89-8:

Species: rat, male and female

NOAEL: 1402

Application Route: inhalation (vapour)

Test atmosphere: vapour Exposure time: 13 weeks

Number of exposures: 6 hours/day, 5 days/week

Dose: 322, 1402, 9869 mg/m3

GLP: yes

Target Organs: Kidney

Symptoms: Nasal and ocular discharge

142-82-5:

Species: rat, male NOAEL: 12470 mg/m3

Application Route: inhalation (vapour)

Exposure time: 16 wks

Number of exposures: 12 h/d, 7 d/wk

Dose: 0, 12470 mg/3

Repeated dose toxicity - Causes skin irritation.

Assessment

Aspiration toxicity

Components:

108-88-3:

Aspiration Toxicity - Category 1

64742-49-0:

May be fatal if swallowed and enters airways.

64742-89-8:

May be fatal if swallowed and enters airways.

68410-97-9:

May be fatal if swallowed and enters airways.

142-82-5:

Aspiration Toxicity - Category 1

Further information

Product:

Remarks: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting., Concentrations substantially above the TLV value may cause narcotic effects., Solvents may degrease the skin.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

67-56-1:

Toxicity to fish LC50 (Lepomis macrochirus (Bluegill sunfish)): 15,400

mg/l

Exposure time: 96 h

Test Type: flow-through test

Toxicity to daphnia and

other aquatic inverte-

brates

EC50 (Daphnia magna (Water flea)): > 10,000 mg/l

Exposure time: 48 h Test Type: static test

Toxicity to algae EC50 (Scenedesmus capricornutum (fresh water al-

gae)): 22,000 mg/l End point: Growth rate Exposure time: 96 h

Test Type: static test

Method: OECD Test Guideline 201

Toxicity to bacteria IC50 (activated sludge): > 1,000 mg/l

> End point: Growth rate Exposure time: 3 h Test Type: Static

Method: OECD Test Guideline 209

108-88-3:

brates

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

mg/l

Exposure time: 96 h

Test Type: flow-through test

Toxicity to daphnia and

other aquatic inverte-

EC50 (Ceriodaphnia dubia): 3.78 mg/l

Exposure time: 48 h Test Type: Renewal

Toxicity to algae EC50 (Chlorella vulgaris (Fresh water algae)): 134

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.

67-64-1:

LC50 (Oncorhynchus mykiss (rainbow trout)): 6,100 Toxicity to fish

mg/l

Exposure time: 48 h

Toxicity to daphnia and other aquatic inverte-

brates

EC50 (Daphnia magna (Water flea)): 7,630 mg/l

EC50 (Daphnia magna (Water flea)): 4.5 mg/l

Exposure time: 48 h Test substance: Acetone

Remarks: No data available Toxicity to algae

64742-49-0:

Toxicity to fish LC50 (Oncorhynchus mykiss (rainbow trout)): 10 mg/l

Exposure time: 96 h

Toxicity to daphnia and

other aquatic inverte-

Exposure time: 48 h

brates

Toxicity to algae EC50 (Pseudokirchneriella subcapitata (green algae)):

3.71 mg/l

Exposure time: 96 h

Ecotoxicology Assessment

Acute aquatic toxicity Toxic to aquatic life.

Chronic aquatic toxicity Toxic to aquatic life with long lasting effects.

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 inverte-

brates

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 mg/l

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.

68410-97-9:

Toxicity to fish LC50 (Pimephales promelas (fathead minnow)): 8.2

mg/l

Exposure time: 96 h

Toxicity to daphnia and other aquatic inverte-

brates

EC50 (Daphnia magna (Water flea)): 4.5 mg/l

Exposure time: 48 h

Toxicity to algae EC50 (Pseudokirchneriella subcapitata (green algae)):

3.1 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Ecotoxicology Assessment

Acute aquatic toxicity Toxic to aquatic life.

Chronic aquatic toxicity Toxic to aquatic life with long lasting effects.

142-82-5:

Toxicity to fish LC50 (Carassius auratus (goldfish)): 4 mg/l

Exposure time: 24 h

Remarks: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Toxicity to daphnia and

other aquatic inverte-

brates

EC50 (Daphnia magna (Water flea)): 1.5 mg/l

Exposure time: 48 h Test Type: static test

Remarks: Very toxic to aquatic organisms.

Toxicity to algae Remarks: No data available

Ecotoxicology Assessment

Acute aquatic toxicity

Very toxic to aquatic life.

Chronic aquatic toxicity Very toxic to aquatic life with long lasting effects.

Persistence and degradability

Components:

67-56-1:

Biodegradability aerobic

Result: Readily biodegradable.

Biodegradation: 72 %

Remarks: Readily biodegradable

Biochemical Oxygen De-

mand (BOD)

600 - 1,120 mg/g

Chemical Oxygen De-

mand (COD)

1,420 mg/g

BOD/COD BOD: 600 - 1120COD: 1420

Stability in water Hydrolysis: 91 % at19 °C(72 h)

Remarks: Hydrolyses on contact with water.

Hydrolyses readily.

108-88-3:

Biodegradability Inoculum: Sewage

Biodegradation: 100 %

Remarks: Readily biodegradable

67-64-1:

Biodegradability Remarks: Readily biodegradable

64742-49-0:

Biodegradability aerobic

Inoculum: activated sludge Concentration: 20 mg/l Biodegradation: 74.30 % Exposure time: 56 d

GLP: yes

Remarks: Inherently biodegradable.

64742-89-8:

Biodegradability Concentration: 49.2 mg/l

Result: Readily biodegradable.

Biodegradation: 77 % Testing period: 2 d Exposure time: 28 d

GLP: yes

142-82-5:

Biodegradability Primary biodegradation

Inoculum: activated sludge Concentration: 100 mg/l Biodegradation: 100 % Testing period: 2 d Exposure time: 25 d

Remarks: Readily biodegradable

Bioaccumulative potential

Components:

67-56-1:

Bioaccumulation Species: Cyprinus carpio (Carp)

Bioconcentration factor (BCF): 1.0

Exposure time: 72 d Temperature: 20 °C Concentration: 5 mg/l

Remarks: This substance is not considered to be very

persistent nor very bioaccumulating (vPvB).

Partition coefficient: n-

octanol/water

log Pow: -0.77

108-88-3:

Partition coefficient: n-

octanol/water

log Pow: 2.73

67-64-1:

Partition coefficient: n-

octanol/water

log Pow: -0.24

64742-49-0:

Partition coefficient: n-

octanol/water

Remarks: No data available

64742-89-8:

Partition coefficient: n-

octanol/water

log Pow: 2.13 - 4.85 (25 °C)

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 Sub-

stances

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 in-

formation

An environmental hazard cannot be excluded in the

event of unprofessional handling or disposal., Toxic 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.

Dispose of as unused product. Do not re-use empty containers.

Do not burn, or use a cutting torch on, the empty

drum.

SECTION 14. TRANSPORT INFORMATION

IATA (International Air Transport Association): UN1263, PAINT RELATED MATERIAL, 3, II, Flash Point:-20.00 °C(-4.00 °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, Carcinogen, Toxic by ingestion,

> Toxic by skin absorption, Moderate skin irritant, Moderate eye irritant, Teratogen, Reproductive

hazard, Mutagen

WHMIS Classification B2: Flammable liquid

D1B: Toxic Material Causing Immediate and Serious

Toxic Effects

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	2856

SARA 304 Extremely Hazardous Substances Reportable Quantity

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

SARA 311/312 Fire Hazard

Intermediate or Final VOC's (40 CFR 60.489):

Hazards Chronic Health Hazard

Acute Health Hazard

Clean Air Act

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

67-56-1	Methanol	40.0009 %
108-88-3	Toluene	35.01 %
71-43-2	Benzene	0.0457 %
100-41-4	Ethylbenzene	0.0449 %
110-54-3	Hexane	0.002 %
91-20-3	Naphthalene	0.0002 %
98-82-8	Cumene	0.0001 %

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 SOCMI

	67-56-1	Methanol	40.0009 %
	108-88-3	Toluene	35.01 %
	67-64-1	Acetone	15 %
	110-82-7	Cyclohexane	0.25 %
	71-43-2	Benzene	0.0457 %
	100-41-4	Ethylbenzene	0.0449 %
	1330-20-7	Mixed xylenes	0.013 %
	98-82-8	Cumene	0.0001 %
Clean W	ater Act		
The follow	wing Hazardous	Substances are listed under the	U.S. CleanWater Act, Sec-
tion 311,	Table 116.4A:		
	108-88-3	Toluene	35.01 %
	110-82-7	Cyclohexane	0.25 %
	71-43-2	Benzene	0.0457 %
	100-41-4	Ethylbenzene	0.0449 %
	1330-20-7	Mixed xylenes	0.013 %
	91-20-3	Naphthalene	0.0002 %
The follow	wing Hazardous	Chemicals are listed under the L	J.S. CleanWater Act, Section
311, Tab	le 117.3:		
	108-88-3	Toluene	35.01 %
	110-82-7	Cyclohexane	0.25 %
	71-43-2	Benzene	0.0457 %
	100-41-4	Ethylbenzene	0.0449 %
	1330-20-7	Mixed xylenes	0.013 %
	91-20-3	Naphthalene	0.0002 %
This prod	luct contains th	e following toxic pollutants listed	under the U.S. Clean Water
Act Section	on 307		
	108-88-3	Toluene	35.01 %
US State	Regulations		
Massach	usetts Right ⁻	Γο Know	
	67-56-1	Methanol	30 - 50 %
	108-88-3		30 - 50 %
	67-64-1	Acetone	10 - 20 %

71-43-2 Benzene

Pennsylvania Right To Know			
67-56-1	Methanol	30 - 50 %	
108-88-3	Toluene	30 - 50 %	
67-64-1	Acetone	10 - 20 %	
64742-49-0	Naphtha (pet), hydrotreated lt	0 - 20 %	
64742-89-8	Solvent naphtha (pet), lt aliph.	0 - 20 %	
68410-97-9	Distillates, pet, It dist hydrotreat process, low-boil	0 - 20 %	
110-82-7	Cyclohexane	0.1 - 1 %	
71-43-2	Benzene	0 - 0.1 %	
100-41-4	Ethylbenzene	0 - 0.1 %	
1330-20-7	Mixed xylenes	0 - 0.1 %	

0 - 0.1 %

New Jersey	Right To Knov	v	
	67-56-1	Methanol	30 - 50 %
	108-88-3	Toluene	30 - 50 %
	67-64-1	Acetone	10 - 20 %
	64742-49-0	Naphtha (pet), hydrotreated lt	0 - 20 %
	64742-89-8	Solvent naphtha (pet), It aliph.	0 - 20 %
	68410-97-9	Distillates, pet, lt dist hydrotreat process, low-boil	0 - 20 %
California Prop 65		WARNING! This product contains a chemical known to the State of California to cause cancer.	
	71-43-2	Benzene	
	100-41-4	Ethylbenzene	
	91-20-3	Naphthalene	
	98-82-8	Cumene	
		WARNING: This product contains a chem the State of California to cause birth defe reproductive harm.	
	67-56-1	Methanol	
	108-88-3	Toluene	
	71-43-2	Benzene	

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

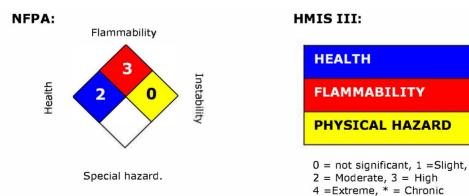
Switzerland. New notified substances and declared preparations	y (positive listing) (The formulation contains substances listed on the Swiss Inventory)
United States TSCA Inventory	y (positive listing) (On TSCA Invento- ry)
Canadian Domestic Substances List (DSL)	y (positive listing) (All components 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)
Japan. ENCS - Existing and New Chemical	n (Negative listing)

Substances Inventory	(Not in compliance with the inventory)
Japan. ISHL - Inventory of Chemical Substances (METI)	n (Negative listing) (Not 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

Version 2.0

Revision Date 06/19/2019



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.

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Legecy MSDS: 000000148128

Material number: 707948, 707692

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 Sub- stances 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	Philipines 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 Compositon, Complex Reaction Products, and Biological Materials	
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials In- formation System	
LC50	LC50 Lethal Concentration 50%			