

PAGE #:1 OF 7	PRODUCT SAFETY DATA SHEET RESEARCH PRODUCTS INTERNATIONAL	ISSUE DATE: 12/15/14	REV.:1 REV Date :11/10/15
DOCUMENT #: F/RPI/QC 7.7.3-02	Product Name: Toluene (Reagent Grade)	RPI ITEM NO: 400015	

SECTION 1 - CHEMICAL IDENTIFICATION

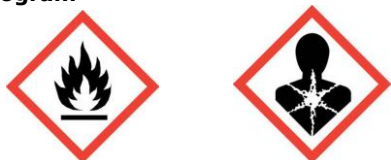
PRODUCT NAME: Toluene (Reagent Grade)
 RPI CATALOG #: 400015
 SUPPLIER'S NAME: Research Products International Corp.
 SUPPLIERS ADDRESS: 410 N Business Center Drive Mount Prospect, IL 60056
 EMERGENCY CONTACT: 1-800-424-9300
 OTHER INFORMATION: 847-635-7330

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture **GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

H225	Flammable liquids	Category 2
H304	Aspiration hazard	Category 1
H315	Skin corrosion/irritation	Category 2
H336	Specific target organ toxicity, single	Category 3
H361	Reproductive toxicity	Category 2
H373	Specific target organ toxicity - repeated exposure	Category 2
H401	Acute aquatic toxicity	Category 2

2.2 GHS Label elements, including Hazard and Precautionary Statement(s) **Pictogram**



Signal word: Danger
Hazard statement(s)

H225	High Flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H336	May cause drowsiness or dizziness
H361	Suspected of damaging fertility or the unborn child
H373	May cause genetic defects
H401	toxic to aquatic life

Prevention, Response, Storage and Disposal Precautionary Statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P233	Keep container tightly closed.

PAGE #:2 OF 7	PRODUCT SAFETY DATA SHEET RESEARCH PRODUCTS INTERNATIONAL	ISSUE DATE: 12/15/14	REV.:1 REV Date :11/10/15
DOCUMENT #: F/RPI/QC 7.7.3-02	Product Name: Toluene (Reagent Grade)	RPI ITEM NO: 400015	

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
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash skin thoroughly after handling
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310	IF SWALLOWED: Call a POISON CENTER or doctor/physician.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304	Do NOT induce vomiting.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P314	Get medical advice/attention if you feel unwell.
P321	Specific treatment (see. on this label).
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P362 + P364	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
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.
P501	Dispose of contents/ container to an approved waste disposal plant.

SECTION 3- COMPOSITION/INFORMATION ON INGREDIENTS

CAS Number: 108-88-3
 EINECS Number: 203-625-9
 Molecular Weight 92.14 g/mol
 Formula C₇H₈

SECTION 4 - FIRST-AID MEASURES

4.1 Description of first aid measures

General advice: Consult a doctor and show this safety data sheet.

- i. **If inhaled:** Remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen. If breathing

PAGE #:3 OF 7	PRODUCT SAFETY DATA SHEET RESEARCH PRODUCTS INTERNATIONAL	ISSUE DATE: 12/15/14	REV.:1 REV Date :11/10/15
DOCUMENT #: F/RPI/QC 7.7.3-02	Product Name: Toluene (Reagent Grade)	RPI ITEM NO: 400015	

stops, give artificial respiration. Consult a doctor.

- ii. **In case of skin contact:** Immediately wash skin with copious amounts of soap and water for at least 15 minutes. Remove contaminated clothing and shoes and wash before reuse. Consult a doctor.
- iii. **In case of eye contact:** Flush with copious amounts of water for at least 15 minutes. Consult a doctor.
- iv. **If swallowed:** Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Consult a doctor.

4.2 Most important symptoms and effects, both acute and delayed: To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

4.3 Indication of immediate medical attention and special treatment needed: Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide

5.2 Special hazards arising from the substance or mixture: Carbon oxides.

5.3 Precautions for fire-fighters: Wear suitable protective clothing to prevent contact with skin and eyes and self-contained breathing apparatus.

5.4 Further information: No data available

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Do not take action without suitable protective clothing - see section 8 of SDS. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing vapors, mist, dust or gas.

6.2 Environmental precautions: Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up: Cover spillage with suitable absorbent material. Using non-spark tools, sweep up material and place in an appropriate container. Decontaminate spill site with 10% caustic solution and ventilate area until after disposal is complete. Hold all material for appropriate disposal as described under section 13 of SDS.

6.4 Reference to other sections: For required PPE see section 8. For disposal see section 13.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for safe handling: Use in a chemical fume hood, with air supplied by an independent system. Avoid inhalation, contact with eyes, skin and clothing. Avoid the formation of dust and aerosols. Use in a well-ventilated area. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

7.2 Conditions for safe storage, including any incompatibilities: Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container tightly sealed until ready for use. Keep in a dry place. Handle and store under inert gas. Storage class : Flammable liquids.

7.3 Specific end use(s): Use in a laboratory fume hood where possible. Refer to employer's COSHH risk assessment.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

PAGE #:4 OF 7	PRODUCT SAFETY DATA SHEET RESEARCH PRODUCTS INTERNATIONAL	ISSUE DATE: 12/15/14	REV.:1 REV Date :11/10/15
DOCUMENT #: F/RPI/QC 7.7.3-02	Product Name: Toluene (Reagent Grade)	RPI ITEM NO: 400015	

Component	Value	OSHA PEL	NIOSH IDLH
Toluene	TWA: 20 ppm	(Vacated) TWA: 100 ppm (Vacated) TWA: 375 mg/m3 Ceiling: 300 ppm (Vacated) STEL: 150 ppm (Vacated) STEL: 560 mg/m3 TWA: 200 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m3 STEL: 150 ppm STEL: 560 mg/m3
Component	Quebec	Mexico OEL (TWA)	Ontario TWA EV
Toluene	TWA: 50 ppm TWA: 188 mg/m3 Skin	TWA: 50 ppm TWA: 188 mg/m3	TWA: 20 ppm

- ❖ **ACGIH:** American Conference of Governmental Industrial Hygienists
- ❖ **OSHA:** Occupational Safety and Health Administration
- ❖ **NIOSH IDLH:** The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

8.2 Exposure Controls

- i. **Appropriate engineering controls:** Use in a fume hood where applicable. Ensure all engineering measures described under section 7 of SDS are in place. Ensure laboratory is equipped with a safety shower and eye wash station.

8.3 Personal protective equipment

- i. **Eye/face protection:** Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
- ii. **Skin protection:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166
- iii. **Body Protection:** Wear appropriate protective clothing. Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
- iv. **Respiratory Protection:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
- v. **Control of environmental exposure:** Do not let product enter drains

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Colorless Liquid	Vapor Pressure (At 20.0 °C)	29.1 hPa (21.8 mmHg)
Odor	Aromatic	Vapor Density	No Data Available
Odor Threshold	No Data Available	Relative Density	0.865 g/mL at 25 °C
pH	No Data Available	Water Solubility	0.5 g/l at 15 °C
Melting / Freezing Point	-93 °C	Partition Coefficient	No Data Available

PAGE #:5 OF 7	PRODUCT SAFETY DATA SHEET RESEARCH PRODUCTS INTERNATIONAL	ISSUE DATE: 12/15/14	REV.:1 REV Date :11/10/15
DOCUMENT #: F/RPI/QC 7.7.3-02	Product Name: Toluene (Reagent Grade)	RPI ITEM NO: 400015	

Initial Boiling Point Range	110 - 111 °C	Auto-Ignition Temperature	535.0 °C
Flash Point	4.0 °C	Decomposition Temperature	No Data Available
Evaporation Rate	No Data Available	Viscosity	No Data Available
Flammability (Solid, Gas)	No Data Available	Explosive Properties	No Data Available
Upper / Lower Flammability Or Explosive Limits	Upper explosion limit: 7 %(V) Lower explosion limit: 1.2 %(V)	Oxidizing Properties	No Data Available

SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions.

Hazardous Decomposition Products: Carbon monoxide (CO), Carbon dioxide (CO2)

Hazardous Polymerization: Hazardous polymerization does not occur.

Conditions to Avoid: Heat, flames and sparks

Incompatibilities: Strong oxidizing agents.

SECTION 11 - TOXICOLOGICAL INFORMATION

Acute Toxicity

LD50 Oral	LD50Dermal	LC50 inhalation
> 5,580 mg/kg (Rat)	12,196 mg/kg (Rabbit)	12,500 - 28,800 mg/m3 (Rat) 4 h

SECTION 12 - ECOLOGICAL INFORMATION

Eco Toxicity: Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Toluene	12.5 mg/L EC50 = 72 h 433 mg/L EC50 > 96 h	50-70 mg/L LC50 96 h 5-7 mg/L LC50 96 h 15-19 mg/L LC50 96 h 28 mg/L LC50 96 h 12 mg/L LC50 96 h	EC50 = 19.7 mg/L 30 min	11.5 mg/L EC50 = 48 h 5.46- 9.83 mg/L EC50 48 h

Mobility

Component	log Pow
Toluene	2.65

Persistence and degradability/ Bioaccumulative potential: No data available

Results of PBT and vPvB assessment: No data available

Other adverse effects: No data available

Chronic Toxicity: There are no known carcinogenic chemicals in this product

SECTION 13 - DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local

PAGE #:6 OF 7	PRODUCT SAFETY DATA SHEET RESEARCH PRODUCTS INTERNATIONAL	ISSUE DATE: 12/15/14	REV.:1 REV Date :11/10/15
DOCUMENT #: F/RPI/QC 7.7.3-02	Product Name: Toluene (Reagent Grade)	RPI ITEM NO: 400015	

disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Component	CAS#	RCRA - U Series Wastes	RCRA - P Series Wastes
Toluene	108-88-3	U220	-

SECTION 14 - TRANSPORT INFORMATION

	UN#	Proper Shipping Name	Hazard Class	Packaging Group
DOT	1294	TOLUENE	3	II
TDG	1294	TOLUENE	3	II
IATA	1294	TOLUENE	3	II
IMDG/IMO	1294	TOLUENE	3	II

SECTION 15 - REGULATORY INFORMATION

INTERNATIONAL INVENTORIES

TSCA	DSL	NDSL	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Listed	Listed	-	-	-	Listed	Listed	Listed	Listed	Listed

USA FEDERAL REGULATION

SARA 311/312 HAZARDOUS CATEGORIZATION

Acute Health Hazard	Chronic Health Hazard	Fire Hazard	Sudden Release Of Pressure Hazard	Reactive Hazard
Yes	Yes	Yes	No	No

OSHA /TSCA 12(b): Not Applicable

SARA 313

Component	CAS#	Weight%	SARA 313 – Threshold Values %
Toluene	108-88-3	>95	1.0

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA – Toxic Pollutants	CWA - Priority Pollutants
Toluene	Listed	1000 lb	Listed	Listed

Clean Air Act

Component	CAS#	HAPS Data
Toluene	108-88-3	Listed

California Proposition 65: This product contains Proposition 65 chemicals.

PAGE #:7 OF 7	PRODUCT SAFETY DATA SHEET RESEARCH PRODUCTS INTERNATIONAL	ISSUE DATE: 12/15/14	REV.:1 REV Date :11/10/15
DOCUMENT #: F/RPI/QC 7.7.3-02	Product Name: Toluene (Reagent Grade)	RPI ITEM NO: 400015	

Component	CAS#	California Prop. 65	Category
Toluene	108-88-3	Developmental Female Reproductive	Developmental

CERCLA

Component	Hazardous Substances RQs	CERCLA EHS RQs
Toluene	1000 lb	-

HMIS Rating

Health hazard	Chronic Health Hazard	Flammability	Physical Hazard
2	*	3	1

NFPA Rating

Health hazard	Fire Hazard	Reactivity Hazard
2	3	0

STATE RIGHT TO KNOW

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Toluene	Listed	Listed	Listed	Listed	Listed

US DEPARTMENT OF TRANSPORTATION

REPORTABLE QUANTITY (RQ)	DOT MARINE POLLUTANT	DOT SEVER MARINE POLLUTANT
Yes	No	No

U.S. DEPARTMENT OF HOMELAND SECURITY: This product does not contain any DHS chemicals.

Canada: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

This SDS complies with the requirements of Regulation (EC).

SECTION 16 - OTHER INFORMATION

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Research Products International Corp. shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. This product is sold for laboratory research and development purposes use only.