



## Safety Data Sheet

Revision Date: 08/20/18

www.restek.com

2 Letter ISO country code/language code: US/EN

### 1. IDENTIFICATION

**Catalog Number / Product Name:** 32022 / 608 Calibration Mix  
**Company:** Restek Corporation  
**Address:** 110 Benner Circle  
Bellefonte, Pa. 16823  
**Phone#:** 814-353-1300  
**Fax#:** 814-353-1309  
**Emergency#:** 800-424-9300 (CHEMTREC)  
703-527-3887 (Outside the US)  
**Email:** www.restek.com  
**Revision Number:** 8  
**Intended use:** For Laboratory use only

### 2. HAZARD(S) IDENTIFICATION

#### Emergency Overview:

GHS Hazard  
Symbols:



**GHS Classification:** Flammable Liquid Category 2  
Skin Corrosion/Irritation Category 2  
Specific Target Organ Systemic Toxicity (STOT) - Repeated Exposure Category 2  
Hazardous to the aquatic environment - Chronic Category 2  
Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 3

**GHS Signal Word:** Danger

**GHS Hazard:** Highly flammable liquid and vapour.  
Causes skin irritation.  
May cause drowsiness or dizziness.  
May cause damage to organs through prolonged or repeated exposure.  
Toxic to aquatic life with long lasting effects.

**GHS Precautions:**

**Safety Precautions:** Keep away from heat/sparks/open flames/hot surfaces. – No smoking.  
Ground/bond container and receiving equipment.  
Use explosion-proof electrical/ventilation and lighting equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
Wash hands and skin thoroughly after handling.  
Use only outdoors or in a well-ventilated area.  
Avoid release to the environment.  
Wear protective gloves/protective clothing/eye protection/face protection.

**First Aid Measures:** IF ON SKIN: Wash with plenty of soap and water.  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
Call a POISON CENTER or doctor/physician if you feel unwell.  
Specific treatment see section 4.  
If skin irritation occurs: Get medical advice/attention.  
Take off contaminated clothing and wash it before reuse.  
In case of fire: Use extinguishing media in section 5 for extinction.

Collect spillage.

**Storage:** Store in a well-ventilated place. Keep container tightly closed.  
Store in a well-ventilated place. Keep cool.  
Store locked up.

**Disposal:** Dispose of contents/container according to section 13 of the SDS.

**Single Exposure Target Organs:** Specific target organ toxicity - Single exposure - STOT SE 3: H336 May cause drowsiness or dizziness.

**Repeated Exposure Target Organs:** Specific target organ toxicity - Repeated exposure - STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure. (Minimum classification, No information to prove exclusion of certain routes of exposure)  
Specific target organ toxicity - Repeated exposure - STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure. (C >= 5 %; Minimum classification, No information to prove exclusion of certain routes of exposure)

### 3. COMPOSITION / INFORMATION ON INGREDIENT

Chemical Name	CAS #	EINEC #	% Composition
hexane	110-54-3	203-777-6	49.84
Toluene	108-88-3	203-625-9	49.84
4,4'-DDT	50-29-3	200-024-3	0.02
aldrin	309-00-2	206-215-8	0.02
heptachlor epoxide	1024-57-3	213-831-0	0.02
endrin	72-20-8	200-775-7	0.02
dieldrin	60-57-1	200-484-5	0.02
gamma-BHC	58-89-9	200-401-2	0.02
endosulfan sulfate	1031-07-8		0.02
heptachlor	76-44-8	200-962-3	0.02
endosulfan I	959-98-8		0.02
endrin aldehyde	7421-93-4		0.02
4,4'-DDE	72-55-9	200-784-6	0.02
alpha-BHC	319-84-6	206-270-8	0.02
beta-BHC	319-85-7	206-271-3	0.02
delta-BHC	319-86-8	206-272-9	0.02
endosulfan II	33213-65-9		0.02
4,4'-DDD	72-54-8	200-783-0	0.02

### 4. FIRST-AID MEASURES

**Inhalation:** Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately

**Eyes:** Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician.

**Skin Contact:** Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

**Ingestion:** Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS. Induce vomiting as a last measure. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal.

### 5. FIRE- FIGHTING MEASURES

**Extinguishing Media:** Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water may be ineffective but water spray can be used extinguish

	a fire if swept across the base of the flames. Water can absorb heat and keep exposed material from being damaged by fire. Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water spray or fog may also be effective for extinguishing if swept across the base of the fire. Water can also be used to absorb heat and keep exposed material from being damaged by fire.
<b>Fire and/or Explosion Hazards:</b>	Vapors may be ignited by heat, sparks, flames or other sources of ignition at or above the low flash point giving rise to a Class B fire. Vapors are heavier than air and may travel to a source of ignition and flash back
<b>Fire Fighting Methods and Protection:</b>	Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface. Use water spray/fog for cooling. Do not enter fire area without proper protection including self-contained toxic breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface. Use water spray/fog for cooling. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.
<b>Hazardous Combustion Products:</b>	Carbon dioxide, Carbon monoxide

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions and Equipment:</b>	Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this SDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill.
<b>Methods for Clean-up:</b>	Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

## 7. HANDLING AND STORAGE

<b>Handling Technical Measures and Precautions:</b>	Harmful or irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Use spark-proof tools and explosion-proof equipment
<b>Storage Technical Measures and Conditions:</b>	Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container(s) closed. Keep away from heat, sparks, and flame Keep away from sources of ignition

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### United States:

Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
hexane	110-54-3	1100 ppm IDLH (10% LEL)	1000 ppm	50 ppm TWA	500 ppm TWA; 1800 mg/m3 TWA
Toluene	108-88-3	500 ppm IDLH	None Known	50 ppm TWA; 188 mg/m3 TWA	200 ppm TWA; C 300 ppm

### Personal Protection:

<b>Engineering Measures:</b>	Local exhaust ventilation is recommended when generating excessive levels of vapours from handling or thermal processing.
<b>Respiratory Protection:</b>	Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.
<b>Eye Protection:</b>	Wear chemically resistant safety glasses with side shields when handling this

product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses. Have an eye wash station available.

**Skin Protection:**

Wear protective gloves. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color:	Colorless
Odor:	ModerateAromatic
Physical State:	No data available
pH:	Not applicable
Vapor Pressure:	No data available
Boiling Point (°C):	110.6 °C (HSDB) 68.73 °C (HSDB)
Flash Point (°F):	-8
Flammability:	Highly Flammable Extremely Flammable
Upper Flammable/Explosive Limit, % in air:	No data available
Lower Flammable/Explosive Limit, % in air:	No data available
Autoignition Temperature (°C):	480 deg C
Decomposition Temperature (°C):	No data available
Evaporation Rate:	2.24
Odor Threshold:	No data available
Solubility:	Negligible; 0-1%
Partition Coefficient: n-octanol in water:	No data available
VOC % by weight:	0
Molecular Weight:	No data available

## 10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	None known.
Materials to Avoid / Chemical Incompatibility:	Strong oxidizing agents
Hazardous Decomposition Products:	No data available

## 11. TOXICOLOGICAL INFORMATION

Routes of Entry:	Inhalation, Skin Contact, Eye Contact, Ingestion
Target Organs Potentially Affected By Exposure:	Eyes, Central nervous system stimulation, Respiratory Tract, Skin, Peripheral Nervous System, Liver
Chemical Interactions That Change Toxicity:	None Known

### Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:	Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.
Skin Contact:	Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Skin Absorption:	Harmful if absorbed through the skin. May cause severe irritation and systemic damage.
Eye Contact:	Contact with the eyes may cause moderate to severe eye injury. Eye contact may result in tearing and reddening, but not likely to permanently injure eye tissue. Temporary vision impairment (cloudy or blurred vision) is possible.
Ingestion Irritation:	Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.

### Long-Term (Chronic) Health Effects:

Carcinogenicity:	Contains a probable or known human carcinogen.
Reproductive and Developmental Toxicity:	Contains a known human reproductive and/or developmental hazard.
Inhalation:	Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs)
Skin Contact:	Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not

**Skin Absorption:**

likely to cause permanent damage.  
Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation and systemic damage

**Component Toxicological Data:****NIOSH:****Chemical Name****CAS No.****LD50/LC50**

n-Hexane

110-54-3

Dermal LD50 Rabbit 3000 mg/kg; Inhalation  
LC50 Rat 48000 ppm 4 h; Oral LD50 Rat 25  
g/kg

Toluene

108-88-3

Inhalation LC50 Rat : 49 gm/m<sup>3</sup>/4H; Inhalation  
LC50 Mouse : 400 ppm/24H; Oral LD50 Rat :  
636 mg/kg; Dermal LD50 Rabbit : 14100 uL/kg

**Component Carcinogenic Data:****OSHA:****Chemical Name****CAS No.**

No data available

**ACGIH:****Chemical Name****CAS No.**

Toluene

108-88-3

A4 - Not Classifiable as a Human Carcinogen

**NIOSH:****Chemical Name****CAS No.**

No data available

**NTP:****Chemical Name****CAS No.**

No data available

**IARC:****Chemical Name****CAS No.****Group No.**

Monograph 113 [in preparation];  
Supplement 7 [1987] (listed under  
Hexachlorocyclohexanes);  
Monograph 20 [1979]

58-89-9

Group 1

Monograph 113 [in preparation];  
Monograph 53 [1991];  
Supplement 7 [1987]

50-29-3

Group 2A

Monograph 117 [in preparation]  
(metabolized to dieldrin);  
Supplement 7 [1987]; Monograph  
5 [1974]

309-00-2

Group 2A

Monograph 117 [in preparation];  
Supplement 7 [1987]; Monograph  
5 [1974]

60-57-1

Group 2A

Monograph 79 [2001] (listed  
under Chlordane and  
Heptachlor); Supplement 7  
[1987]; Monograph 53 [1991]  
(listed under Chlordane and  
Heptachlor)

1024-57-3

Group 2B

Monograph 79 [2001];  
Monograph 53 [1991];  
Supplement 7 [1987]

76-44-8

Group 2B

Monograph 53 [1991] (listed  
under DDT and associated  
compounds)

72-55-9

Group 2B

Supplement 7 [1987] (listed under  
Hexachlorocyclohexanes)

319-84-6

Group 2B

Supplement 7 [1987] (listed under  
Hexachlorocyclohexanes)

319-85-7

Group 2B

Supplement 7 [1987] (listed under  
Hexachlorocyclohexanes)

319-86-8

Group 2B

Monograph 53 [1991] (listed

72-54-8

Group 2B

under DDT and associated compounds)

## 12. ECOLOGICAL INFORMATION

<b>Overview:</b>	Moderate ecological hazard. This product may be dangerous to plants and/or wildlife.
<b>Mobility:</b>	No data
<b>Persistence:</b>	No data
<b>Bioaccumulation:</b>	No data
<b>Degradability:</b>	No data
<b>Ecological Toxicity Data:</b>	No data available

## 13. DISPOSAL CONSIDERATIONS

<b>Waste Description of Spent Product:</b>	Spent or discarded material is a hazardous waste. Mixing spent or discarded material with other materials may render the mixture hazardous. Perform a hazardous waste determination on mixtures.
<b>Disposal Methods:</b>	Dispose of by incineration following Federal, State, Local, or Provincial regulations.
<b>Waste Disposal of Packaging:</b>	Comply with all Local, State, Federal, and Provincial Environmental Regulations.

## 14. TRANSPORTATION INFORMATION

<b>United States:</b>	
<b>DOT Proper Shipping Name:</b>	Flammable liquids, n.o.s. (Hexane, Toluene)
<b>UN Number:</b>	UN1993
<b>Hazard Class:</b>	3
<b>Packing Group:</b>	II

<b>International:</b>	
<b>IATA Proper Shipping Name:</b>	Flammable liquids, n.o.s. (Hexane, Toluene)
<b>UN Number:</b>	UN1993
<b>Hazard Class:</b>	3
<b>Packing Group:</b>	II

**Marine Pollutant:** Yes

Chemical Name	CAS#	Marine Pollutant	Severe Marine Pollutant
hexane	110-54-3	Y	N

## 15. REGULATORY INFORMATION

United States:					
Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
hexane	110-54-3	X	X	-	X
Toluene	108-88-3	X	X	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
DDT	50-29-3	Prop 65 Cancer
Aldrin	309-00-2	Prop 65 Cancer
Heptachlor epoxide	1024-57-3	Prop 65 Cancer
Dieldrin	60-57-1	Prop 65 Cancer
Lindane	58-89-9	Prop 65 Cancer
Heptachlor	76-44-8	Prop 65 Cancer
DDE	72-55-9	Prop 65 Cancer
DDD	72-54-8	Prop 65 Cancer
p,p'-DDT	50-29-3	Prop 65 Develop Tox
Endrin	72-20-8	Prop 65 Develop Tox
Heptachlor	76-44-8	Prop 65 Develop Tox
1,1-Dichloro-2,2-bis(p-chlorophenyl)ethylene	72-55-9	Prop 65 Develop Tox

Toluene	108-88-3	Prop 65 Develop Tox
p,p"-DDT	50-29-3	Prop 65 Rep Female
p,p"-DDT	50-29-3	Prop 65 Rep Male
1,1-Dichloro-2,2-bis(p-chlorophenyl)ethylene	72-55-9	Prop 65 Rep Male

#### State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
hexane	110-54-3	X	X	X	-
Toluene	108-88-3	X	X	X	X
4,4'-DDT	50-29-3				
aldrin	309-00-2				
heptachlor epoxide	1024-57-3				
endrin	72-20-8				
dieldrin	60-57-1				
gamma-BHC	58-89-9				
endosulfan sulfate	1031-07-8				
heptachlor	76-44-8				
endosulfan I	959-98-8				
endrin aldehyde	7421-93-4				
4,4'-DDE	72-55-9				
alpha-BHC	319-84-6				
beta-BHC	319-85-7				
delta-BHC	319-86-8				
endosulfan II	33213-65-9				
4,4'-DDD	72-54-8				

## 16. OTHER INFORMATION

**Prior Version Date:** 08/03/16

**Other Information:** Any changes to the SDS compared to previous versions are marked by a vertical line in front of the concerned paragraph.

**References:** No data available

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