# SAFETY DATA SHEET

## GHEMSERVIGE .....

#### 1. Identification

in identification			
Product identifier	Tri-allate Solution		
Other means of identification			
Item	S-13628K1		
Recommended use	For Laboratory Use Only		
Recommended restrictions	None known.		
Manufacturer/Importer/Supplier/I	Distributor information		
Manufacturer			
Company name	Chem Service, Inc.		
Address	660 Tower Lane		
	West Chester, PA 19380 United States		
Telephone	Toll Free	800-452-9994	4
	Direct	610-692-3026	
Website	www.chemservice.com		
E-mail	info@chemservice.com		
Emergency phone number	Chemtrec US	800-424-9300	
	Chemtrec outside US	+1 703-527-3	887
2. Hazard(s) identification			
Physical hazards	Flammable liquids		Category 2
Health hazards	Acute toxicity, dermal		Category 5
	Skin corrosion/irritation		Category 2
	Specific target organ toxicity, si	ngle exposure	Category 3 narcotic effects
Environmental hazards	Hazardous to the aquatic environ hazard	onment, acute	Category 1
	Hazardous to the aquatic enviro	onment,	Category 1
OSHA defined hazards	Not classified.		
Label elements			
	- トックノート ノーマン	🛋 🖊	

Signal word Danger **Hazard statement** Highly flammable liquid and vapor. May be harmful in contact with skin. Causes skin irritation. May cause drowsiness or dizziness. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects. **Precautionary statement** Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/eye protection/face protection. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Response If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish. Collect spillage. Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Storage Keep cool. Store locked up.

Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.
Supplemental information	None.

## 3. Composition/information on ingredients

#### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Isooctane	2,2,4-Trimethylpentane	540-84-1	99 - 100
Tri-allate		2303-17-5	0.01

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

## 4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical advice/attention if you feel unwell. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical advice/attention if you feel unwell.
Most important symptoms/effects, acute and delayed	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Direct contact with eyes may cause temporary irritation. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.
5. Fire-fighting measures	
Suitable extinguishing media	Water fog. Foam. Carbon dioxide (CO2). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapor.

### 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways.
	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.
	Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases. Use appropriate containment to avoid environmental contamination.
7. Handling and storage	
Precautions for safe handling	Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.
	For additional information on equipment bonding and grounding, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code".
Conditions for safe storage, including any incompatibilities	Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).
8. Exposure controls/perso	onal protection

# Occupational exposure limits

US. OSHA Table Z-1 Limits for Air	Contaminants (29 CFR 1910.	1000)	
Components	Туре	Value	
Isooctane (CAS 540-84-1)	PEL	2350 mg/m3	
		500 ppm	

Components	Туре	Value
Isooctane (CAS 540-84-1)	Ceiling	1800 mg/m3
		385 ppm
	TWA	350 mg/m3
		75 ppm
Biological limit values	No biological exposure limits noted fo	r the ingredient(s).
Appropriate engineering controls	Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.	
Individual protection measures	, such as personal protective equipme	ent
Eye/face protection	Wear safety glasses with side shields	
Skin protection		
Hand protection	Wear appropriate chemical resistant g supplier.	ploves. Suitable gloves can be recommended by the glove
Other	Wear appropriate chemical resistant of	clothing. Use of an impervious apron is recommended.
Respiratory protection	limits (where applicable) or to an acce	n airborne concentrations below recommended exposure eptable level (in countries where exposure limits have not rator must be worn. Chemical respirator with organic vapor
Thermal hazards	Wear appropriate thermal protective of	lothing, when necessary.
General hygiene considerations		serve good personal hygiene measures, such as washing eating, drinking, and/or smoking. Routinely wash work remove contaminants.

# 9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Liquid.
Color	Not available.
Odor	Not available.
Odor threshold	Not available.
рН	Not available.
Melting point/freezing point	-161.41 °F (-107.45 °C) estimated
Initial boiling point and boiling range	210.63 °F (99.24 °C) estimated
Flash point	40.1 °F (4.5 °C) estimated
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or exp	losive limits
Flammability limit - lower (%)	1.1 % estimated
Flammability limit - upper (%)	4.7 % estimated
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	59.93 hPa estimated
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.

Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	784 °F (417.78 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	0.69866 g/cm3 estimated
Explosive properties	Not explosive.
Flammability class	Flammable IB estimated
Oxidizing properties	Not oxidizing.
Specific gravity	0.7 estimated

# 10. Stability and reactivity

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

# 11. Toxicological information

## Information on likely routes of exposure

Inhalation	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Prolonged inhalation may be harmful.
Skin contact	May be harmful in contact with skin. Causes skin irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Headache. May cause drowsiness and dizziness. Nausea, vomiting. Skin irritation. May cause redness and pain.

#### Information on toxicological effects

Acute toxicity

In high concentrations,	, vapors are anesthetic and may cause headache, fatigue, dizzines	s and
central nervous system	n effects. May be harmful in contact with skin. Narcotic effects.	

Components	Species	Test Results
Isooctane (CAS 540-84-1)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Rat	> 33.52 mg/l, 4 Hours
Oral		
LD50	Rat	> 5000 mg/kg
Tri-allate (CAS 2303-17-5)		
<u>Acute</u>		
Oral		
LD50	Rat	200 mg/kg
* Estimates for product ma	y be based on additional compor	ent data not shown.
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye	Direct contact with eyes may cause temporary irritation.	

Respiratory or skin sensitization	1
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
US. OSHA Specifically Regu Not listed.	Ilated Substances (29 CFR 1910.1001-1050)
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause drowsiness and dizziness.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful.
12 Ecological information	

### 12. Ecological information

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Components		Species	Test Results
Tri-allate (CAS 2303-1	7-5)		
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	0.06 - 0.1 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	0.44 - 0.87 mg/l, 96 hours

\* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

#### Bioaccumulative potential

Partition coefficient n-o	ctanol / water (log Kow)	
Isooctane	5.18	
Tri-allate	4.6	
Mobility in soil	No data available.	
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.	

### 13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

DOT
-----

UN number	UN1262
UN proper shipping name	Octanes, solution (Isooctane RQ = 1000 LBS)
Transport hazard class(es)	
Class	3
Subsidiary risk	-

Label(s)	3
Packing group	II
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB2, T4, TP1
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242
ΙΑΤΑ	
UN number	UN1262
UN proper shipping name	Octanes solution (Isooctane)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	Yes
ERG Code	3H
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo	Allowed.
aircraft	
Cargo aircraft only	Allowed.
IMDG	
UN number	UN1262
UN proper shipping name	OCTANES SOLUTION (Isooctane)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	П
Environmental hazards	
Marine pollutant	Yes
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to	Not established.
Annex II of MARPOL 73/78 and	
the IBC Code	
DOT	



## Marine pollutant



IMDG Regulated Marine Pollutant. DOT Regulated Marine Pollutant.

# 15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. One or more components are not listed on TSCA.
TSCA Section 12(b) Export	Notification (40 CFR 707, Subpt. D)
Not regulated. CERCLA Hazardous Substa	nce List (40 CFR 302.4)
Isooctane (CAS 540-84-7 Tri-allate (CAS 2303-17-5 SARA 304 Emergency relea	5) Listed.
Not regulated.	ulated Substances (29 CFR 1910.1001-1050)
Superfund Amendments and Re	eauthorization Act of 1986 (SARA)
Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No
SARA 302 Extremely hazard Not listed.	dous substance
SARA 311/312 Hazardous chemical	No
SARA 313 (TRI reporting) Not regulated.	
Other federal regulations	
-	n 112 Hazardous Air Pollutants (HAPs) List
Isooctane (CAS 540-84-7 Clean Air Act (CAA) Sectior	ו) ו 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.	
Safe Drinking Water Act (SDWA)	Not regulated.
US state regulations	
US - New Jersey RTK - Sub Isooctane (CAS 540-84-1 Tri-allate (CAS 2303-17-1	1)
	ubstances. CA Department of Justice (California Health and Safety Code Section 11100)
	hemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd.
Isooctane (CAS 540-84-7 US. Massachusetts RTK - S	ubstance List
-	Community Right-to-Know Act
Tri-allate (CAS 2303-17-	5)

#### US. Pennsylvania RTK - Hazardous Substances

Not regulated.

#### US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

#### **US. Rhode Island RTK**

Isooctane (CAS 540-84-1) Tri-allate (CAS 2303-17-5)

#### **US. California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

#### **International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

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

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

Issue date	09-01-2015
Version #	01
NFPA ratings	Health: 2 Flammability: 3 Instability: 0

The above information is believed to be correct on the date it was last revised and must not be considered all inclusive. The information has been obtained only by a search of available literature and is only a guide for handling the chemicals. OSHA regulations require that if other hazards become evident, an upgraded SDS must be made available to the employee within three months. RESPONSIBILITY for updates lies with the employer and not with CHEM SERVICE, Inc.

Persons not specifically and properly trained should not handle this chemical or its container. This product is furnished FOR LABORATORY USE ONLY! Our products may NOT BE USED as drugs, cosmetics, agricultural or pesticide products, food additives or as household chemicals.

This Safety Data Sheet (SDS) is intended only for use with Chem Service, Inc. products and should not be relied on for use with materials from any other supplier even if the chemical name(s) on the product are identical! Whenever using an SDS for a solution or mixture the user should refer to the SDS for every component of the solution or mixture. Chem Service warrants that this SDS is based upon the most current information available to Chem Service at the time it was last revised. THIS WARRANTY IS EXCLUSIVE, AND CHEM SERVICE, INC. MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. This SDS is provided gratis and CHEM SERVICE, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR CONTINGENT DAMAGES.

Copyright © 2000-2014 Chem Service, Inc. All rights reserved except that this SDS may be printed for the use of a customer or prospective customer of Chem Service, Inc provided the entire SDS is printed. The SDS may not be placed in any database or otherwise stored or distributed in electronic or any other form.

This product is furnished FOR LABORATORY USE ONLY.