GeneCust
Custom Services for Research

Gene Synthesis

GeneCust

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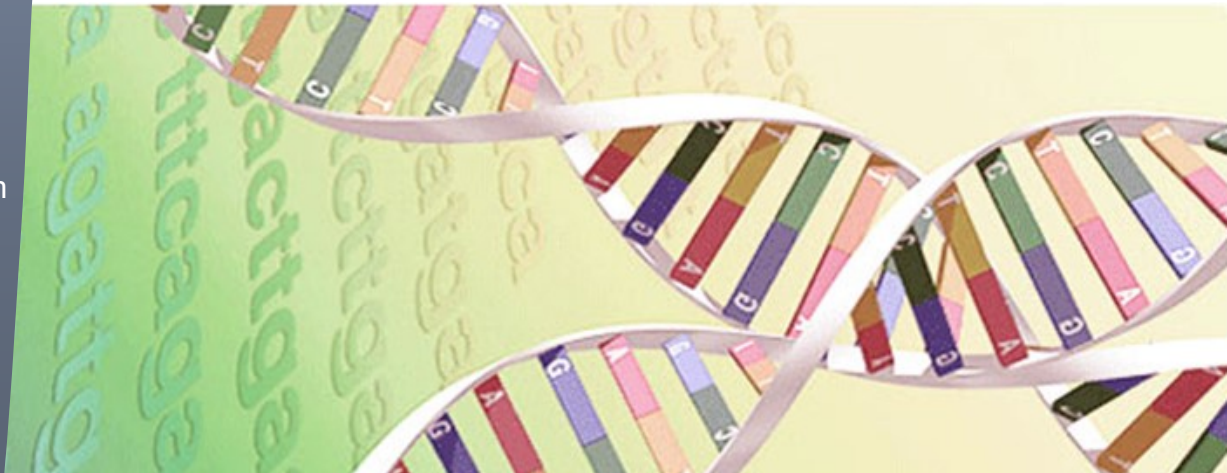
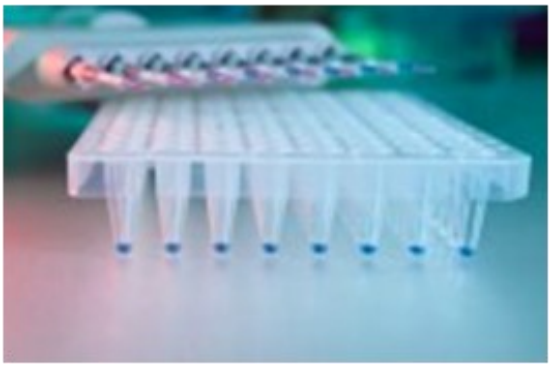


Gene Synthesis

Leading Supplier

With highly experienced staff biologists dedicated to gene synthesis, GeneCust has become of the largest suppliers for gene synthesis services in Europe. For the past 15 years, GeneCust has synthesized thousands of genes to customers worldwide. Benefiting from our oligo expertise and DNA sequencing knowledge, GeneCust offers gene synthesis at the most affordable prices. So far, we have satisfied and impressed our customers from leading biotechnology, pharmaceutical industries to famous academic institutions.



Gene Synthesis & Related Services

Overview

- **Custom Gene Synthesis**. De novo synthesis of custom DNA sequence with 100% accuracy guaranteed.
- **Rush Gene Synthesis**. Delivers your custom gene in as few as 7 days (bussiness day) to accelerate your research in a rush way.
- **Gene Fragment Synthesis**. Provide synthesized gene sequence in the form of double-strand DNA fragments instead of cloning into vector. More flexible for downstream applications.
- **Cloning and Mutagenesis**. Clone your synthetic sequence into custom vectors or perform site-directed mutagenesis from existing template. Highly flexible to accommodate your specific project requirements.
- **Gene Variant Libraries**. Provide gene variant libraries with particular changes in designed position or combination of changes in different positions. Especially useful for high-throughput screening for applications such as protein engineering.
- **Plasmid Preparation**. Small to large scale high quality plasmid preparation, including endotoxin-free plasmids for transformation, transfection or in vitro transcription.

Gene Synthesis

Custom Gene Synthesis

Advantages

- **100% accuracy guaranteed**. Gene delivered with sequencing verification.
- **Any gene in any vector**. Clone your gene into any custom vector for free.
- **Deliver 2 x 4 µg of lyophilized plasmid** without extra charge.
- **Free codon optimization**. Optimize any DNA sequence to increase protein expression in given host with our proprietary program.
- **Cost effective**. Competitive prices to save your budget.

Genes are cloned into our standard vectors **pUC-SP, pUC57 (AmpR or KanR) or pBluescriptIISK+**.
If customer desires to clone the gene into specified cloning vehicle, there is no additional fee.
Following vectors are in stock at GeneCust : **pET vectors, pET-DUET, pCDNA3.1, pCI-neo, pGEX, pFastBac, pCOLD, pEGFP... Please ask for complete list, more than 110 vectors available**

Size of gene	Price (euro)	Timeline
Gene < 3 kb	0.19 euro/ base pair	0-1 kb : 10 business days 1-2 kb : 12 business days 3 kb : 15 business days
Gene 3kb - 5 kb	0.24 euro/ base pair	4-5 kb : 20 business days
Gene > 5 kb	0.30 euro/ base pair	Please inquire
Custom Cloning Fee	free	3 business days
Minimum Synthesis Fee	60 euros	10 business days

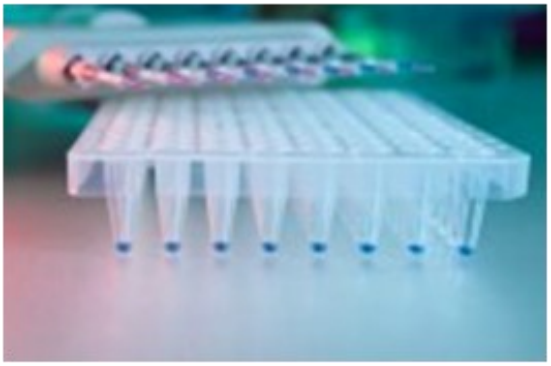
Notes

1. The price and turnaround time are based on typical orders, complex sequences may take longer;
2. Delivery includes 2 x 4 µg of lyophilized plasmid containing your gene insert, sequencing chromatograms covering your gene (electronic), construct map for the plasmid (electronic) and certificate of analysis (electronic).

Gene Synthesis

RUSH Gene Synthesis Service

Need gene fast ? Then try our EXPRESS Gene Synthesis service. We deliver your custom designed gene sequence in as few as 7 business days. This service is not applicable to genes with complex sequences and is limited to genes <2kb. Genes are cloned into puc57 or pBluescriptIISK+ vectors.



Deliverables

- 4 µg of lyophilized pUC57 containing your gene insert
- Sequencing chromatograms covering your gene (electronic)
- Complete sequence for your gene inserted into standard vector (electronic)
- Quality assurance certificate

Size of gene	Price (euro)	Timeline
100—1000 bases	0.70 euro / base pair (minimum synthesis fee apply)	7 business days
1001—2000 bases	0.70 euro / base pair	12 business days
Minimum Synthesis Fee	Upon request	

Notes
1. The price and turnaround time are based on typical orders, complex sequences may take longer; 2. Free standard vectors including: pUC57-Amp, pUC-SP, pUC57-Kan and pBluescript II SK+;

Gene Synthesis

Gene Fragments Synthesis Service

GeneCust's gene fragments synthesis service providing double-strand DNA fragments instead of gene fragments cloned into vectors in only a few days, especially useful for downstream application such as CRISPR-mediated genome editing, use as qPCR standards, and more.

Advantages

- **Better, faster and more affordable**.
- **Deliver up to 400 ng of lyophilized double-strand DNA** without extra charge.
- **Free codon optimization**. Optimize any DNA sequence to increase protein expression in given host with our proprietary program.
- **Flexible** for downstream applications such as CRISPR-mediated genome editing, use as qPCR standards, and more.

Size of gene	Price (euro)	Timeline
125 — 500 bp	please inquire	7-9 business days
501-750 bases	please inquire	7-9 business days
751—1000 bases	please inquire	8-10 business days
1001—1250 bases	please inquire	9-12 business days
>1250 bases	please inquire	please inquire

Notes

1. The price and turnaround time are based on typical orders, complex sequences may take longer;
2. **Provided DNA fragment with sequencing verification, but NOT 100% accuracy guaranteed;**

Gene Synthesis

Gene Variant Libraries

Gene variant libraries service is to provide a pool of similar sequences with changes in particular position or combination of changes. The library can be delivered either in pooled sequences or independent plasmids containing each gene insert. Gene variant libraries are especially useful for screening in a wide range of research field.

Advantages

- **Flexible**. Synthetic product can be delivered either in pooled sequences or independent plasmids containing each gene insert.
- **Fidelity**. 100% sequence accuracy guarantee if provided with independent plasmids.
- **Sub-cloning into your own vector** available.
- **Free codon optimization**. Optimize any DNA sequence to increase protein expression in given host with our proprietary program.
- ♦ **Cost effective**. Competitive prices to save your budget.

Price and turnaround time

Inquired by projects

Gene Synthesis

Cloning and Mutation Services

GeneCust offers gene cloning and site-directed mutagenesis services to save your time from labor intensive and time consuming lab working. Our cloning technology can bundle gene synthesis with cloning into your own vector instead of standard vector, or you gene cloning projects from your own templates and vectors.

Advantages
• **Subcloning bundled with gene synthesis**. • **With our seamless cloning technology**. Extra discount for bulk fragments cloning into the same vector.

Subcloning	Price (euro)	Timeline
Single construct	100 euros / construct	7 business days
Bulk fragments (>10) into one vector with the same sites	100 euros for the first construct, 66 euros each for the other ones	10 business days

Notes
1. The price and turnaround time are based on non-complex sequences <10,000 bp; 2. Extra charge is required for verification of the template or vector sequences;

Mutagenesis	Price (euro)	Timeline
1 mutation with in 1 kb	120 euros / construct	12 business days
2-9 mutations	66 euros per point in 1 kb length	12 business days
>10 mutations	Please inquire	12 business days

Notes
1. The price and turnaround time are based on non-complex sequences; 2. One mutation is defined as any combination of mutations within a 10-base frame.

Gene Synthesis

Plasmid DNA Preparations

GeneCust provides flexible plasmid DNA preparation services from 100 ug to 100 mg, in either molecular grade or endotoxin-free plasmid. Which will save your time and free your labor.

Advantages
• **Flexible**. Molecular grade plasmid or endotoxin-free plasmid available. Scale from 100 µg to 100 mg. • **Save Time**. Fast turnaround time, free your labor. • **Most convenient**. Combine with our gene synthesis, custom cloning, or mutagenesis services. • **Cost effective**. Competitive prices to save your budget.

Description	Quantity	Price (euros)
Plasmid DNA preparation, reeserach grade or endotoxine free	100 µg to 100 mg	Please inquire

Codon Optimization

Codon and RNA Secondary Structure Optimization service:

We will provide free optimization service if you order the optimized gene as gene synthesis service. GeneCust has developed a proprietary algorithm to optimize sequences for protein expression using either your own codon usage table or those from publicly available codon usage database. This algorithm converts your amino acid sequence into a DNA sequence with overall codon usage similar to a specified organism, and also optimizes the RNA secondary structure. Using our optimized synthetic genes, many of our customers have reported dramatic increase on protein expression.

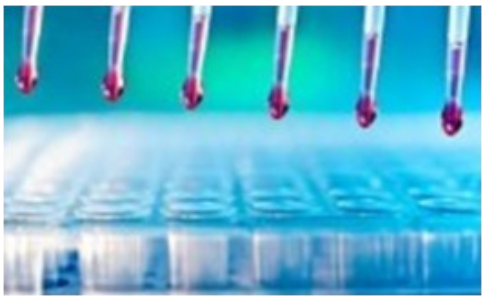
You may submit your sequence for optimization and synthesis by email. In your message, please include:

- Protein or ORF DNA sequence.
- Intended host expression system.
- Restriction enzyme cutting sites at both ends.
- Restriction enzyme cutting sites that you want to avoid in the optimized sequence.
- Restriction enzyme cutting sites that you want to keep in the original sequence

We always submit optimized sequences for customer validation before we proceed with synthesis.
Customer can always ask for changes.

Application Examples of Gene Synthesis

- Codon optimization to boost protein expression.
- Replace PCR cloning.
- Large-scale production of cDNA fragments for microarray chip.
- Clone humanized mouse antibodies or recombinant antibodies.
- Synthesize cDNAs for which the corresponding mRNA sources are difficult to obtain.
- Synthesize predicted genes/cDNAs.
- Synthesize genes or cDNAs that are difficult to clone.
- Synthesize alternatively spliced gene variants, SNPs, or any other variant type.
- Design gene therapy vector or genes.
- Design DNA vaccines.
- Design your own genes/cDNAs (deletion, mutation, and rearrangement etc.).
- Modify your gene for structure-function studies in enzymology and receptor biology.



Guarantee Commitment

GeneCust offers a 100% DNA Sequencing Accuracy Guarantee. Each gene is confirmed base-by-base by sequencing and is guaranteed to match 100% with your requested sequence.

- Quick Turnaround Guarantee
- Lowest Price Guarantee
- Absolute Confidentiality Guarantee

GeneCust will sign non-disclosure or confidentiality agreement upon request. GeneCust is solely a service provider for gene synthesis. After three months, copy of your synthetic gene will be destroyed.

Gene Synthesis Terms and Conditions

Terms :

GeneCust will deliver to customer 2 x 4.0 µg plasmid DNA containing gene of interest. Synthetic DNA will be cloned in pUC or pBluescript vector and provided in lyophilized powder form. Along with the final gene product, GeneCust will provide chromatogram sequencing results, gene report, alignment file, complete nucleotide sequence of the plasmid (cloning vector) including the sequence of the gene insert, and restriction digestion analysis results. All these documents will be sent to you electronically.
No gene synthesis is initiated without a PO number. GeneCust accepts wire in payment. Payment term is net 30 days.

High GC Content Genes and Highly Repetitive Genes :

In case of genes with high GC content (including regional high GC content genes), as well as highly repetitive genes, GeneCust reserves the right to deliver genes within a more reasonable time frame. The new time frame will be discussed with customer prior to start of gene synthesis. GeneCust may also refuse to accept any order by notifying customer orally or by written notice if the order is technically difficult to accomplish.

Custom Cloning Vehicle :

GeneCust can priovide specific vectors (list avilable on website). If not vailable, then customer can provide his vector. Customer must provide detailed sequence information pertaining customer vector. Any incorrect or false information provided by customer may lead to significant delay of the project. In this case, GeneCust is not responsible for the delay or any consequences caused by the delay.
If subcloning fails due to circumstances beyond control, GeneCust will deliver the final gene product in pUC57.

Genes with Expression Toxicity :

In the event that a designed DNA fragment is toxic to the E.coli host in which it is grown, GeneCust reserves the right to provide 20ug of sequence-verified full length PCR fragment in place of plasmid DNA. Customer agrees to pay the full invoice amount.

Genes that Fail To Be Synthesized in Full Length in Standard Vector or as a PCR Fragment :

GeneCust makes best effort to synthesize the full length gene in our standard vector pUC57 or pBluescriptIISK+. Should GeneCust be unsuccessful in generating the full-length sequence in the standard vector or as a full length PCR fragment (due to sequence instability, toxicity, GC rich areas, repeats, etc.), client is not obligated to make ANY payment to GeneCust. Should client be willing to receive sequence-verified PCR fragments, GeneCust reserves the right to ask a proportion of the original price (up to 50%) to cover labour and material cost.

Patents :

GeneCust serves as a service provider and offers synthesis services of sequences provided by the customer. It is the sole responsibility of customer to verify whether their respective work is result of any infringements of any patents. GeneCust expressly disclaims any liability in this regard.

Inspection Policy :

Upon receipt of shipped goods, customer shall inspect the shipment promptly for damages, shortages and correct identity of product. Any product that is not identical to the requested sequence will be replaced or authorized for return and credit, at our option. Any claims must be submitted within 3 months of shipment.

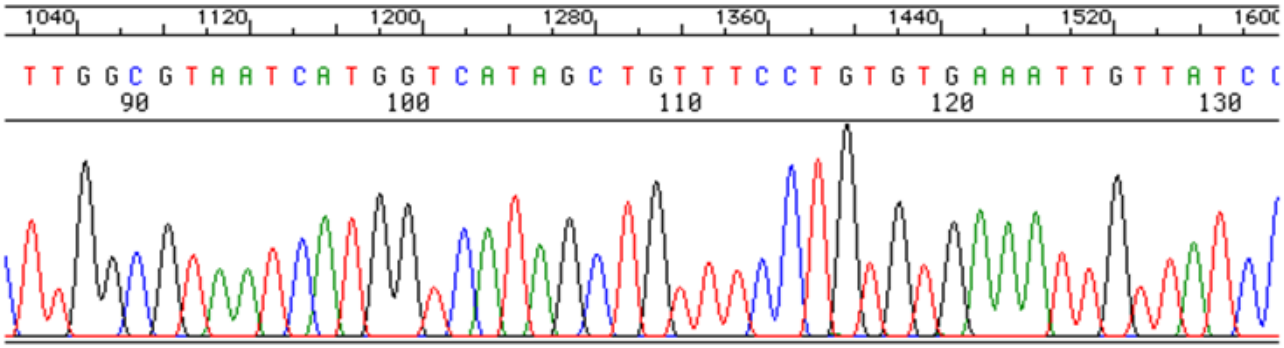
Warranty :

GeneCust guarantees 100% accuracy and match of genes requested. Any claims must be submitted within 3 months of shipment. At the time of shipment, GeneCust keeps a single copy of the gene for unexpected incidents and/or disputes. After 3 months, this copy of the gene will be destroyed permanently. GeneCust reserves the right to refuse handling disputes after period of 3 months.

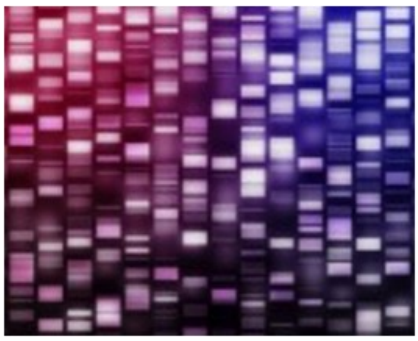
Cancellations :

For any genes, customer may cancel the order after reaching an agreement with GeneCust.

1. If GeneCust has received the order, but has not initiated the project, customer is entitled to cancellation of the order without any penalty.
2. If GeneCust has prompted oligo synthesis, but not cloning and/or thereafter, customer may cancel the order, however, customer is obliged to pay 25% of the original price to cover labour and material cost.
3. If GeneCust has prompted oligo synthesis, and has started cloning and/or thereafter, customer may cancel the order, however, after agreement with GeneCust Customer is obliged to pay penalty cost, depending on the stage or status of the project.
4. If GeneCust has obtained the correct sequence within specified time frame, customer may cancel the order, however, with full amount paid to GeneCust .



How to order



Request a quote by email at info@genecust.com
Download Gene Synthesis Order Form on www.genecust.com

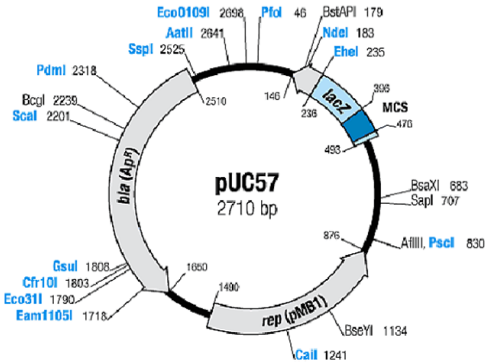
Email Order Form at info@genecust.com
Or send it by fax at +33222449107

Send all technical informations (sequences) by email only.

Instructions for reconstitution

1. Before opening the tube containing the DNA, please briefly centrifuge the tube. Lyophilized DNA could attach to the wall of the tube. Opening without centrifugation could cause DNA loss.

2. The lyophilized polynucleotide is stable at -20°C for at least 1 year. Polynucleotide dissolved in TE is stable for at least 6 months at -20°C or 4°C. Polynucleotide dissolved in water is stable for at least 6 months at -20°C in the absence of nucleases. Be sure the water used is at neutral pH to avoid depurination. Polynucleotide dissolved in water is NOT STABLE at 4°C.



3. Recommended protocols for re-plating

A) Re-suspend lyophilized polynucleotide (4ug) in 40ul of 10mM Tris (pH 8.5). Final concentration is ~100ng/ul. This is the original stock. Please note, 4ug is an approximate amount. To accurately determine the quantity of DNA present, please measure by optical density at OD260nm.
B) In a new microcentrifuge tube, make a 1: 10 dilution of original stock in 10mM Tris (pH 8.5). This is 1:10 diluted stock.
C) To plate DNA, transform 2ul of original stock DNA and 2ul 1:10 diluted stock DNA into appropriate E.coli competent cells. Incubate mixture on LB agar plates (with desired antibiotic selection) at 37°C for overnight.

D) Select a well separated, SINGLE colony and inoculate in LB medium with desired antibiotic selection for large culture.
NOTE: IT IS IMPORTANT TO SELECT ONLY A SINGLE COLONY.
E) Purify DNA from large culture. Verify sequences and continue with project of interest.

If you encounter any problems, please do not hesitate to contact us. We will be more than happy to assist you.

GeneCust
Custom Services for Research

Material Safe Data Sheet

Date Created	2017/09/29
Date Updated	2017/09/29
Version	V1

Section 1- Product Information

Product Name:	Synthetic gene
Product Cat. No.:	Not available

Section 2- Composition / Information on Ingredients

Substance / Preparation:	Substance
Ingredient Name	Synthetic gene
CAS No.	No
SARA 313	No

Section 3- Hazards Identification

HMIS Rating	
Health	0
Flammability	0
Reactivity	0
NFPA Rating	
Health	0
Flammability	0
Reactivity	0

For additional information on toxicity, please refer to Section 11.

Section 4- First Aid Measures

Oral Exposure	If swallowed, wash out mouth with water provided person is conscious.Call a physician.
Inhalation Exposure	If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.
Dermal Exposure	In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.
Eye Exposure	In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5- Fire Fighting Measures

Flash Point	Not available
Autoignition Temp	Not available
Flammability	Not available
Extinguishing Media	
Suitable	Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.
Fire Fighting	
Protective Equipment	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s)	Emits toxic fumes under fire conditions

Section 6- Accidental Release Measures

Procedure to Be Followed in Case of Leak or Spill	Evacuate area
Procedure(s) of Personal Precaution(s)	Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves
Methods for Cleaning Up	Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7- Handling and Storage

Handling	
User Exposure	Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.
Storage	Storage at -20°C
Suitable	Keep tightly closed.

Section 8- Exposure Controls/Personal Protection Equipment

Engineering Controls	Me Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protective Equipment	
Respiratory	Not available
Other	Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.
General Hygiene Measures	Wash thoroughly after handling

Section 9- Physical and Chemical Properties

Appearance	
Physical State	Lyophilized powder
Property	
Molecular Weight	Not available
pH	Not available
BP/BP Range	Not available
MP/MP Range	Not available
Freezing Point	Not available
Vapor Pressure	Not available
Vapor Density	Not available
Saturated Vapor Conc.	Not available
SG/Density	Not available
Bulk Density	Not available
Odor Threshold	Not available
Volatile%	Not available
VOC Content	Not available
Water Content	Not available
Solvent Content	Not available
Evaporation Rate	Not available
Viscosity	Not available
Surface Tension	Not available
Partition Coefficient	Not available
Decomposition Temp.	Not available
Flash Point	Not available
Explosion Limits	Not available
Flammability	Not available
Autoignition Temp	Not available
Refractive Index	Not available
Optical Rotation	Not available
Miscellaneous Data	Not available
Solubility	Not available

Section 10- Stability and Reactivity

Stability	
Stable	Stable
Hazardous Decomposition Products	
Hazardous Decomposition Products	Nature of decomposition products not known

Section 11- Toxicological Information

Route of Exposure	
Skin Contact	May cause skin irritation
Skin Absorption	May be harmful if absorbed through the skin
Inhalation	Material may be irritating to mucous membranes and upper respiratory tract, May be harmful if inhaled.
Ingestion	May be harmful if swallowed
Conditions Aggravated by Exposure	The toxicological properties have not been thoroughly investigated.

Section 12- Ecological Information

Eco-toxicity

Toxicity of The Products of The product itself and its products of degradation are not toxic. Biodegradation

Section 13- Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation	Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14- Transport Information

DOT	
Proper Shipping Name	None
Non-Hazardous for Transport	This substance is considered to be non-hazardous for transport.
IATA	
Non-Hazardous for Air Transport	Non-hazardous for air transport

Section 15- Regulatory Information

United States Regulatory information	
SARA Listed	No
Canada Regulatory Information	
WHMIS Classification	This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL	No
NDSL	No

Section 16- Other Information

Disclaimer	For *in vitro* research use only.

GeneCust corporation MSDS is believed to be correct but only used as a guide for experienced personnel, GeneCust shall not be held liable for any damage resulting from the handling or from contact with the above product.

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Thank you for your time.