SDS No.1021-59035 Date September 28, 2018 1/1 page

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : Hydrocarbon kit NAME OF SUPPLIER : GL Sciences Inc.

ADDRESS : 22-1 Nishishinjuku 6-chome Shinjuku-ku Tokyo 163-1130, Japan

CHARGE SECTION : International Sales Section

TELEPHONE No. : +81-3-5323-6620 FACSIMILE No. : +81-3-5323-6621 PRODUCT No. : 1021-59035 SDS No. : 1021-59035

Research use only.

This product is a "Kit", and this includes the following products.

Please refer to the SDS of each product for the hazard information of contents.

SDS No. 1021-41260 n-Hexacosane
 SDS No. 1021-41280 n-Octacosane
 SDS No. 1021-41300 n-Triacontane

4) SDS No. 1021-41320 n-Dotriacontane

5) SDS No. 1021-41340 n-Tetratriacontane
 6) SDS No. 1021-41360 n-Hexatriacontane
 7) SDS No. 1021-41380 n-Octatriacontane

8) SDS No. 1021-41400 n-Tetracontane

SDS No.1021-41260 Revised date September 28, 2018 1/4 page

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : n-Hexacosane
NAME OF SUPPLIER : GL Sciences Inc.

ADDRESS : 22-1 Nishishinjuku 6-chome Shinjuku-ku Tokyo 163-1130, Japan

CHARGE SECTION : International Sales Section

TELEPHONE No. : +81-3-5323-6620 FACSIMILE No. : +81-3-5323-6621

PRODUCT No. : 1021-41260, 1021-59035

SDS No. : 1021-41260

Research use only.

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION : Classification not possible

HAZARDS SYMBOL : --SIGNAL WORD : --HAZARD STATEMENTS : ---

HAZARD INFORMATIONS : May cause respiratory tract irritation if inhaled.

May cause eye, skin and mucous irritations if contact with.

May be harmful if ingested.

May induce damage to the lung through prolonged or repeated exposure.

MOST IMPORTANT HAZARDS : No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY : n-Hexacosane

SYNONYMS : --CONTENT : 99 %
CHEMICAL FORMULA : C26H54
CAS RN : 630-01-3
TSCA INVENTRY : Listed
EINECS No. : Not listed

4. FIRST AID MEASURES

GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable

dust and/or fumes, use self-contained breathing apparatus and dust

impervious protective suit. Use personal protective equipment.

INHALATION : Move victim to fresh air and gargle. If breathing is difficult, give oxygen.

If irritation persists, consult a physician.

SKIN CONTACT : Remove contaminated clothes and shoes, rinse skin with plenty of water or

shower. Use soap to help assure removal. If irritation persists, consult a

physician.

EYE CONTACT : Remove any contact lenses at once. Flush eyes well with flooding large

amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a

physician.

INGESTION : Rinse mouth, give plenty of water to vomit. Never give anything by mouth to an

unconscious person. Consult a physician

4. FIRST AID MEASURES

GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable

dust and/or fumes, use self-contained breathing apparatus and dust

impervious protective suit. Use personal protective equipment.

INHALATION : Move victim to fresh air and gargle. If breathing is difficult, give oxygen.

If irritation persists, consult a physician.

SKIN CONTACT : Remove contaminated clothes and shoes, rinse skin with plenty of water or

shower. Use soap to help assure removal. If irritation persists, consult a

PRODUCT NAME: n-Hexacosane

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EYE CONTACT : Remove any contact lenses at once. Flush eyes well with flooding large

amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a

physician.

INGESTION : Rinse mouth, give plenty of water to vomit. Never give anything by mouth to an

unconscious person. Consult a physician.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA : Carbon dioxide, dry chemical powder, foam, water spray FIRE & EXPLOSION HAZARDS : Toxic and irritating dust, fumes or smoke may be emitted.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS

: Fireman should wear normal protective equipment (full bunker gear) and

positive-pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS : Avoid raising dust and avoid contact with skin and eyes.

In case of insufficient ventilation, wear suitable respiratory equipment.

ENVIRONMENTAL PRECATIONS : Prevent spills from entering sewers, watercourses or low areas.

Comply with local disposal regulations.

METHODS FOR CLEANING UP : Do not touch spilled material without suitable protection. After material is

completely picked up, wash the spill site with soap and water and ventilate the area. Pull all wastes in a plastic bag for disposal and seal it tightly. Remove,

clean, or dispose contaminated clothing.

7. HANDLING AND STORAGE

HANDLING : Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated

exposure. Handle this product with appropriate protective equipments.

STORAGE : Store away from sunlight in well-ventilated dry place at room temperature.

Keep the product in an original box after use it.

INCOMPATIBLE PRODUCTS : Strong oxidizers and strong acids

8. EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING MEASURES : Use exhaust ventilation to keep airborne concentrations below exposure limits.

Use adequate ventilation.

VENTILATION : Local Exhaust ; Recommended, Mechanical(General) ; Recommended

PERSONAL PROTECTION

RESPRATORY PROTECTION : Safety mask

HAND PROTECTION : Chemical resistant gloves
EYE PROTECTION : Safety glasses(goggles)
SKIN PROTECTION : Protective clothing

CONTROL PARAMETERS

OSHA PEL : Not established

NIOSH REL : Not established

ACGIH : Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE : White – nearly white PHYSICAL STATE : Solid or powder ODOR : No data available pH : No data available BOILING POINT : No data available

MELTING POINT : 56 - 58 °C

FLASH POINT : No data available

FLAMMABILITY(solid, gas) : >110 °C

AUTOIGNITION TEMPERATURE : No data available VAPOR PRESSURE : No data available SPACIFIC GRAVITY (DENSITY) : No data available

SOLUBILITY IN : Water : Practically Insoluble, Organic solvents : Slightly soluble

PARTITION COEFFICIENT; n-octanol/water

: No data available

DECOMPOSITION TEMPERATURE

PRODUCT NAME: n-Hexacosane

SDS No. 1021-41260 Revised date September 28, 2018 3/4 page

10. STABILITY AND REACTIVITY

REACTIVITY : Stable under recommended storage conditions. CHEMICAL STABILITY : Stable under recommended storage conditions.

CONDITION TO AVOID : Sunlight, heat INCOMPATIBILE MATERIALS : Oxidizers HAZARDOUS DECOMPOSITION PRODUCTS : CO, CO²

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY : No data available SKIN CORROSION/IRRITATION : No data available EYE DAMAGE/EYE IRRITATION : No data available

RESPIRATORY OR SKIN SENSITIZATION

: No data available
GERM CELL MUTAGENICITY : No data available
CARCINOGENICITY : No data available
REPRODUCTIVE TOXICITY : No data available

SPECIFIC TARGET ORGAN TOXICITY

: No data available

ASPIRATION TOXICITY : No data available

POTENTIAL HEALTH EFFECTS

Inhalation : May be harmful if inhaled. May cause respiratory tract irritation

Ingestion : May be harmful if swallowed.

Skin : May be harmful if absorbed through skin. May cause skin irritation

Eyes : May cause eye irritation.

ADDITIONAL INFORMATION

NTP : Not listed
IARC : Not listed
OSHA : Not listed
ACGIH : Not listed

12. ECOLOGICAL INFORMATION

ECOTOXICITY : No data available BIODEGRADABILITY : No data available BIOACCUMULATION POTENTIAL : No data available MOBILITY IN SOIL : No data available

OTHER ADVERSE EFFECTS : Not listed in Montreal Protocol list.

13. DISPOSAL INFORMATION

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber in accordance with all applicable regulations. Any disposal practice must be in compliance with country, local, state, and federal laws and regulations (contact country, local or state environmental agency for specific rules). After contents are completely removed, dispose of its container at hazardous or special waste collection point (in accordance with local/regional/national/international regulation).

14. TRANSPORT INFORMATION

IATA : Not Restricted
ADR/RID : Not dangerous goods

DOT(Department of Transportation): Not a Hazardous Material for DOT shipping

MARINE POLLUTANT : Yes

15. REGULATORY INFORMATION

For classification and labeling of chemicals in accordance with the applicable rules and regulations in the EU or each country, refer to GHS classification of this product (See Section 2).

PRODUCT NAME: n-Hexacosane

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16. OTHER INFORMATION

NOTICE:

The information contained in the SDS description is applicable exclusively to the chemical substance identified herein and for its intended use as an analytical reference standard or reagent and to the unit quantity intended for that purpose. The information does not relate to, and may not be appropriate for, any application or larger quantity of the substance described. Our products are intended for the use by individuals possessing sufficient technical skill and qualification on use the material potential hazardous chemical. Accordingly, no representation or warranty, express or implied, with respect to merchantability and fitness for a particular purpose is made with respect to the information contained herein.

Attention:

SDS No.1021-41280 Revised date September 28, 2018 1/4 page

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : n-Octacosane
NAME OF SUPPLIER : GL Sciences Inc.

ADDRESS : 22-1 Nishishinjuku 6-chome Shinjuku-ku Tokyo 163-1130, Japan

CHARGE SECTION : International Sales Section

TELEPHONE No. : +81-3-5323-6620 FACSIMILE No. : +81-3-5323-6621

PRODUCT No. : 1021-41280, 1021-59035

SDS No. : 1021-41280

Research use only.

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION : Classification not possible

HAZARDS SYMBOL : --SIGNAL WORD : --HAZARD STATEMENTS : ---

HAZARD INFORMATIONS : May cause respiratory tract irritation if inhaled.

May cause eye, skin and mucous irritations if contact with.

May be harmful if ingested.

May induce damage to the lung through prolonged or repeated exposure.

MOST IMPORTANT HAZARDS : No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY : n-Octacosane

 SYNONYMS
 : --

 CONTENT
 : 99 %

 CHEMICAL FORMULA
 : C28H58

 CAS RN
 : 630-02-4

 TSCA INVENTRY
 : Listed

 EINECS No.
 : 211-125-7

4. FIRST AID MEASURES

GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable

dust and/or fumes, use self-contained breathing apparatus and dust

impervious protective suit. Use personal protective equipment.

INHALATION : Move victim to fresh air and gargle. If breathing is difficult, give oxygen.

If irritation persists, consult a physician.

SKIN CONTACT : Remove contaminated clothes and shoes, rinse skin with plenty of water or

shower. Use soap to help assure removal. If irritation persists, consult a

physician.

EYE CONTACT : Remove any contact lenses at once. Flush eyes well with flooding large

amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a

physician.

INGESTION : Rinse mouth, give plenty of water to vomit. Never give anything by mouth to an

unconscious person. Consult a physician

4. FIRST AID MEASURES

GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable

dust and/or fumes, use self-contained breathing apparatus and dust

impervious protective suit. Use personal protective equipment.

INHALATION : Move victim to fresh air and gargle. If breathing is difficult, give oxygen.

If irritation persists, consult a physician.

SKIN CONTACT : Remove contaminated clothes and shoes, rinse skin with plenty of water or

shower. Use soap to help assure removal. If irritation persists, consult a

PRODUCT NAME: n-Octacosane

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EYE CONTACT : Remove any contact lenses at once. Flush eyes well with flooding large

amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a

physician.

INGESTION : Rinse mouth, give plenty of water to vomit. Never give anything by mouth to an

unconscious person. Consult a physician.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA : Carbon dioxide, dry chemical powder, foam, water spray FIRE & EXPLOSION HAZARDS : Toxic and irritating dust, fumes or smoke may be emitted.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS

: Fireman should wear normal protective equipment (full bunker gear) and

positive-pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS : Avoid raising dust and avoid contact with skin and eyes.

In case of insufficient ventilation, wear suitable respiratory equipment.

ENVIRONMENTAL PRECATIONS : Prevent spills from entering sewers, watercourses or low areas.

Comply with local disposal regulations.

METHODS FOR CLEANING UP : Do not touch spilled material without suitable protection. After material is

completely picked up, wash the spill site with soap and water and ventilate the area. Pull all wastes in a plastic bag for disposal and seal it tightly. Remove,

clean, or dispose contaminated clothing.

7. HANDLING AND STORAGE

HANDLING : Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated

exposure. Handle this product with appropriate protective equipments.

STORAGE : Store away from sunlight in well-ventilated dry place at room temperature.

Keep the product in an original box after use it.

INCOMPATIBLE PRODUCTS : Strong oxidizers and strong acids

8. EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING MEASURES : Use exhaust ventilation to keep airborne concentrations below exposure limits.

Use adequate ventilation.

VENTILATION : Local Exhaust ; Recommended, Mechanical(General) ; Recommended

PERSONAL PROTECTION

RESPRATORY PROTECTION : Safety mask

HAND PROTECTION : Chemical resistant gloves
EYE PROTECTION : Safety glasses(goggles)
SKIN PROTECTION : Protective clothing

CONTROL PARAMETERS

OSHA PEL : Not established

NIOSH REL : Not established

ACGIH : Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE : White – nearly white
PHYSICAL STATE : Solid or powder
ODOR : No data available
pH : No data available
BOILING POINT : No data available

MELTING POINT : 60 - 64 °C

FLASH POINT : No data available

FLAMMABILITY(solid, gas) : 227 °C

AUTOIGNITION TEMPERATURE : No data available VAPOR PRESSURE : No data available SPACIFIC GRAVITY (DENSITY) : No data available

SOLUBILITY IN : Water : Practically Insoluble, Organic solvents : Slightly soluble

PARTITION COEFFICIENT

n-octanol/water : No data available

DECOMPOSITION TEMPERATURE

PRODUCT NAME: n-Octacosane

SDS No.1021-41280 Revised date September 28, 2018 3/4 page

10. STABILITY AND REACTIVITY

REACTIVITY : Stable under recommended storage conditions. CHEMICAL STABILITY : Stable under recommended storage conditions.

CONDITION TO AVOID : Sunlight, heat INCOMPATIBILE MATERIALS : Oxidizers HAZARDOUS DECOMPOSITION PRODUCTS

CO, CO²

11. TOXICOLOGICAL INFORMATION

GERM CELL MUTAGENICITY

ACUTE TOXICITY : No data available SKIN CORROSION/IRRITATION : No data available EYE DAMAGE/EYE IRRITATION : No data available

RESPIRATORY OR SKIN SENSITIZATION

No data availableNo data availableNo data available

CARCINOGENICITY : No data available REPRODUCTIVE TOXICITY : No data available

SPECIFIC TARGET ORGAN TOXICITY

: No data available

ASPIRATION TOXICITY : No data available

POTENTIAL HEALTH EFFECTS

Inhalation : May be harmful if inhaled. May cause respiratory tract irritation

Ingestion : May be harmful if swallowed.

Skin : May be harmful if absorbed through skin. May cause skin irritation

Eyes : May cause eye irritation.

ADDITIONAL INFORMATION

NTP : Not listed IARC : Not listed OSHA : Not listed ACGIH : Not listed

12. ECOLOGICAL INFORMATION

ECOTOXICITY : No data available BIODEGRADABILITY : No data available BIOACCUMULATION POTENTIAL : No data available MOBILITY IN SOIL : No data available

OTHER ADVERSE EFFECTS : Not listed in Montreal Protocol list.

13. DISPOSAL INFORMATION

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber in accordance with all applicable regulations. Any disposal practice must be in compliance with country, local, state, and federal laws and regulations (contact country, local or state environmental agency for specific rules). After contents are completely removed, dispose of its container at hazardous or special waste collection point (in accordance with local/regional/national/international regulation).

14. TRANSPORT INFORMATION

IATA : Not Restricted
ADR/RID : Not dangerous goods

DOT(Department of Transportation): Not a Hazardous Material for DOT shipping

MARINE POLLUTANT : Yes

15. REGULATORY INFORMATION

For classification and labeling of chemicals in accordance with the applicable rules and regulations in the EU or each country, refer to GHS classification of this product (See Section 2).

PRODUCT NAME: n-Octacosane

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16. OTHER INFORMATION

NOTICE:

The information contained in the SDS description is applicable exclusively to the chemical substance identified herein and for its intended use as an analytical reference standard or reagent and to the unit quantity intended for that purpose. The information does not relate to, and may not be appropriate for, any application or larger quantity of the substance described. Our products are intended for the use by individuals possessing sufficient technical skill and qualification on use the material potential hazardous chemical. Accordingly, no representation or warranty, express or implied, with respect to merchantability and fitness for a particular purpose is made with respect to the information contained herein.

Attention:

SDS No.1021-41300 Revised date September 28, 2018 1/4 page

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : n-Triacontane

NAME OF SUPPLIER : GL Sciences Inc.

ADDRESS : 22-1 Nishishinjuku 6-chome Shinjuku-ku Tokyo 163-1130, Japan

CHARGE SECTION : International Sales Section

TELEPHONE No. : +81-3-5323-6620 FACSIMILE No. : +81-3-5323-6621

PRODUCT No. : 1021-41300, 1021-59035

SDS No. : 1021-41300

Research use only.

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION : Classification not possible

HAZARDS SYMBOL : --SIGNAL WORD : --HAZARD STATEMENTS : --PRECAUTIONARY STATEMENTS : ---

HAZARD INFORMATIONS : May cause respiratory tract irritation if inhaled.

May cause eye, skin and mucous irritations if contact with.

May be harmful if ingested.

May induce damage to the lung through prolonged or repeated exposure.

MOST IMPORTANT HAZARDS : No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY : n-Triacontane

SYNONYMS : --CONTENT : 99 %
CHEMICAL FORMULA : C30H62
CAS RN : 638-68-6
TSCA INVENTRY : Listed
EINECS No. : 211-349-5

4. FIRST AID MEASURES

GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable

dust and/or fumes, use self-contained breathing apparatus and dust

impervious protective suit. Use personal protective equipment.

INHALATION : Move victim to fresh air and gargle. If breathing is difficult, give oxygen.

If irritation persists, consult a physician.

SKIN CONTACT : Remove contaminated clothes and shoes, rinse skin with plenty of water or

shower. Use soap to help assure removal. If irritation persists, consult a

physician.

EYE CONTACT : Remove any contact lenses at once. Flush eyes well with flooding large

amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a

physician.

INGESTION : Rinse mouth, give plenty of water to vomit. Never give anything by mouth to an

unconscious person. Consult a physician

4. FIRST AID MEASURES

GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable

dust and/or fumes, use self-contained breathing apparatus and dust

impervious protective suit. Use personal protective equipment.

INHALATION : Move victim to fresh air and gargle. If breathing is difficult, give oxygen.

If irritation persists, consult a physician.

SKIN CONTACT : Remove contaminated clothes and shoes, rinse skin with plenty of water or

shower. Use soap to help assure removal. If irritation persists, consult a

PRODUCT NAME: n-Triacontane

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EYE CONTACT : Remove any contact lenses at once. Flush eyes well with flooding large

amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a

physician.

INGESTION : Rinse mouth, give plenty of water to vomit. Never give anything by mouth to an

unconscious person. Consult a physician.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA : Carbon dioxide, dry chemical powder, foam, water spray FIRE & EXPLOSION HAZARDS : Toxic and irritating dust, fumes or smoke may be emitted.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS

: Fireman should wear normal protective equipment (full bunker gear) and

positive-pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS : Avoid raising dust and avoid contact with skin and eyes.

In case of insufficient ventilation, wear suitable respiratory equipment.

ENVIRONMENTAL PRECATIONS : Prevent spills from entering sewers, watercourses or low areas.

Comply with local disposal regulations.

METHODS FOR CLEANING UP : Do not touch spilled material without suitable protection. After material is

completely picked up, wash the spill site with soap and water and ventilate the area. Pull all wastes in a plastic bag for disposal and seal it tightly. Remove,

clean, or dispose contaminated clothing.

7. HANDLING AND STORAGE

HANDLING : Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated

exposure. Handle this product with appropriate protective equipments.

STORAGE : Store away from sunlight in well-ventilated dry place at room temperature.

Keep the product in an original box after use it.

INCOMPATIBLE PRODUCTS : Strong oxidizers and strong acids

8. EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING MEASURES : Use exhaust ventilation to keep airborne concentrations below exposure limits.

Use adequate ventilation.

VENTILATION : Local Exhaust ; Recommended, Mechanical(General) ; Recommended

PERSONAL PROTECTION

RESPRATORY PROTECTION : Safety mask

HAND PROTECTION : Chemical resistant gloves
EYE PROTECTION : Safety glasses(goggles)
SKIN PROTECTION : Protective clothing

CONTROL PARAMETERS

OSHA PEL : Not established

NIOSH REL : Not established

ACGIH : Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE : White – nearly white PHYSICAL STATE : Solid or powder ODOR : No data available pH : No data available

BOILING POINT : 258 °C MELTING POINT : 64 - 67 °C

FLASH POINT : No data available

FLAMMABILITY(solid, gas) : >110 °C

AUTOIGNITION TEMPERATURE : No data available VAPOR PRESSURE : No data available SPACIFIC GRAVITY (DENSITY) : No data available

SOLUBILITY IN : Water : Practically Insoluble, Organic solvents : Slightly soluble

PARTITION COEFFICIENT; n-octanol/water

: No data available

DECOMPOSITION TEMPERATURE

PRODUCT NAME: n-Triacontane

SDS No.1021-41300 Revised date September 28, 2018 3/4 page

10. STABILITY AND REACTIVITY

REACTIVITY : Stable under recommended storage conditions. CHEMICAL STABILITY : Stable under recommended storage conditions.

CONDITION TO AVOID : Sunlight, heat INCOMPATIBILE MATERIALS : Oxidizers HAZARDOUS DECOMPOSITION PRODUCTS

CO, CO²

11. TOXICOLOGICAL INFORMATION

GERM CELL MUTAGENICITY

REPRODUCTIVE TOXICITY

CARCINOGENICITY

ACUTE TOXICITY : No data available SKIN CORROSION/IRRITATION : No data available EYE DAMAGE/EYE IRRITATION : No data available

RESPIRATORY OR SKIN SENSITIZATION

: No data available: No data available: No data available: No data available

SPECIFIC TARGET ORGAN TOXICITY

: No data available

ASPIRATION TOXICITY : No data available

POTENTIAL HEALTH EFFECTS

Inhalation : May be harmful if inhaled. May cause respiratory tract irritation

Ingestion : May be harmful if swallowed.

Skin : May be harmful if absorbed through skin. May cause skin irritation

Eyes : May cause eye irritation.

ADDITIONAL INFORMATION

NTP : Not listed IARC : Not listed OSHA : Not listed ACGIH : Not listed

12. ECOLOGICAL INFORMATION

ECOTOXICITY : No data available BIODEGRADABILITY : No data available BIOACCUMULATION POTENTIAL : No data available MOBILITY IN SOIL : No data available

OTHER ADVERSE EFFECTS : Not listed in Montreal Protocol list.

13. DISPOSAL INFORMATION

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber in accordance with all applicable regulations. Any disposal practice must be in compliance with country, local, state, and federal laws and regulations (contact country, local or state environmental agency for specific rules). After contents are completely removed, dispose of its container at hazardous or special waste collection point (in accordance with local/regional/national/international regulation).

14. TRANSPORT INFORMATION

IATA : Not Restricted
ADR/RID : Not dangerous goods

DOT(Department of Transportation): Not a Hazardous Material for DOT shipping

MARINE POLLUTANT : Yes

15. REGULATORY INFORMATION

For classification and labeling of chemicals in accordance with the applicable rules and regulations in the EU or each country, refer to GHS classification of this product (See Section 2).

PRODUCT NAME: n-Triacontane

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16. OTHER INFORMATION

NOTICE:

The information contained in the SDS description is applicable exclusively to the chemical substance identified herein and for its intended use as an analytical reference standard or reagent and to the unit quantity intended for that purpose. The information does not relate to, and may not be appropriate for, any application or larger quantity of the substance described. Our products are intended for the use by individuals possessing sufficient technical skill and qualification on use the material potential hazardous chemical. Accordingly, no representation or warranty, express or implied, with respect to merchantability and fitness for a particular purpose is made with respect to the information contained herein.

Attention:

SDS No.1021-41320 Revised date September 28, 2018 1/4 page

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : n-Dotriacontane
NAME OF SUPPLIER : GL Sciences Inc.

ADDRESS : 22-1 Nishishinjuku 6-chome Shinjuku-ku Tokyo 163-1130, Japan

CHARGE SECTION : International Sales Section

TELEPHONE No. : +81-3-5323-6620 FACSIMILE No. : +81-3-5323-6621

PRODUCT No. : 1021-41320, 1021-59035

SDS No. : 1021-41320

Research use only.

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION : Classification not possible

HAZARD INFORMATIONS : May cause respiratory tract irritation if inhaled.

May cause eye, skin and mucous irritations if contact with.

May be harmful if ingested.

May induce damage to the lung through prolonged or repeated exposure.

MOST IMPORTANT HAZARDS : No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY : n-Dotriacontane

 SYNONYMS
 : --

 CONTENT
 : 99 %

 CHEMICAL FORMULA
 : C32H66

 CAS RN
 : 544-85-4

 TSCA INVENTRY
 : Listed

 EINECS No.
 : 208-881-5

4. FIRST AID MEASURES

GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable

dust and/or fumes, use self-contained breathing apparatus and dust

impervious protective suit. Use personal protective equipment.

INHALATION : Move victim to fresh air and gargle. If breathing is difficult, give oxygen.

If irritation persists, consult a physician.

SKIN CONTACT : Remove contaminated clothes and shoes, rinse skin with plenty of water or

shower. Use soap to help assure removal. If irritation persists, consult a

physician.

EYE CONTACT : Remove any contact lenses at once. Flush eyes well with flooding large

amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a

physician.

INGESTION : Rinse mouth, give plenty of water to vomit. Never give anything by mouth to an

unconscious person. Consult a physician

4. FIRST AID MEASURES

GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable

dust and/or fumes, use self-contained breathing apparatus and dust

impervious protective suit. Use personal protective equipment.

INHALATION : Move victim to fresh air and gargle. If breathing is difficult, give oxygen.

If irritation persists, consult a physician.

SKIN CONTACT : Remove contaminated clothes and shoes, rinse skin with plenty of water or

shower. Use soap to help assure removal. If irritation persists, consult a

PRODUCT NAME: n-Dotriacontane

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EYE CONTACT : Remove any contact lenses at once. Flush eyes well with flooding large

amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a

physician.

INGESTION : Rinse mouth, give plenty of water to vomit. Never give anything by mouth to an

unconscious person. Consult a physician.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA : Carbon dioxide, dry chemical powder, foam, water spray FIRE & EXPLOSION HAZARDS : Toxic and irritating dust, fumes or smoke may be emitted.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS

: Fireman should wear normal protective equipment (full bunker gear) and

positive-pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS : Avoid raising dust and avoid contact with skin and eyes.

In case of insufficient ventilation, wear suitable respiratory equipment.

ENVIRONMENTAL PRECATIONS : Prevent spills from entering sewers, watercourses or low areas.

Comply with local disposal regulations.

METHODS FOR CLEANING UP : Do not touch spilled material without suitable protection. After material is

completely picked up, wash the spill site with soap and water and ventilate the area. Pull all wastes in a plastic bag for disposal and seal it tightly. Remove,

clean, or dispose contaminated clothing.

7. HANDLING AND STORAGE

HANDLING : Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated

exposure. Handle this product with appropriate protective equipments.

STORAGE : Store away from sunlight in well-ventilated dry place at room temperature.

Keep the product in an original box after use it.

INCOMPATIBLE PRODUCTS : Strong oxidizers and strong acids

8. EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING MEASURES : Use exhaust ventilation to keep airborne concentrations below exposure limits.

Use adequate ventilation.

VENTILATION : Local Exhaust ; Recommended, Mechanical(General) ; Recommended

PERSONAL PROTECTION

RESPRATORY PROTECTION : Safety mask

HAND PROTECTION : Chemical resistant gloves
EYE PROTECTION : Safety glasses(goggles)
SKIN PROTECTION : Protective clothing

CONTROL PARAMETERS

OSHA PEL : Not established

NIOSH REL : Not established

ACGIH : Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE : White – nearly white PHYSICAL STATE : Solid or powder ODOR : No data available pH : No data available

BOILING POINT : 281 °C MELTING POINT : 68 - 70 °C

FLASH POINT : No data available

FLAMMABILITY(solid, gas) : >110 °C

AUTOIGNITION TEMPERATURE : No data available VAPOR PRESSURE : No data available SPACIFIC GRAVITY (DENSITY) : No data available

SOLUBILITY IN : Water : Practically Insoluble, Organic solvents : Slightly soluble

PARTITION COEFFICIENT; n-octanol/water

: No data available

DECOMPOSITION TEMPERATURE

PRODUCT NAME: n-Dotriacontane

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10. STABILITY AND REACTIVITY

REACTIVITY : Stable under recommended storage conditions. CHEMICAL STABILITY : Stable under recommended storage conditions.

CONDITION TO AVOID : Sunlight, heat INCOMPATIBILE MATERIALS : Oxidizers HAZARDOUS DECOMPOSITION PRODUCTS : CO, CO²

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY : No data available SKIN CORROSION/IRRITATION : No data available EYE DAMAGE/EYE IRRITATION : No data available

RESPIRATORY OR SKIN SENSITIZATION

: No data available
GERM CELL MUTAGENICITY : No data available
CARCINOGENICITY : No data available
REPRODUCTIVE TOXICITY : No data available

SPECIFIC TARGET ORGAN TOXICITY

: No data available

ASPIRATION TOXICITY : No data available

POTENTIAL HEALTH EFFECTS

Inhalation : May be harmful if inhaled. May cause respiratory tract irritation

Ingestion : May be harmful if swallowed.

Skin : May be harmful if absorbed through skin. May cause skin irritation

Eyes : May cause eye irritation.

ADDITIONAL INFORMATION

NTP : Not listed
IARC : Not listed
OSHA : Not listed
ACGIH : Not listed

12. ECOLOGICAL INFORMATION

ECOTOXICITY : No data available BIODEGRADABILITY : No data available BIOACCUMULATION POTENTIAL : No data available MOBILITY IN SOIL : No data available

OTHER ADVERSE EFFECTS : Not listed in Montreal Protocol list.

13. DISPOSAL INFORMATION

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber in accordance with all applicable regulations. Any disposal practice must be in compliance with country, local, state, and federal laws and regulations (contact country, local or state environmental agency for specific rules). After contents are completely removed, dispose of its container at hazardous or special waste collection point (in accordance with local/regional/national/international regulation).

14. TRANSPORT INFORMATION

IATA : Not Restricted
ADR/RID : Not dangerous goods

DOT(Department of Transportation): Not a Hazardous Material for DOT shipping

MARINE POLLUTANT : Yes

15. REGULATORY INFORMATION

For classification and labeling of chemicals in accordance with the applicable rules and regulations in the EU or each country, refer to GHS classification of this product (See Section 2).

PRODUCT NAME: n-Dotriacontane

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16. OTHER INFORMATION

NOTICE:

The information contained in the SDS description is applicable exclusively to the chemical substance identified herein and for its intended use as an analytical reference standard or reagent and to the unit quantity intended for that purpose. The information does not relate to, and may not be appropriate for, any application or larger quantity of the substance described. Our products are intended for the use by individuals possessing sufficient technical skill and qualification on use the material potential hazardous chemical. Accordingly, no representation or warranty, express or implied, with respect to merchantability and fitness for a particular purpose is made with respect to the information contained herein.

Attention:

SDS No.1021-41340 Revised date September 28, 2018 1/4 page

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : n-Tetratriacontane
NAME OF SUPPLIER : GL Sciences Inc.

ADDRESS : 22-1 Nishishinjuku 6-chome Shinjuku-ku Tokyo 163-1130, Japan

CHARGE SECTION : International Sales Section

TELEPHONE No. : +81-3-5323-6620 FACSIMILE No. : +81-3-5323-6621

PRODUCT No. : 1021-41340, 1021-59035

SDS No. : 1021-41340

Research use only.

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION : Classification not possible

HAZARDS SYMBOL : --SIGNAL WORD : --HAZARD STATEMENTS : ---

HAZARD INFORMATIONS : May cause respiratory tract irritation if inhaled.

May cause eye, skin and mucous irritations if contact with.

May be harmful if ingested.

May induce damage to the lung through prolonged or repeated exposure.

MOST IMPORTANT HAZARDS : No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY : n-Tetratriacontane

SYNONYMS : --CONTENT : 99 %
CHEMICAL FORMULA : C34H70
CAS RN : 14167-59-0
TSCA INVENTRY : Listed
EINECS No. : 238-013-0

4. FIRST AID MEASURES

GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable

dust and/or fumes, use self-contained breathing apparatus and dust

impervious protective suit. Use personal protective equipment.

INHALATION : Move victim to fresh air and gargle. If breathing is difficult, give oxygen.

If irritation persists, consult a physician.

SKIN CONTACT : Remove contaminated clothes and shoes, rinse skin with plenty of water or

shower. Use soap to help assure removal. If irritation persists, consult a

physician.

EYE CONTACT : Remove any contact lenses at once. Flush eyes well with flooding large

amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a

physician.

INGESTION : Rinse mouth, give plenty of water to vomit. Never give anything by mouth to an

unconscious person. Consult a physician

4. FIRST AID MEASURES

GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable

dust and/or fumes, use self-contained breathing apparatus and dust

impervious protective suit. Use personal protective equipment.

INHALATION : Move victim to fresh air and gargle. If breathing is difficult, give oxygen.

If irritation persists, consult a physician.

SKIN CONTACT : Remove contaminated clothes and shoes, rinse skin with plenty of water or

shower. Use soap to help assure removal. If irritation persists, consult a

PRODUCT NAME: n-Tetratriacontane

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EYE CONTACT : Remove any contact lenses at once. Flush eyes well with flooding large

amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a

physician.

INGESTION : Rinse mouth, give plenty of water to vomit. Never give anything by mouth to an

unconscious person. Consult a physician.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA : Carbon dioxide, dry chemical powder, foam, water spray FIRE & EXPLOSION HAZARDS : Toxic and irritating dust, fumes or smoke may be emitted.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS

: Fireman should wear normal protective equipment (full bunker gear) and

positive-pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS : Avoid raising dust and avoid contact with skin and eyes.

In case of insufficient ventilation, wear suitable respiratory equipment.

ENVIRONMENTAL PRECATIONS : Prevent spills from entering sewers, watercourses or low areas.

Comply with local disposal regulations.

METHODS FOR CLEANING UP : Do not touch spilled material without suitable protection. After material is

completely picked up, wash the spill site with soap and water and ventilate the area. Pull all wastes in a plastic bag for disposal and seal it tightly. Remove,

clean, or dispose contaminated clothing.

7. HANDLING AND STORAGE

HANDLING : Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated

exposure. Handle this product with appropriate protective equipments.

STORAGE : Store away from sunlight in well-ventilated dry place at room temperature.

Keep the product in an original box after use it.

INCOMPATIBLE PRODUCTS : Strong oxidizers and strong acids

8. EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING MEASURES : Use exhaust ventilation to keep airborne concentrations below exposure limits.

Use adequate ventilation.

VENTILATION : Local Exhaust ; Recommended, Mechanical(General) ; Recommended

PERSONAL PROTECTION

RESPRATORY PROTECTION : Safety mask

HAND PROTECTION : Chemical resistant gloves
EYE PROTECTION : Safety glasses(goggles)
SKIN PROTECTION : Protective clothing

CONTROL PARAMETERS

OSHA PEL : Not established

NIOSH REL : Not established

ACGIH : Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE : White – nearly white PHYSICAL STATE : Solid or powder ODOR : No data available pH : No data available

BOILING POINT : $285 \, ^{\circ}\text{C}$ MELTING POINT : $72 - 75 \, ^{\circ}\text{C}$

FLASH POINT : No data available

FLAMMABILITY(solid, gas) : >110 °C

AUTOIGNITION TEMPERATURE : No data available VAPOR PRESSURE : No data available SPACIFIC GRAVITY (DENSITY) : No data available

SOLUBILITY IN : Water : Practically Insoluble, Organic solvents : Slightly soluble

PARTITION COEFFICIENT; n-octanol/water

: No data available

DECOMPOSITION TEMPERATURE

PRODUCT NAME: n-Tetratriacontane

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10. STABILITY AND REACTIVITY

REACTIVITY : Stable under recommended storage conditions. CHEMICAL STABILITY : Stable under recommended storage conditions.

CONDITION TO AVOID : Sunlight, heat INCOMPATIBILE MATERIALS : Oxidizers HAZARDOUS DECOMPOSITION PRODUCTS : CO, CO²

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY : No data available SKIN CORROSION/IRRITATION : No data available EYE DAMAGE/EYE IRRITATION : No data available

RESPIRATORY OR SKIN SENSITIZATION

: No data available
GERM CELL MUTAGENICITY : No data available
CARCINOGENICITY : No data available
REPRODUCTIVE TOXICITY : No data available

SPECIFIC TARGET ORGAN TOXICITY

: No data available

ASPIRATION TOXICITY : No data available

POTENTIAL HEALTH EFFECTS

Inhalation : May be harmful if inhaled. May cause respiratory tract irritation

Ingestion : May be harmful if swallowed.

Skin : May be harmful if absorbed through skin. May cause skin irritation

Eyes : May cause eye irritation.

ADDITIONAL INFORMATION

NTP : Not listed
IARC : Not listed
OSHA : Not listed
ACGIH : Not listed

12. ECOLOGICAL INFORMATION

ECOTOXICITY : No data available BIODEGRADABILITY : No data available BIOACCUMULATION POTENTIAL : No data available MOBILITY IN SOIL : No data available

OTHER ADVERSE EFFECTS : Not listed in Montreal Protocol list.

13. DISPOSAL INFORMATION

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber in accordance with all applicable regulations. Any disposal practice must be in compliance with country, local, state, and federal laws and regulations (contact country, local or state environmental agency for specific rules). After contents are completely removed, dispose of its container at hazardous or special waste collection point (in accordance with local/regional/national/international regulation).

14. TRANSPORT INFORMATION

IATA : Not Restricted
ADR/RID : Not dangerous goods

DOT(Department of Transportation): Not a Hazardous Material for DOT shipping

MARINE POLLUTANT : Yes

15. REGULATORY INFORMATION

For classification and labeling of chemicals in accordance with the applicable rules and regulations in the EU or each country, refer to GHS classification of this product (See Section 2).

PRODUCT NAME: n-Tetratriacontane

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16. OTHER INFORMATION

NOTICE:

The information contained in the SDS description is applicable exclusively to the chemical substance identified herein and for its intended use as an analytical reference standard or reagent and to the unit quantity intended for that purpose. The information does not relate to, and may not be appropriate for, any application or larger quantity of the substance described. Our products are intended for the use by individuals possessing sufficient technical skill and qualification on use the material potential hazardous chemical. Accordingly, no representation or warranty, express or implied, with respect to merchantability and fitness for a particular purpose is made with respect to the information contained herein.

Attention:

SDS No.1021-41360 Revised date September 28, 2018 1/4 page

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : n-Hexatriacontane
NAME OF SUPPLIER : GL Sciences Inc.

ADDRESS : 22-1 Nishishinjuku 6-chome Shinjuku-ku Tokyo 163-1130, Japan

CHARGE SECTION : International Sales Section

TELEPHONE No. : +81-3-5323-6620 FACSIMILE No. : +81-3-5323-6621

PRODUCT No. : 1021-41360, 1021-59035

SDS No. : 1021-41360

Research use only.

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION : Classification not possible

HAZARD INFORMATIONS : May cause respiratory tract irritation if inhaled.

May cause eye, skin and mucous irritations if contact with.

May be harmful if ingested.

May induce damage to the lung through prolonged or repeated exposure.

MOST IMPORTANT HAZARDS : No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY : n-Hexatriacontane

SYNONYMS : --CONTENT : 99 %
CHEMICAL FORMULA : C36H74
CAS RN : 630-06-8
TSCA INVENTRY : Listed
EINECS No. : 211-127-8

4. FIRST AID MEASURES

GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable

dust and/or fumes, use self-contained breathing apparatus and dust

impervious protective suit. Use personal protective equipment.

INHALATION : Move victim to fresh air and gargle. If breathing is difficult, give oxygen.

If irritation persists, consult a physician.

SKIN CONTACT : Remove contaminated clothes and shoes, rinse skin with plenty of water or

shower. Use soap to help assure removal. If irritation persists, consult a

physician.

EYE CONTACT : Remove any contact lenses at once. Flush eyes well with flooding large

amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a

physician.

INGESTION : Rinse mouth, give plenty of water to vomit. Never give anything by mouth to an

unconscious person. Consult a physician

4. FIRST AID MEASURES

GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable

dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit. Use personal protective equipment.

INHALATION : Move victim to fresh air and gargle. If breathing is difficult, give oxygen.

If irritation persists, consult a physician.

SKIN CONTACT : Remove contaminated clothes and shoes, rinse skin with plenty of water or

shower. Use soap to help assure removal. If irritation persists, consult a

PRODUCT NAME: n-Hexatriacontane

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EYE CONTACT : Remove any contact lenses at once. Flush eyes well with flooding large

amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a

physician.

INGESTION : Rinse mouth, give plenty of water to vomit. Never give anything by mouth to an

unconscious person. Consult a physician.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA : Carbon dioxide, dry chemical powder, foam, water spray FIRE & EXPLOSION HAZARDS : Toxic and irritating dust, fumes or smoke may be emitted.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS

: Fireman should wear normal protective equipment (full bunker gear) and

positive-pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS : Avoid raising dust and avoid contact with skin and eyes.

In case of insufficient ventilation, wear suitable respiratory equipment.

ENVIRONMENTAL PRECATIONS : Prevent spills from entering sewers, watercourses or low areas.

Comply with local disposal regulations.

METHODS FOR CLEANING UP : Do not touch spilled material without suitable protection. After material is

completely picked up, wash the spill site with soap and water and ventilate the area. Pull all wastes in a plastic bag for disposal and seal it tightly. Remove,

clean, or dispose contaminated clothing.

7. HANDLING AND STORAGE

HANDLING : Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated

exposure. Handle this product with appropriate protective equipments.

STORAGE : Store away from sunlight in well-ventilated dry place at room temperature.

Keep the product in an original box after use it.

INCOMPATIBLE PRODUCTS : Strong oxidizers and strong acids

8. EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING MEASURES : Use exhaust ventilation to keep airborne concentrations below exposure limits.

Use adequate ventilation.

VENTILATION : Local Exhaust ; Recommended, Mechanical(General) ; Recommended

PERSONAL PROTECTION

RESPRATORY PROTECTION : Safety mask

HAND PROTECTION : Chemical resistant gloves
EYE PROTECTION : Safety glasses(goggles)
SKIN PROTECTION : Protective clothing

CONTROL PARAMETERS

OSHA PEL : Not established

NIOSH REL : Not established

ACGIH : Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE : White – nearly white PHYSICAL STATE : Solid or powder ODOR : No data available pH : No data available BOILING POINT : No data available

MELTING POINT : 74~76 °C

FLASH POINT : No data available

FLAMMABILITY(solid, gas) : >110 °C

AUTOIGNITION TEMPERATURE : No data available VAPOR PRESSURE : No data available SPACIFIC GRAVITY (DENSITY) : No data available

SOLUBILITY IN : Water : Practically Insoluble, Organic solvents : Slightly soluble

PARTITION COEFFICIENT; n-octanol/water

: No data available

DECOMPOSITION TEMPERATURE

PRODUCT NAME: n-Hexatriacontane

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10. STABILITY AND REACTIVITY

REACTIVITY : Stable under recommended storage conditions. CHEMICAL STABILITY : Stable under recommended storage conditions.

CONDITION TO AVOID : Sunlight, heat INCOMPATIBILE MATERIALS : Oxidizers HAZARDOUS DECOMPOSITION PRODUCTS : CO, CO²

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY : No data available SKIN CORROSION/IRRITATION : No data available EYE DAMAGE/EYE IRRITATION : No data available

RESPIRATORY OR SKIN SENSITIZATION

: No data available
GERM CELL MUTAGENICITY : No data available
CARCINOGENICITY : No data available
REPRODUCTIVE TOXICITY : No data available

SPECIFIC TARGET ORGAN TOXICITY

: No data available

ASPIRATION TOXICITY : No data available

POTENTIAL HEALTH EFFECTS

Inhalation : May be harmful if inhaled. May cause respiratory tract irritation

Ingestion : May be harmful if swallowed.

Skin : May be harmful if absorbed through skin. May cause skin irritation

Eyes : May cause eye irritation.

ADDITIONAL INFORMATION

NTP : Not listed
IARC : Not listed
OSHA : Not listed
ACGIH : Not listed

12. ECOLOGICAL INFORMATION

ECOTOXICITY : No data available BIODEGRADABILITY : No data available BIOACCUMULATION POTENTIAL : No data available MOBILITY IN SOIL : No data available

OTHER ADVERSE EFFECTS : Not listed in Montreal Protocol list.

13. DISPOSAL INFORMATION

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber in accordance with all applicable regulations. Any disposal practice must be in compliance with country, local, state, and federal laws and regulations (contact country, local or state environmental agency for specific rules). After contents are completely removed, dispose of its container at hazardous or special waste collection point (in accordance with local/regional/national/international regulation).

14. TRANSPORT INFORMATION

IATA : Not Restricted
ADR/RID : Not dangerous goods

DOT(Department of Transportation): Not a Hazardous Material for DOT shipping

MARINE POLLUTANT : Yes

15. REGULATORY INFORMATION

For classification and labeling of chemicals in accordance with the applicable rules and regulations in the EU or each country, refer to GHS classification of this product (See Section 2).

PRODUCT NAME: n-Hexatriacontane

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16. OTHER INFORMATION

NOTICE:

The information contained in the SDS description is applicable exclusively to the chemical substance identified herein and for its intended use as an analytical reference standard or reagent and to the unit quantity intended for that purpose. The information does not relate to, and may not be appropriate for, any application or larger quantity of the substance described. Our products are intended for the use by individuals possessing sufficient technical skill and qualification on use the material potential hazardous chemical. Accordingly, no representation or warranty, express or implied, with respect to merchantability and fitness for a particular purpose is made with respect to the information contained herein.

Attention:

SDS No.1021-41380 Revised date September 28, 2018 1/4 page

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : n-Octatriacontane
NAME OF SUPPLIER : GL Sciences Inc.

ADDRESS : 22-1 Nishishinjuku 6-chome Shinjuku-ku Tokyo 163-1130, Japan

CHARGE SECTION : International Sales Section

TELEPHONE No. : +81-3-5323-6620 FACSIMILE No. : +81-3-5323-6621

PRODUCT No. : 1021-41380, 1021-59035

SDS No. : 1021-41380

Research use only.

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION : Classification not possible

HAZARDS SYMBOL : --SIGNAL WORD : --HAZARD STATEMENTS : ---

HAZARD INFORMATIONS : May cause respiratory tract irritation if inhaled.

May cause eye, skin and mucous irritations if contact with.

May be harmful if ingested.

May induce damage to the lung through prolonged or repeated exposure.

MOST IMPORTANT HAZARDS : No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY : n-Octatriacontane

SYNONYMS : --CONTENT : 99 %
CHEMICAL FORMULA : C38H78
CAS RN : 7194-85-6
TSCA INVENTRY : Listed
EINECS No. : 230-560-3

4. FIRST AID MEASURES

GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable

dust and/or fumes, use self-contained breathing apparatus and dust

impervious protective suit. Use personal protective equipment.

INHALATION : Move victim to fresh air and gargle. If breathing is difficult, give oxygen.

If irritation persists, consult a physician.

SKIN CONTACT : Remove contaminated clothes and shoes, rinse skin with plenty of water or

shower. Use soap to help assure removal. If irritation persists, consult a

physician.

EYE CONTACT : Remove any contact lenses at once. Flush eyes well with flooding large

amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a

physician.

INGESTION : Rinse mouth, give plenty of water to vomit. Never give anything by mouth to an

unconscious person. Consult a physician

4. FIRST AID MEASURES

GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable

dust and/or fumes, use self-contained breathing apparatus and dust

impervious protective suit. Use personal protective equipment.

INHALATION : Move victim to fresh air and gargle. If breathing is difficult, give oxygen.

If irritation persists, consult a physician.

SKIN CONTACT : Remove contaminated clothes and shoes, rinse skin with plenty of water or

shower. Use soap to help assure removal. If irritation persists, consult a

PRODUCT NAME: n-Octatriacontane

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EYE CONTACT : Remove any contact lenses at once. Flush eyes well with flooding large

amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a

physician.

INGESTION : Rinse mouth, give plenty of water to vomit. Never give anything by mouth to an

unconscious person. Consult a physician.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA : Carbon dioxide, dry chemical powder, foam, water spray FIRE & EXPLOSION HAZARDS : Toxic and irritating dust, fumes or smoke may be emitted.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS

: Fireman should wear normal protective equipment (full bunker gear) and

positive-pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS : Avoid raising dust and avoid contact with skin and eyes.

In case of insufficient ventilation, wear suitable respiratory equipment.

ENVIRONMENTAL PRECATIONS : Prevent spills from entering sewers, watercourses or low areas.

Comply with local disposal regulations.

METHODS FOR CLEANING UP : Do not touch spilled material without suitable protection. After material is

completely picked up, wash the spill site with soap and water and ventilate the area. Pull all wastes in a plastic bag for disposal and seal it tightly. Remove,

clean, or dispose contaminated clothing.

7. HANDLING AND STORAGE

HANDLING : Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated

exposure. Handle this product with appropriate protective equipments.

STORAGE : Store away from sunlight in well-ventilated dry place at room temperature.

Keep the product in an original box after use it.

INCOMPATIBLE PRODUCTS : Strong oxidizers and strong acids

8. EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING MEASURES : Use exhaust ventilation to keep airborne concentrations below exposure limits.

Use adequate ventilation.

VENTILATION : Local Exhaust ; Recommended, Mechanical(General) ; Recommended

PERSONAL PROTECTION

RESPRATORY PROTECTION : Safety mask

HAND PROTECTION : Chemical resistant gloves
EYE PROTECTION : Safety glasses(goggles)
SKIN PROTECTION : Protective clothing

CONTROL PARAMETERS

OSHA PEL : Not established NIOSH REL : Not established ACGIH : Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE : White – nearly white PHYSICAL STATE : Solid or powder ODOR : No data available pH : No data available BOILING POINT : No data available

MELTING POINT : 77~79 °C

FLASH POINT : No data available

FLAMMABILITY(solid, gas) : >110 °C

AUTOIGNITION TEMPERATURE : No data available VAPOR PRESSURE : No data available SPACIFIC GRAVITY (DENSITY) : No data available

SOLUBILITY IN : Water : Practically Insoluble, Organic solvents : Slightly soluble

PARTITION COEFFICIENT; n-octanol/water

: No data available

DECOMPOSITION TEMPERATURE

PRODUCT NAME: n-Octatriacontane

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10. STABILITY AND REACTIVITY

REACTIVITY : Stable under recommended storage conditions. CHEMICAL STABILITY : Stable under recommended storage conditions.

CONDITION TO AVOID : Sunlight, heat INCOMPATIBILE MATERIALS : Oxidizers HAZARDOUS DECOMPOSITION PRODUCTS : CO, CO²

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY : No data available SKIN CORROSION/IRRITATION : No data available EYE DAMAGE/EYE IRRITATION : No data available

RESPIRATORY OR SKIN SENSITIZATION

: No data available
GERM CELL MUTAGENICITY : No data available
CARCINOGENICITY : No data available
REPRODUCTIVE TOXICITY : No data available

SPECIFIC TARGET ORGAN TOXICITY

: No data available

ASPIRATION TOXICITY : No data available

POTENTIAL HEALTH EFFECTS

Inhalation : May be harmful if inhaled. May cause respiratory tract irritation

Ingestion : May be harmful if swallowed.

Skin : May be harmful if absorbed through skin. May cause skin irritation

Eyes : May cause eye irritation.

ADDITIONAL INFORMATION

NTP : Not listed IARC : Not listed OSHA : Not listed ACGIH : Not listed

12. ECOLOGICAL INFORMATION

ECOTOXICITY : No data available BIODEGRADABILITY : No data available BIOACCUMULATION POTENTIAL : No data available MOBILITY IN SOIL : No data available

OTHER ADVERSE EFFECTS : Not listed in Montreal Protocol list.

13. DISPOSAL INFORMATION

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber in accordance with all applicable regulations. Any disposal practice must be in compliance with country, local, state, and federal laws and regulations (contact country, local or state environmental agency for specific rules). After contents are completely removed, dispose of its container at hazardous or special waste collection point (in accordance with local/regional/national/international regulation).

14. TRANSPORT INFORMATION

IATA : Not Restricted
ADR/RID : Not dangerous goods

DOT(Department of Transportation): Not a Hazardous Material for DOT shipping

MARINE POLLUTANT : Yes

15. REGULATORY INFORMATION

For classification and labeling of chemicals in accordance with the applicable rules and regulations in the EU or each country, refer to GHS classification of this product (See Section 2).

PRODUCT NAME: n-Octatriacontane

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16. OTHER INFORMATION

NOTICE:

The information contained in the SDS description is applicable exclusively to the chemical substance identified herein and for its intended use as an analytical reference standard or reagent and to the unit quantity intended for that purpose. The information does not relate to, and may not be appropriate for, any application or larger quantity of the substance described. Our products are intended for the use by individuals possessing sufficient technical skill and qualification on use the material potential hazardous chemical. Accordingly, no representation or warranty, express or implied, with respect to merchantability and fitness for a particular purpose is made with respect to the information contained herein.

Attention:

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1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : n-Tetracontane
NAME OF SUPPLIER : GL Sciences Inc.

ADDRESS : 22-1 Nishishinjuku 6-chome Shinjuku-ku Tokyo 163-1130, Japan

CHARGE SECTION : International Sales Section

TELEPHONE No. : +81-3-5323-6620 FACSIMILE No. : +81-3-5323-6621

PRODUCT No. : 1021-41400, 1021-59035

SDS No. : 1021-41400

Research use only.

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION : Classification not possible

HAZARDS SYMBOL : --SIGNAL WORD : --HAZARD STATEMENTS : --PRECAUTIONARY STATEMENTS : ---

HAZARD INFORMATIONS : May cause respiratory tract irritation if inhaled.

May cause eye, skin and mucous irritations if contact with.

May be harmful if ingested.

May induce damage to the lung through prolonged or repeated exposure.

MOST IMPORTANT HAZARDS : No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY : n-Tetracontane

SYNONYMS : --CONTENT : 99 %
CHEMICAL FORMULA : C40H82
CAS RN : 4181-95-7
TSCA INVENTRY : Listed
EINECS No. : 224-055-7

4. FIRST AID MEASURES

GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable

dust and/or fumes, use self-contained breathing apparatus and dust

impervious protective suit. Use personal protective equipment.

INHALATION : Move victim to fresh air and gargle. If breathing is difficult, give oxygen.

If irritation persists, consult a physician.

SKIN CONTACT : Remove contaminated clothes and shoes, rinse skin with plenty of water or

shower. Use soap to help assure removal. If irritation persists, consult a

physician.

EYE CONTACT : Remove any contact lenses at once. Flush eyes well with flooding large

amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a

physician.

INGESTION : Rinse mouth, give plenty of water to vomit. Never give anything by mouth to an

unconscious person. Consult a physician

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PRODUCT NAME: n-Tetracontane

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amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a

physician.

INGESTION : Rinse mouth, give plenty of water to vomit. Never give anything by mouth to an

unconscious person. Consult a physician.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA : Carbon dioxide, dry chemical powder, foam, water spray FIRE & EXPLOSION HAZARDS : Toxic and irritating dust, fumes or smoke may be emitted.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS

: Fireman should wear normal protective equipment (full bunker gear) and

positive-pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS : Avoid raising dust and avoid contact with skin and eyes.

In case of insufficient ventilation, wear suitable respiratory equipment.

ENVIRONMENTAL PRECATIONS : Prevent spills from entering sewers, watercourses or low areas.

Comply with local disposal regulations.

METHODS FOR CLEANING UP : Do not touch spilled material without suitable protection. After material is

completely picked up, wash the spill site with soap and water and ventilate the area. Pull all wastes in a plastic bag for disposal and seal it tightly. Remove,

clean, or dispose contaminated clothing.

7. HANDLING AND STORAGE

HANDLING : Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated

exposure. Handle this product with appropriate protective equipments.

STORAGE : Store away from sunlight in well-ventilated dry place at room temperature.

Keep the product in an original box after use it.

INCOMPATIBLE PRODUCTS : Strong oxidizers and strong acids

8. EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING MEASURES : Use exhaust ventilation to keep airborne concentrations below exposure limits.

Use adequate ventilation.

VENTILATION : Local Exhaust ; Recommended, Mechanical(General) ; Recommended

PERSONAL PROTECTION

RESPRATORY PROTECTION : Safety mask

HAND PROTECTION : Chemical resistant gloves
EYE PROTECTION : Safety glasses(goggles)
SKIN PROTECTION : Protective clothing

CONTROL PARAMETERS

OSHA PEL : Not established

NIOSH REL : Not established

ACGIH : Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE : White – nearly white PHYSICAL STATE : Solid or powder ODOR : No data available pH : No data available BOILING POINT : No data available

MELTING POINT : 80~82 °C

FLASH POINT : No data available
FLAMMABILITY(solid, gas) : No data available
AUTOIGNITION TEMPERATURE : No data available
VAPOR PRESSURE : No data available
SPACIFIC GRAVITY (DENSITY) : No data available

SOLUBILITY IN : Water : Practically Insoluble, Organic solvents : Slightly soluble

PARTITION COEFFICIENT; n-octanol/water

: No data available

DECOMPOSITION TEMPERATURE

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10. STABILITY AND REACTIVITY

REACTIVITY : Stable under recommended storage conditions. CHEMICAL STABILITY : Stable under recommended storage conditions.

CONDITION TO AVOID : Sunlight, heat INCOMPATIBLE MATERIALS : Oxidizers HAZARDOUS DECOMPOSITION PRODUCTS

: CO, CO2

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY : No data available SKIN CORROSION/IRRITATION : No data available EYE DAMAGE/EYE IRRITATION : No data available

RESPIRATORY OR SKIN SENSITIZATION

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GERM CELL MUTAGENICITY : No data available
CARCINOGENICITY : No data available
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ASPIRATION TOXICITY : No data available

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Skin : May be harmful if absorbed through skin. May cause skin irritation

Eyes : May cause eye irritation.

ADDITIONAL INFORMATION

NTP : Not listed
IARC : Not listed
OSHA : Not listed
ACGIH : Not listed

12. ECOLOGICAL INFORMATION

ECOTOXICITY : No data available
BIODEGRADABILITY : No data available
BIOACCUMULATION POTENTIAL : No data available
MOBILITY IN SOIL : No data available

OTHER ADVERSE EFFECTS : Not listed in Montreal Protocol list.

13. DISPOSAL INFORMATION

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber in accordance with all applicable regulations. Any disposal practice must be in compliance with country, local, state, and federal laws and regulations (contact country, local or state environmental agency for specific rules). After contents are completely removed, dispose of its container at hazardous or special waste collection point (in accordance with local/regional/national/international regulation).

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PRODUCT NAME: n-Tetracontane

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Attention: