



CERTIFICATE OF ANALYSIS

Product Name	Hot Cocoa
Product Type	Fragrance Oil
Product Code	OFHOTCOCO
Batch No	4346704
Production Date	January 2019
Best Before End	January 2022

Tests	Specifications	Results
Odour	According to Standard	Conforms
Appearance	Mid to dark yellow oily liquid	Conforms
Solubility in water (10%)	Insoluble	Conforms
Solubility in other solvents (10%)	Soluble in Ethyl alcohol	Conforms

Storage Store in well sealed containers in cool, dry, dark place. Ideal temperature between 15-20 degrees Centigrade (59-70 degrees Fahrenheit).

Shelf Life Shelf life of this product depends very much on storage conditions, particularly temperature and exposure to light and air. Shelf life must be considered as subjective - the shelf life given here is based on the best of our knowledge and experience of the material when stored under recommended conditions in original unopened containers. Due to the natural ingredients contained in many of our products, there may be a slight batch to batch variation in the colour, odour or consistency. However we ensure that this does not effect the quality and efficacy of the products in any way.

ALLERGEN DECLARATION

We hereby confirm that the following item contains the components listed below. Stated are the total levels added plus levels from natural ingredients. The information is supplied to enable compliance with Cosmetic and Detergent regulations.

Hot Cocoa Madar Corp

Ingredient	CAS	EC	Concentration (%)
Benzyl alcohol	100-51-6	202-859-9	0.1777%
Benzyl benzoate	120-51-4	204-402-9	2.1%

Regulatory Affairs Department

SAFETY DATA SHEET

In accordance with REACH Regulation EC No.1907/2006

Product: Hot Cocoa Madar Corp

Version: 1

Section 1. Identification of the substance or the mixture and of the supplier

1.1 Product Identifier

Product identifier: Hot Cocoa Madar Corp (Contains:Butyl lactate, Diacetyl, Ethyl acetate, Vanillin)

Other identifiers: None

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product uses: Fragrances

1.3 Details of the supplier of the safety data sheet

Company name: MADAR Corporation Limited

Company address: 19-20 Sandleheath Industrial Estate,
Fordingbridge,
Hampshire,
SP6 1PA

Contact: Pat

E-Mail address: technical@madarcorporation.co.uk

Company phone: 01425 655555

1.4 Emergency telephone number

Emergency phone: 01425 655555

Section 2. Hazards identification

2.1 Classification of the substance or mixture

Classification under Regulation (EC) No 1272/2008

Class and category of danger: Flammable Liquid, Hazard Category 3
Eye Damage / Irritation Category 2
H226, Flammable liquid and vapour.
H319, Causes serious eye irritation.

2.2 Label elements

Signal word: Warning

Hazard statements: H226, Flammable liquid and vapour.
H319, Causes serious eye irritation.

Supplemental Information: EUH208, Contains 3-Methylbutyraldehyde. May produce an allergic reaction.

Precautionary statements: P210, Keep away from heat, sparks, open flames and hot surfaces. - No smoking.
P233, Keep container tightly closed.
P240, Ground/bond container and receiving equipment.

SAFETY DATA SHEET

In accordance with REACH Regulation EC No.1907/2006

Product: Hot Cocoa Madar Corp

Version: 1

P241, Use explosion-proof electrical, ventilating and lighting equipment.
P242, Use only non-sparking tools.
P243, Take precautionary measures against static discharge.
P264, Wash hands and other contacted skin thoroughly after handling.
P280, Wear protective gloves/eye protection/face protection.
P303/361/353, IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P305/351/338, IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337/313, If eye irritation persists: Get medical advice/attention.
P370/378, In case of fire: Use carbon dioxide, dry chemical, foam for extinction.
P403/235, Store in a well-ventilated place. Keep cool.
P501, Dispose of contents/container to approved disposal site, in accordance with local regulations.

Pictograms:



Other hazards: None

Section 3. Composition / information on ingredients

3.2 Mixtures

Contains:

Name	CAS	EC	REACH Registration No.	%	Classification for (CLP) 1272/2008
Vanillin	121-33-5	204-465-2		5-<10%	EDI 2;H319,-
Ethyl maltol	4940-11-8	225-582-5		1-<5%	ATO 4;H302,-
Butyl lactate	138-22-7	205-316-4		1-<5%	SCI 2-EDI 2;H315-H319,-
Benzyl benzoate	120-51-4	204-402-9		1-<5%	ATO 4-EH A1-EH C2; H302-H400-H411,-
gamma-Undecalactone	104-67-6	203-225-4		1-<5%	EH C3;H412,-
Ethyl acetate	141-78-6	205-500-4		1-<5%	FL 2-EDI 2-STO-SE 3 (NE);H225-H319-H336,-
3-Methylbutyraldehyde	590-86-3	209-691-5		0.1-<1%	FL 2-EDI 2-SS 1B-STO-SE 3(RI)-EH C2; H225-H317-H319-H335-H411,-
Diacetyl	431-03-8	207-069-8		0.1-<1%	FL 2-ATO 4-ATI 3-SCI 2-EDI 1-SS 1-STO-RE 2;H225-H302-H315-H317-H318-H331-H373,-

SAFETY DATA SHEET

In accordance with REACH Regulation EC No.1907/2006

Product: Hot Cocoa Madar Corp

Version: 1

Substances with Community workplace exposure limits:

Not Applicable

Substances that are persistent, bioaccumulative and toxic or very persistent and very bioaccumulative, greater than 0.1%:

Not Applicable

Section 4. First-aid measures

4.1 Description of first aid measures

IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

4.2 Most important symptoms and effects, both acute and delayed

Causes serious eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed

None expected, see Section 4.1 for further information.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable media: Carbon dioxide, Dry chemical, Foam.

5.2 Special hazards arising from the substance or mixture

In case of fire, may be liberated: Carbon monoxide, Unidentified organic compounds.

5.3 Advice for fire fighters:

In case of insufficient ventilation, wear suitable respiratory equipment.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Avoid inhalation. Avoid contact with skin and eyes. See protective measures under Section 7 and 8.

6.2 Environmental precautions:

Keep away from drains, surface and ground water, and soil.

6.3 Methods and material for containment and cleaning up:

Remove ignition sources. Provide adequate ventilation. Avoid excessive inhalation of vapours. Contain spillage immediately by use of sand or inert powder. Dispose of according to local regulations.

SAFETY DATA SHEET

In accordance with REACH Regulation EC No.1907/2006

Product: Hot Cocoa Madar Corp

Version: 1

6.4 Reference to other sections:

Also refer to sections 8 and 13.

Section 7. Handling and storage

7.1 Precautions for safe handling:

Keep away from heat, sparks, open flames and hot surfaces. - No smoking.

7.2 Conditions for safe storage, including any incompatibilities:

Ground/bond container and receiving equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

7.3 Specific end use(s):

Fragrances: Use in accordance with good manufacturing and industrial hygiene practices.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Workplace exposure limits: Not Applicable

8.2 Exposure Controls

Eye / Skin Protection

Wear protective gloves/eye protection/face protection

Respiratory Protection

Under normal conditions of use and where adequate ventilation is available to prevent build up of excessive vapour, this material should not require special engineering controls. However, in conditions of high or prolonged use, or high temperature or other conditions which increase exposure, the following engineering controls can be used to minimise exposure to personnel: a) Increase ventilation of the area with local exhaust ventilation. b) Personnel can use an approved, appropriately fitted respirator with organic vapour cartridge or canisters and particulate filters. c) Use closed systems for transferring and processing this material.

Also refer to Sections 2 and 7.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance: Not determined

Odour: Not determined

Odour threshold: Not determined

pH: Not determined

Melting point / freezing point: Not determined

SAFETY DATA SHEET

In accordance with REACH Regulation EC No.1907/2006

Product: Hot Cocoa Madar Corp

Version: 1

Initial boiling point / range:	Not determined
Flash point:	54 °C
Evaporation rate:	Not determined
Flammability (solid, gas):	Not determined
Upper/lower flammability or explosive limits:	Product does not present an explosion hazard
Vapour pressure:	Not determined
Vapour density:	Not determined
Relative density:	Not determined
Solubility(ies):	Not determined
Partition coefficient: n-octanol/water:	Not determined
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
Viscosity:	Not determined
Explosive properties:	Not expected
Oxidising properties:	Not expected

9.2 Other information: None available

Section 10. Stability and reactivity

10.1 Reactivity:

Presents no significant reactivity hazard, by itself or in contact with water.

10.2 Chemical stability:

Good stability under normal storage conditions.

10.3 Possibility of hazardous reactions:

Not expected under normal conditions of use.

10.4 Conditions to avoid:

Avoid extreme heat.

10.5 Incompatible materials:

Avoid contact with strong acids, alkalis or oxidising agents.

10.6 Hazardous decomposition products:

Not expected.

Section 11. Toxicological information

11.1 Information on toxicological effects

This mixture has not been tested as a whole for health effects. The health effects have been calculated using the methods outlined in Regulation (EC) No 1272/2008 (CLP).

Acute Toxicity:	Based on available data the classification criteria are not met.
Acute Toxicity Oral	>5000

SAFETY DATA SHEET

In accordance with REACH Regulation EC No.1907/2006

Product: Hot Cocoa Madar Corp

Version: 1

Acute Toxicity Dermal >5000
 Acute Toxicity Inhalation Not Available
Skin corrosion/irritation: Based on available data the classification criteria are not met.
Serious eye damage/irritation: Eye Damage / Irritation Category 2
Respiratory or skin sensitisation: Based on available data the classification criteria are not met.
Germ cell mutagenicity: Based on available data the classification criteria are not met.
Carcinogenicity: Based on available data the classification criteria are not met.
Reproductive toxicity: Based on available data the classification criteria are not met.
STOT-single exposure: Based on available data the classification criteria are not met.
STOT-repeated exposure: Based on available data the classification criteria are not met.
Aspiration hazard: Based on available data the classification criteria are not met.

Information about hazardous ingredients in the mixture

Ingredient	CAS	EC	LD50/ATE Oral	LD50/ATE Dermal	LC50/ATE Inhalation	LC50 Route
Benzyl benzoate	120-51-4	204-402-9	1500	4000	Not available	Not available
Diacetyl	431-03-8	207-069-8	1580	Not available	3	Vapour
Ethyl maltol	4940-11-8	225-582-5	1200	Not available	Not available	Not available

Refer to Sections 2 and 3 for additional information.

Section 12. Ecological information

12.1 Toxicity: Not available
12.2 Persistence and degradability: Not available
12.3 Bioaccumulative potential: Not available
12.4 Mobility in soil: Not available

12.5 Results of PBT and vPvB assessment:

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

12.6 Other adverse effects: Not available

Section 13. Disposal considerations

13.1 Waste treatment methods:

Dispose of in accordance with local regulations. Avoid disposing into drainage systems and into the environment. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14. Transport information

14.1 UN number: UN1169
14.2 UN Proper Shipping Name: EXTRACTS, AROMATIC, LIQUID
14.3 Transport hazard class(es): 3

SAFETY DATA SHEET

In accordance with REACH Regulation EC No.1907/2006

Product: Hot Cocoa Madar Corp

Version: 1

Sub Risk: -

14.4. Packing Group: III

14.5 Environmental hazards: Not environmentally hazardous for transport

14.6 Special precautions for user: None additional

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

Not applicable

Section 15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

None additional

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out for this product.

Section 16. Other information

Concentration % Limits: EDI 2=82.79%

Total Fractional Values: EDI 2=1.21

Key to revisions:

Not applicable

Key to abbreviations:

Abbreviation	Meaning
ATI 3	Acute Toxicity - Inhalation Category 3
ATO 4	Acute Toxicity - Oral Category 4
EDI 1	Eye Damage / Irritation Category 1
EDI 2	Eye Damage / Irritation Category 2
EH A1	Hazardous to the Aquatic Environment - Acute Hazard Category 1
EH C2	Hazardous to the Aquatic Environment - Long-term Hazard Category 2
EH C3	Hazardous to the Aquatic Environment - Long-term Hazard Category 3
EUH066	Repeated exposure may cause skin dryness or cracking.
FL 2	Flammable Liquid, Hazard Category 2
H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.

SAFETY DATA SHEET

In accordance with REACH Regulation EC No.1907/2006

Product: Hot Cocoa Madar Corp

Version: 1

H373	May cause damage to organs (organs) through prolonged or repeated exposure (exposure route).
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
P210	Keep away from heat, sparks, open flames and hot surfaces. - No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical, ventilating and lighting equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe vapour or dust.
P261	Avoid breathing vapour or dust.
P264	Wash hands and other contacted skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/eye protection/face protection.
P301/312	IF SWALLOWED: call a POISON CENTER or doctor/physician if you feel unwell.
P302/352	IF ON SKIN: Wash with plenty of soap and water.
P303/361/353	IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P304/340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305/351/338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P312	Call a POISON CENTRE or doctor/physician if you feel unwell.
P330	Rinse mouth.
P332/313	If skin irritation occurs: Get medical advice/attention.
P333/313	If skin irritation or rash occurs: Get medical advice/attention.
P337/313	If eye irritation persists: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.
P363	Wash contaminated clothing before reuse.
P370/378	In case of fire: Use carbon dioxide, dry chemical, foam for extinction.
P391	Collect spillage.
P403/233/235	Store in a well-ventilated place. Keep container tightly closed. Keep cool.
P403/235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container to approved disposal site, in accordance with local regulations.
SCI 2	Skin Corrosion / Irritation Category 2
SS 1	Sensitization - Skin Category 1
SS 1B	Sensitization - Skin Category 1B
STO-RE 2	Specific Target Organ Toxicity (Repeated Exposure) Category 2

SAFETY DATA SHEET

In accordance with REACH Regulation EC No.1907/2006

Product: Hot Cocoa Madar Corp

Version: 1

STO-SE 3(NE)	Specific Target Organ Toxicity (Single Exposure) Category 3
STO-SE 3(RI)	Specific Target Organ Toxicity (Single Exposure) Category 3

The information in this safety data sheet is to the best of our knowledge true and accurate but all data, instructions, recommendations and/or suggestions are made without guarantee.

IFRA CONFORMITY CERTIFICATE

Customer: MADAR Corporation Limited

Product: Hot Cocoa Madar Corp

We certify that the above item is in compliance with the Standards of the INTERNATIONAL FRAGRANCE ASSOCIATION (IFRA - 48th Amendment / published June 2015), provided it is used in the following classes at a maximum concentration level of:

IFRA classes [see annex for detail]	Maximum level of use (%)
IFRA Class 1 Limit	Not approved
IFRA Class 2 Limit	100%
IFRA Class 3.A Limit	100%
IFRA Class 3.B Limit	100%
IFRA Class 3.C Limit	100%
IFRA Class 3.D Limit	100%
IFRA Class 4.A Limit	100%
IFRA Class 4.B Limit	100%
IFRA Class 4.C Limit	100%
IFRA Class 4.D Limit	100%
IFRA Class 5 Limit	100%
IFRA Class 6 Limit	Not approved
IFRA Class 7.A Limit	100%
IFRA Class 7.B Limit	100%
IFRA Class 8.A Limit	95.23%
IFRA Class 8.B Limit	95.23%
IFRA Class 9.A Limit	100%
IFRA Class 9.B Limit	100%
IFRA Class 9.C Limit	100%
IFRA Class 10.A Limit	100%
IFRA Class 10.B Limit	100%
IFRA Class 11 Limit	100%

IFRA CONFORMITY CERTIFICATE

For other kinds of application or use at higher concentration levels, a new evaluation may be needed; please contact MADAR Corporation Limited.

Contains the following substances restricted by the current IFRA Standards:-

Ingredient	CAS	Concentration (%)
Benzyl alcohol	100-51-6	0.1777%
Benzyl benzoate	120-51-4	2.1%

The IFRA Standards regarding use restrictions are based on safety assessments by the Panel of Experts of the RESEARCH INSTITUTE FOR FRAGRANCE MATERIALS (RIFM) and are enforced by the IFRA Scientific Committee.

Evaluation of individual Fragrance ingredients is made according to the safety standards contained in the relevant section of the IFRA Code of Practice.

It is the ultimate responsibility of our customer to ensure the safety of the final product (containing this fragrance) by further testing if need be.

Regulatory Affairs Department

IFRA CONFORMITY CERTIFICATE

ANNEX: Definition of IFRA Classes

Finished product types	IFRA class
Lip Products of all types (solid and liquid lipsticks, balms, clear or colored, etc.); Children's Toys	IFRA Class 1 Limit
Deodorant and Antiperspirant Products of all types including any product with intended or reasonably foreseeable use on the axillae or labelled as such (spray, stick, roll-on, under-arm, deo-cologne and body spray, etc.); Nose pore strips; Fragranced Bracelets	IFRA Class 2 Limit
Hydroalcoholic Products Applied To Recently Shaved Skin (includes After Shave) (Edt range)	IFRA Class 3.A Limit
Hydroalcoholic Products Applied To Recently Shaved Skin (includes After Shave) (Fine fragrance range)	IFRA Class 3.B Limit
Eye Products of all types (eye shadow, mascara, eyeliner, eye make-up, etc.) including eye care; Men's Facial Creams and Balms; Baby Creams, Lotions, Oils; Body Paint for Children	IFRA Class 3.C Limit
Tampons	IFRA Class 3.D Limit
Hydroalcoholic Products applied to unshaved skin (includes aqueous based, alcoholic based and hydroalcoholic) like Cologne, eau de cologne, Eau de Parfum or Parfum (Edt range); Ingredients of Perfume Kits; Scent Pads, Foil packs; Scent Strips for hydroalcoholic products	IFRA Class 4.A Limit
Hydroalcoholic Products applied to unshaved skin (includes aqueous based, alcoholic based and hydroalcoholic) like Cologne, eau de cologne, Eau de Parfum or Parfum (Fine fragrance range)	IFRA Class 4.B Limit
Hair Styling Aids Sprays of all types (pumps, aerosol sprays, etc.); Body Creams, Oils, Lotions of all types (except baby creams, lotions and oils); Body sprays (including Body Mist) with no intended or reasonably foreseeable use on the axillae; Fragrance Compounds for Cosmetic Kits; Foot Care Products; Hair deodorant; Body Paint (except those for children)	IFRA Class 4.C Limit
Fragrancing Cream; Solid perfumes	IFRA Class 4.D Limit
Women's Facial Creams/Facial Make-up; Hand Cream; Hand sanitizers; Facial Masks; Baby Powder and Talc; Hair Permanent and other hair chemical treatments (e.g. relaxers) but not hair dyes; Wipes or Refreshing Tissues for Face, Neck, Hands, Body; Dry Shampoo or Waterless Shampoo	IFRA Class 5 Limit
Mouthwash, including Breath Sprays; Toothpaste	IFRA Class 6 Limit
Intimate Wipes; Baby Wipes	IFRA Class 7.A Limit
Insect Repellent (intended to be applied to the skin)	IFRA Class 7.B Limit
Make-up Removers of all types (not including face cleansers); Hair Styling Aids Non-Spray of all types (mousse, gels, leave-in conditioners, etc.); Nail Care; Powders and talcs, all types (except baby powders and talcs)	IFRA Class 8.A Limit
Hair Dyes	IFRA Class 8.B Limit
Conditioner (Rinse-Off); Liquid Soap; Shampoos of all types (including baby shampoos); Face Cleansers of all types (washes, gels, scrubs, etc.); Shaving Creams of all types (stick, gels, foams, etc.); All Depilatories (including waxes for mechanical hair removal); Body Washes of all types (including baby washes) and Shower Gels of all types; Bar Soap (Toilet Soap); Bath Gels, Foams, Mousses, Salts, Oils and Other Products added to bathwater	IFRA Class 9.A Limit
Feminine hygiene - pads, liners; Toilet paper; Wheat bags	IFRA Class 9.B Limit
Facial tissues; Napkins; Paper towels; Other Aerosols (including air freshener sprays and air freshener pump sprays, but not including deodorants/antiperspirants, hair styling aids sprays); Fragranced Face Masks (not intended to be used as medical device)	IFRA Class 9.C Limit
Handwash Laundry Detergents of all types including concentrates; Fabric Softeners of all types including fabric softener sheets; Household Cleaning Products, Other Types (fabric cleaners, soft surface cleaners, carpet cleaners, etc.); Machine Wash Laundry Detergents (liquids, powders, tablets, etc.) including laundry bleach and concentrates; Hand Dishwashing Detergent including concentrates; Hard Surface Cleaners of all types (bathroom and kitchen cleansers, furniture polish, etc.); Shampoos for pets; Dry cleaning kits; Scented gloves, socks, tights with moisturizers	IFRA Class 10.A Limit
Diapers; Toilet seat wipes	IFRA Class 10.B Limit
All non-skin contact or incidental skin contact including: Candles; Air Fresheners and Fragrancing of all types (concentrated aerosol with metered doses (range 0.05-0.5mL/spray), plug-ins, solid substrate, membrane delivery, electrical); Air Delivery Systems; Cell phone cases; Pot pourri, powders, fragrancing sachets, liquid refills for air fresheners (non-cartridge systems), Reed diffusers; Liquid refills for air fresheners (cartridge systems); Shoe Polishes; Deodorizers/Maskers not intended for skin contact (e.g. fabric drying machine deodorizers, carpet powders); Insecticides (mosquito coil, paper, electrical, for clothing etc.) excluding aerosols; Scent delivery system using a dry air technology that releases a fragrance without sprays, aerosols or heated oils (technology of nebulization); Air freshening crystals; Toilet Blocks; Joss Sticks or Incense Sticks; Machine Dishwash Detergent and Deodorizers; Machine-only Laundry Detergent (e.g. liquitabs); Plastic articles (excluding toys); Fuels; Fragranced lamp ring; Scent pack; Scratch and Sniff (sampling technology); Paints; Cat litter; Animal sprays (all types); Treatment products for textiles (e.g. starch sprays, fabric treated with fragrances after wash, deodorizers for textiles or fabrics); Floor wax; Odored Distilled Water (that can be added to steam irons)	IFRA Class 11 Limit