

SAFETY DATA SHEET

Based upon Regulation (EC) No 1907/2006, as amended by Regulation (EU) No 2015/830

ethane, liquefied, under pressure

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name	: ethane, liquefied, under pressure
Synonyms	 AB2/AB1-17; bimethyl, liquefied, under pressure; dimethyl, liquefied, under pressure; ERCL-ethane; ethane; ethyl hydride, liquefied, under pressure; methylmethane, liquefied, under pressure; process stream (=ethane, liquefied, under pressure); R170
Registration number REACH	: 01-2119486765-21
Product type REACH	: Substance/mono-constituent
CAS number	: 74-84-0
EC index number	: 601-002-00-X
EC number	: 200-814-8
RTECS number	: KH3800000
Molecular mass	: 30.07 g/mol
Formula	: C2H6

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

1.2.1 Relevant identified uses

Industrial and professional use. Before use: carry out a risk assessment

1.2.2 Uses advised against

No uses advised against known

1.3. Details of the supplier of the safety data sheet

Supplier of the safety data sheet

Distributor of the product

1.4. Emergency telephone number

24h/24h (Telephone advice: English, French, German, Dutch):

+32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008						
Class	Category	Hazard statements				
Flam. Gas	category 1	H220: Extremely flammable gas.				
Press. Gas	Liquefied gas	H280: Contains gas under pressure; may explode if heated.				

2.2. Label elements



Revision number: 0000

Product number: 10176

H-statements

H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.
P-statements	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P381	Eliminate all ignition sources if safe to do so.
P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P410 + P403	Protect from sunlight. Store in a well-ventilated place.

2.3. Other hazards

May build up electrostatic charges: risk of ignition May be ignited by sparks Gas/vapour spreads at floor level: ignition hazard May cause frostbites Large spills/in enclosed spaces: risk of oxygen deficiency May cause frostbites Harmful to fishes Harmful to invertebrates (Daphnia) Harmful to algae

SECTION 3: Composition/information on ingredients

3.1. Substances

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to CLP	Note	Remark
ethane	74-84-0	C>99 %	Flam. Gas 1; H220	(1)(10)(2)	Mono-constituent
01-2119486765-21	200-814-8		Press. Gas - Liquefied gas;		
			H280		

(1) For H-statements in full: see heading 16

(2) Substance with a Community workplace exposure limit

(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

General:

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact:

Rinse with water. Take victim to a doctor if irritation persists. In case of frostbites: Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

After eye contact:

Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist.

After ingestion:

Not applicable.

4.2. Most important symptoms and effects, both acute and delayed

4.2.1 Acute symptoms

After inhalation:

EXPOSURE TO HIGH CONCENTRATIONS: Rapid respiration. Feeling of weakness. Nausea. Vomiting. Headache. Dizziness. Coordination disorders. Respiratory difficulties. Disturbances of consciousness.

After skin contact: Frostbites.

After eye contact:

- Frostbites.
- After ingestion:
- No data available.
- 4.2.2 Delayed symptoms

No effects known.

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4.3. Indication of any immediate medical attention and special treatment needed

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.1.1 Suitable extinguishing media:

Water spray. Polyvalent foam. BC powder. Carbon dioxide.

5.1.2 Unsuitable extinguishing media:

No unsuitable extinguishing media known.

5.2. Special hazards arising from the substance or mixture

Upon combustion: CO and CO2 are formed.

5.3. Advice for firefighters

5.3.1 Instructions:

If no hazard for/from the surroundings: controlled burning. If hazardous substances are nearby: consider extinguishment. Extinguish only if gas supply/leak can be shut afterwards. Cool tanks/drums with water spray/remove them into safety. Physical explosion risk: extinguish/cool from behind cover. Do not move the load if exposed to heat. After cooling: persistant risk of physical explosion.

5.3.2 Special protective equipment for fire-fighters:

Insulating gloves. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus. Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Keep upwind. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment. Avoid ingress of water in the containers.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Insulating gloves. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus.

Suitable protective clothing

See heading 8.2

6.2. Environmental precautions

Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Tip the container on one side to stop the leakage. Try to reduce evaporation. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

Liquid spill: cover with foam. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1. Precautions for safe handling

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Observe normal hygiene standards.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Safe storage requirements:

Storage temperature: <50 °C. Keep container in a well-ventilated place. Fireproof storeroom. Keep locked up. Provide for an automatic sprinkler system. Provide for a tub to collect spills. Provide the tank with earthing. Under a shelter/in the open. Meet the legal requirements.

7.2.2 Keep away from:

Heat sources, ignition sources, oxidizing agents, (strong) acids, halogens.

7.2.3 Suitable packaging material:

Steel, stainless steel, iron.

7.2.4 Non suitable packaging material:

No data available

7.3. Specific end use(s)

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

Belgium

Hydrocarbures aliphatiques sous forme gazeuse : (Alcanes C1- C4)	Time-weighted average exposure limit 8 h	1000 ppm
b) National biological limit values		
If limit values are applicable and available these will be listed b	elow.	
8.1.2 Sampling methods		
If applicable and available it will be listed below.		
8.1.3 Applicable limit values when using the substance or mixture	e as intended	
If limit values are applicable and available these will be listed b	elow.	
8.1.4 DNEL/PNEC values		

If applicable and available it will be listed below.

8.1.5 Control banding

If applicable and available it will be listed below.

8.2. Exposure controls

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Measure the concentration in the air regularly. Work under local exhaust/ventilation.

8.2.2 Individual protection measures, such as personal protective equipment

Observe normal hygiene standards. Do not eat, drink or smoke during work.

a) Respiratory protection:

High vapour/gas concentration: self-contained respirator.

b) Hand protection:

Insulated gloves.

- materials (good resistance)

Chlorinated polyethylene, tetrafluoroethylene, leather.

- materials (less resistance)

Polyethylene.

c) Eye protection:

Protective goggles.

d) Skin protection:

Protective clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical form	Liquefied gas
Odour	Petroleum-like odour
	Mild odour
Odour threshold	899 ppm
Colour	Colourless
Particle size	Not applicable (gas)
Explosion limits	3 - 12.5 vol %
	37 - 195 g/m³
Flammability	Extremely flammable gas.
Log Kow	1.81 ; Experimental value
Dynamic viscosity	0.0095 mPa.s ; 27 °C
Kinematic viscosity	No data available
Melting point	-183 °C ; 1013 hPa
Boiling point	-89 °C ; 1013 hPa
Flash point	-89 °C
Evaporation rate	No data available
Relative vapour density	1.04
Vapour pressure	39000 hPa ; 20 °C
Solubility	water ; 60 mg/l ; 25 °C
	ethanol ; 0.058 g/100 ml
Relative density	0.6 ; -89 °C
Decomposition temperature	No data available
Auto-ignition temperature	472 °C ; 1013 hPa
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties

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No data available

9.2. (

Other information		
Minimum ignition energy	0.24 mJ	
Specific conductivity	< 10000 pS/m	
Critical temperature	32 °C	
Critical pressure	48800 hPa	
Surface tension	0.018 N/m	
Absolute density	546 kg/m³	

SECTION 10: Stability and reactivity

10.1. Reactivity

May build up electrostatic charges: risk of ignition. May be ignited by sparks. Gas/vapour spreads at floor level: ignition hazard.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Violent to explosive reaction with (some) halogens: release of heat and with (strong) oxidizers: (increased) risk of fire/explosion.

10.4. Conditions to avoid

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks.

10.5. Incompatible materials

Oxidizing agents, (strong) acids, halogens.

10.6. Hazardous decomposition products

Upon combustion: CO and CO2 are formed.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

11.1.1 Test results

Acute toxicity

ethane, liquefied, under pressure

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value	Remark
						determination	
Oral						Data waiving	
Dermal						Data waiving	
Inhalation (gases)	LC50		1237 mg/l	2 h	Mouse (male)	Experimental value	

Conclusion

Not classified for acute toxicity

Corrosion/irritation

ethane, liquefied, under pressure

Route of exposure	Result	Method	Exposure time	Time point	Species	Value	Remark
						determination	
Eye						Data waiving	
Skin						Data waiving	

Conclusion

Not classified as irritating to the skin

Not classified as irritating to the eyes

Not classified as irritating to the respiratory system

Respiratory or skin sensitisation

ethane, liquefied, under pressure

Route of exposure	Result	Method	 Observation time point	Species	Value determination	Remark
Skin					Data waiving	
Inhalation					Data waiving	

Conclusion

Not classified as sensitizing for skin

Not classified as sensitizing for inhalation

Specific target organ toxicity

ethane, liquefied, under pressure

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Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time		Value determination
Oral								Data waiving
Dermal								Data waiving
(0)	NOAEC systemic effects	OECD 422	21394 mg/m ³ air		No adverse systemic effects		Rat (male/female)	Experimental value

Conclusion

Not classified for subchronic toxicity

Mutagenicity (in vitro)

ethane, liquefied, under pressure

Result	Method	Test substrate	Effect	Value determination
Negative	OECD 473	Human lymphocytes	No effect	Experimental value
Negative	OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value

Mutagenicity (in vivo)

ethane, liquefied, under pressure

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	OECD 474	13 weeks (6h/day, 5	Rat (male/female)		Read-across
		days/week)			

Carcinogenicity

ethane, liquefied, under pressure

Route of	Parameter	Method	Value	Exposure time	Species	Value	Organ	Effect
exposure						determination		
Inhalation						Data waiving		
Dermal						Data waiving		
Oral						Data waiving		

Reproductive toxicity

ethane, liquefied, under pressure

	Parameter	Method	Value	Exposure time	Species	Effect	- 0.	Value determination
Developmental toxicity	NOAEC	OECD 422	12000 ppm	6 weeks (6h/day, 7 days/week)	Rat (male/female)	No effect		Experimental value
Maternal toxicity	NOAEC	OECD 422	12000 ppm	6 week(s)	Rat (male/female)	No effect		Experimental value
Effects on fertility	NOAEC (P/F1)	OECD 422	21394 mg/m³ air	4 weeks (6h/day, 7 days/week)	Rat (male/female)	No effect		Experimental value

Conclusion CMR

Not classified for carcinogenicity

Not classified for mutagenic or genotoxic toxicity

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

ethane, liquefied, under pressure No (test)data available

Chronic effects from short and long-term exposure

ethane, liquefied, under pressure No effects known.

SECTION 12: Ecological information

12.1. Toxicity

ethane, liquefied, under pressure No (test)data available

Conclusion

Harmful to fishes Harmful to invertebrates (Daphnia) Harmful to algae

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Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008

12.2. Persistence and degradability

ethane, liquefied, under pressure

Method	Value	Duration	Value determination
	72.6 %; Oxygen consumption	35 day(s)	Literature study
hototransformation air (DT5	0 air)		
Method	Value	Conc. OH-radicals	Value determination
	1906 day(s)	5.105 /cm³	Calculated value
lalf-life soil (t1/2 soil)			
Method	Value	Primary	Value determination
		degradation/mineralisation	
Not applicable			

Conclusion

Inherently biodegradable

12.3. Bioaccumulative potential

ethane, liquefied, under pressure

BCF fishes

Parameter	Method		Value	Duration	Species			Value determination
BCF			10					
Log Kow					-			
Method		Remark		Value		Temperature	Val	ue determination
				1.81			Exp	perimental value

Conclusion

Low potential for bioaccumulation (BCF < 500)

12.4. Mobility in soil

Not applicable (gas)

12.5. Results of PBT and vPvB assessment

Substance does not meet the criteria of PBT, nor the criteria of vPvB according to Annex XIII of Regulation (EC) No 1907/2006, so is neither PBT nor vPvB.

12.6. Other adverse effects

ethane, liquefied, under pressure Global warming potential (GWP) Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 517/2014) Ozone-depleting potential (ODP) Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1. Waste treatment methods

13.1.1 Provisions relating to waste

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).

16 05 04* (gases in pressure containers and discarded chemicals: gases in pressure containers (including halons) containing dangerous substances). Depending on branch of industry and production process, also other waste codes may be applicable. Hazardous waste according to Regulation (EU) No 1357/2014.

13.1.2 Disposal methods

Refer to manufacturer/supplier for information on recovery/ recycling. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals.

13.1.3 Packaging/Container

Waste material code packaging (Directive 2008/98/EC).

15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR)

14.1. UN number

UN number

14.2. UN proper shipping name

1035

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	ethane, iiqueneu	, under pressure	
	Proper shipping name	Ethane]
	3. Transport hazard class(es)		1
	Hazard identification number	23	
	Class	2	
	Classification code	2F	
14.	4. Packing group	1	1
	Packing group	2.1	
1/	Labels 5. Environmental hazards	2.1	J
14.	Environmentally hazardous substance mark	no	1
14.	6. Special precautions for user		1
	Special provisions	662]
	Limited quantities	none.]
Rail ((חוא מיני)		
	1. UN number		
14.	UN number	1035	
14.	2. UN proper shipping name		1
	Proper shipping name	Ethane	
14.	3. Transport hazard class(es)		
	Hazard identification number	23	
	Class	2	
	Classification code	2F	
14.	4. Packing group	1	ı
	Packing group	2.4 (. 12)	
14	Labels 5. Environmental hazards	2.1 (+13)	1
14.	Environmentally hazardous substance mark	no	1
14.	6. Special precautions for user		1
	Special provisions	662]
	Limited quantities	none.	
Inlan	d waterways (ADN)	•	
14.	1. UN number UN number	1035	1
14	2. UN proper shipping name	1035	l
	Proper shipping name	Ethane	1
	3. Transport hazard class(es)		1
	Class	2	
	Classification code	2F	
14.	4. Packing group	1	
	Packing group		
	Labels	2.1	
14.	5. Environmental hazards Environmentally hazardous substance mark	no	1
1/	6. Special precautions for user]
14.	Special provisions	662	
	Limited quantities	none.	
See /	IMDG/IMSBC)		-
14.	1. UN number UN number	1035	1
1/	2. UN proper shipping name	12000	1
14.	Proper shipping name	Ethane]
14.	3. Transport hazard class(es)		1
	Class	2.1	
14.	4. Packing group		
	Packing group		
	Labels	2.1	
14.	5. Environmental hazards	1	1
	Marine pollutant	-	
14	Environmentally hazardous substance mark 6. Special precautions for user	no	l
14.	Special provisions		1
	Limited quantities	none.	
14.	7. Transport in bulk according to Annex II of Marpol and the IBC Code		1
	Annex II of MARPOL 73/78	Not applicable	
Air (I	CAO-TI/IATA-DGR)		-
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		Reference number: 1280	
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14. <u>1</u> . UN number	
UN number	1035
14.2. UN proper shipping name	
Proper shipping name	Ethane
14.3. Transport hazard class(es)	
Class	2.1
14.4. Packing group	
Packing group	
Labels	2.1
14.5. Environmental hazards	
Environmentally hazardous substance mark	no
14.6. Special precautions for user	
Special provisions	A1
Passenger and cargo transport: limited quantities: maximum net quantity per packaging	

SECTION 15: Regulatory information

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

European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
100 %	

REACH Annex XVII - Restriction

Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

	Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
• ethane	2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to that Regulation or not.	 1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following: metallic glitter intended mainly for decoration, artificial snow and frost, "whoopee" cushions, silly string aerosols, imitation excrement, horns for parties, decorative flakes and foams, artificial cobwebs, stink bombs.2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with: "For professional users only".3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to a the market unless they conform to the requirements indicated.

National legislation The Netherlands

Waterbezwaarlijkheid 9	Waste identification (the Netherlands)	LWCA (the Netherlands): KGA category 06
	Waterbezwaarlijkheid	9
		9

WGK nwg; Classification non-water polluting in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 1) TA-Luft 5.2.5

National legislation France

No data available

National legislation Belgium

No data available

Other relevant data

No data available

15.2. Chemical safety assessment

A chemical safety assessment has been performed.

SECTION 16: Other information

Full text of any H-statements referred to under headings 2 and 3: H220 Extremely flammable gas.

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H280 Contains gas under pressure; may explode if heated. (*) = INTERNAL CLASSIFICATION BY BIG PBT-substances = persistent, bioaccumulative and toxic substances

CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this are is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.

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