1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Isopropyl Alcohol - CBM
Product code	:	S1119, S1115

Manufacturer or supplier's details

Manufacturer/Supplier	:	**Shell CAPSA** Av. Roque Saenz Peña 788 Buenos Aires, 1383 Argentina
Telephone	:	(+54 11) 4130-2168
Telefax	:	(+54 11) 4130-2180
Emergency telephone number	:	En Argentina: (+11 15) 4970-7391 / 4970-7390 / 5062-6601 / 4973-7368; Desde el exterior: (+54 911) 4970-7391 / 4970-7390 / 5062/6601 / 4973-7368; Teléfono de Emergencia Médica (+54) 11962-6666 / 4962-2247 Centro de Toxicologia Hospital Ricardo Gutiérrez - Ciudad Autónoma de Buenos Aires (Atentión 24 hrs.)

Recommended use of the chemical and restrictions on use

Recommended use	:	Use only in industrial processes.
Restrictions on use	:	Advice in this document relates only to product as originally supplied. Other derivative chemicals will have different properties and hazards. Advice should be sought on their safe handling and use.

2. HAZARDS IDENTIFICATION

Most important hazards

F: Highly flammable	R11: Highly flammable.
Xi: Irritant	R36: Irritating to eyes.
	R67: Vapours may cause drowsiness and dizziness.

Other hazards

Slightly irritating to respiratory system. Vapours are heavier than air. Vapours may travel across the ground and reach remote ignition sources causing a flashback fire danger. Even with proper grounding and bonding, this material can still accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : IPA CBM is the azeotrope (constant boiling mixture) of isopropyl alcohol and water.

Hazardous components

Chemical Name	CAS-No.	Classification	Concentration [%]
Isopropyl alcohol	67-63-0		>= 88 - <= 100

4. FIRST AID MEASURES

General advice : In general no treatment is necessary, however, obtain medical advice.

If inhaled : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

In case of eye contact : Immediately flush eyes with large amounts of water for at least 15 minutes while holding eyelids open. Transport to the nearest medical facility for additional treatment.

If swallowed : If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.

Most important symptoms and effects, both acute and delayed : If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever.

Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

Notes to physician : Potential for chemical pneumonitis.
Call a doctor or poison control center for guidance.

5. FIREFIGHTING MEASURES

Suitable extinguishing media : Alcohol-resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media : None

Specific hazards during firefighting	:	Clear fire area of all non-emergency personnel. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Carbon monoxide may be evolved if incomplete combustion occurs.
Specific extinguishing methods	:	Use water spray to cool unopened containers. Keep adjacent containers cool by spraying with water.
Special protective equipment for firefighters	:	Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Isolate hazard area and deny entry to unnecessary or unprotected personnel. Stay upwind and keep out of low areas.
	:	Observe the relevant local and international regulations. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Local authorities should be advised if significant spillages cannot be contained. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Vapour may form an explosive mixture with air.
Environmental precautions	:	Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapor or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Ventilate contaminated area thoroughly. Monitor area with combustible gas indicator.
Methods and materials for containment and cleaning up	:	For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or

safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely Remove contaminated soil and dispose of safely.

Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet.
For guidance on disposal of spilled material see Chapter 13 of this Material Safety Data Sheet.

7. HANDLING AND STORAGE

General Precautions : Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet.
For comprehensive advice on handling, product transfer, storage and tank cleaning refer to the product supplier.
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

Advice on safe handling : Avoid contact with skin, eyes and clothing.
Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.

Avoidance of contact : Strong oxidising agents.

Advice on protection against fire and explosion : Bulk storage tanks should be diked (bunded). Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment to reduce the risk. The vapours in the head space of the storage vessel may lie in the flammable/explosive range and hence may be flammable. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Do NOT use compressed air for filling, discharging, or handling operations.

Product Transfer : Refer to guidance under Handling section.

Storage

Other data : The vapour is heavier than air. Beware of accumulation in pits and confined spaces.
Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.

Packaging material : Suitable material: For containers, or container linings use mild steel, stainless steel.
Unsuitable material: Natural, butyl, neoprene or nitrile rubbers.

Container Advice : Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform

similar operations on or near containers.

Specific use(s) : Not applicable

Ensure that all local regulations regarding handling and storage facilities are followed.
See additional references that provide safe handling practices: American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practices on Static Electricity).
CENELEC CLC/TR 50404 (Electrostatics – Code of practice for the avoidance of hazards due to static electricity).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Isopropyl alcohol	67-63-0	CMP	400 ppm	AR OEL
	Further information: Irritation			
		CMP - CPT	500 ppm	AR OEL
	Further information: Irritation			

Biological occupational exposure limits

Component	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Isopropyl alcohol	67-63-0	Acetone	Urine		2 .mg/g Creatinine	AR BEI

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.
Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.
National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods http://www.cdc.gov/niosh/
Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods http://www.osha.gov/
Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances http://www.hse.gov.uk/
Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany http://www.dguv.de/inhalt/index.jsp
L'Institut National de Recherche et de Securité, (INRS), France http://www.inrs.fr/accueil

Engineering measures : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.
Eye washes and showers for emergency use.
Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.
Practice good housekeeping.
Define procedures for safe handling and maintenance of controls.
Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.
Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.
Drain down system prior to equipment break-in or maintenance.
Retain drain downs in sealed storage pending disposal or subsequent recycle.

Personal protective equipment

Protective measures

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Respiratory protection : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers.
Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
If air-filtering respirators are suitable for conditions of use:
Select a filter suitable for organic gases and vapours [boiling point >65 °C (149 °F)].

Hand protection
Remarks : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. Longer term protection: Nitrile rubber gloves. Incidental contact/Splash protection: PVC or neoprene rubber gloves For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable

gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

Eye protection	:	Wear goggles for use against liquids and gas.
Skin and body protection	:	Wear antistatic and flame retardant clothing if a local risk assessment deems it so. If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to relevant Standard, and provide employee skin care programmes.
Thermal hazards	:	Not applicable

Environmental exposure controls

General advice	:	Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour. Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation. Information on accidental release measures are to be found in section 6.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid.
Colour	:	clear
Odour	:	characteristic
Odour Threshold	:	40 ppm
pH	:	not applicable
	:	Data not available
Boiling point/boiling range	:	78 - 81 °C / 172 - 178 °F
Flash point	:	14 °C / 57 °F Method: IP 170

Evaporation rate	:	1,44
Flammability (solid, gas)	:	Not applicable
Upper explosion limit	:	not determined
Lower explosion limit	:	not determined
Vapour pressure	:	Data not available
Relative vapour density	:	2,1
Relative density	:	0,81 (15 °C / 59 °F)
Density	:	814 - 819 kg/m3 (20 °C / 68 °F) Method: ASTM D4052
Solubility(ies)		
Water solubility	:	Data not available
Partition coefficient: n-octanol/water	:	log Pow: 0,05
Auto-ignition temperature	:	399 °C / 750 °F
Thermal decomposition	:	Data not available
Viscosity		
Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	Data not available
Explosive properties	:	Classification Code: Not classified
Oxidizing properties	:	Not applicable
Surface tension	:	Data not available
Conductivity	:	Electrical conductivity: > 10 000 pS/m, A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid., This material is not expected to be a static accumulator.
Molecular weight	:	Data not available

10. STABILITY AND REACTIVITY

Reactivity	:	The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
Chemical stability	:	No hazardous reaction is expected when handled and stored according to provisions. Stable under normal conditions of use.

Possibility of hazardous reactions	:	Reacts with strong oxidising agents.
Conditions to avoid	:	Avoid heat, sparks, open flames and other ignition sources. Prevent vapour accumulation. In certain circumstances product can ignite due to static electricity.
Incompatible materials	:	Strong oxidising agents.
Hazardous decomposition products	:	Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

11. TOXICOLOGICAL INFORMATION

Basis for assessment	:	Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s). Information given is based on product testing.
Information on likely routes of exposure	:	Exposure may occur via inhalation, ingestion, skin absorption, skin or eye contact, and accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity	:	LD 50 rat: > 5.000 mg/kg Remarks: Low toxicity:
Acute inhalation toxicity	:	Remarks: Low toxicity by inhalation.
Acute dermal toxicity	:	LD 50 Rabbit: > 5.000 mg/kg Remarks: Low toxicity:

Skin corrosion/irritation

Product:

Species: Rabbit
Remarks: Not irritating to skin.

Serious eye damage/eye irritation

Product:

Remarks: Irritating to eyes. (Hydrogen Sulfide)

Respiratory or skin sensitisation

Product:

Test Method: Skin sensitisation
Remarks: Not a skin sensitiser.

Germ cell mutagenicity

Product:

Type: Reproductive and Developmental Toxicity
Remarks: Not mutagenic.

Germ cell mutagenicity- Assessment : This product does not meet the criteria for classification in categories 1A/1B.

Carcinogenicity

Product:

Remarks: Not a carcinogen.

Carcinogenicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

Material	GHS/CLP Carcinogenicity Classification
Isopropyl alcohol	No carcinogenicity classification.

Other Carcinogenicity Classification:

Reproductive toxicity

Product:

Remarks: Does not impair fertility., Not a developmental toxicant.

Reproductive toxicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

STOT - single exposure

Product:

Remarks: May cause drowsiness and dizziness.

STOT - repeated exposure

Product:

Remarks: Kidney: caused kidney effects in male rats which are not considered relevant to humans

Aspiration toxicity

Product:

Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

Further information

Product:

Remarks: Exposure may enhance the toxicity of other materials.

12. ECOLOGICAL INFORMATION

Basis for assessment	:	Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s). Information given is based on product testing.

Ecotoxicity

Product:

Toxicity to fish	:	Remarks: Practically non toxic: LL/EL/IL50 > 100 mg/l
Toxicity to crustacean	:	Remarks: Practically non toxic: LL/EL/IL50 > 100 mg/l
Toxicity to algae/aquatic plants	:	Method: estimated value(s) Remarks: Practically non toxic: LL/EL/IL50 > 100 mg/l
Toxicity to microorganisms	:	Remarks: Practically non toxic: LL/EL/IL50 > 100 mg/l

Persistence and degradability

Product:

Biodegradability	:	Remarks: Readily biodegradable., Oxidises rapidly by photo-chemical reactions in air.

Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: Not expected to bioaccumulate significantly.
Partition coefficient: n-octanol/water	:	log Pow: 0,05

Mobility in soil

Product:

Mobility : Remarks: If the product enters soil, one or more constituents will or may be mobile and may contaminate groundwater., Dissolves in water.

Other adverse effects

Product:

Results of PBT and vPvB assessment : The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Recover or recycle if possible.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
Do not dispose into the environment, in drains or in water courses
Waste product should not be allowed to contaminate soil or water.

Contaminated packaging : Drain container thoroughly.
After draining, vent in a safe place away from sparks and fire.
Residues may cause an explosion hazard.
Do not, puncture, cut, or weld uncleaned drums.
Send to drum recoverer or metal reclaimer.

Local legislation
Remarks : Local regulations may be more stringent than regional or national requirements and must be complied with.
Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Comply with any local recovery or waste disposal regulations.

14. TRANSPORT INFORMATION

International regulation

IATA-DGR

UN/ID No.	:	UN 1219
Proper shipping name	:	ISOPROPANOL
Class	:	3
Packing group	:	II
Labels	:	3

IMDG-Code

UN number	:	1219
Proper shipping name	:	ISOPROPANOL
Class	:	3
Packing group	:	II
Labels	:	3
Marine pollutant	:	no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Special precautions for user

Remarks	:	Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

15. REGULATORY INFORMATION

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

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Labelling according to EC 548/67, EC 45/1999

Symbol(s)	:	FHighly flammableXiIrritant
Risk phrase(s)	:	R11Highly flammable. R36Irritating to eyes. R67Vapours may cause drowsiness and dizziness.
Safety phrase(s)	:	S 2Keep out of the reach of children. S 7Keep container tightly closed. S16Keep away from sources of ignition - No smoking. S24/25Avoid contact with skin and eyes. S26In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Other international regulations

The components of this product are reported in the following inventories:

AICS	:	Listed
DSL	:	Listed
CH INV	:	Listed
IECSC	:	Listed
ENCS	:	Listed
KECI	:	Listed
NZIoC	:	Listed
PICCS	:	Listed
EINECS	:	Listed
TSCA	:	Listed

16. OTHER INFORMATION

Abbreviations and Acronyms	:	The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

Further information

Training advice	:	Provide adequate information, instruction and training for operators.
Other information	:	A vertical bar (|) in the left margin indicates an amendment from the previous version.
Sources of key data used to compile the Safety Data Sheet	:	The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID date base, EC 1272 regulation, etc).

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.