TECHNICAL DATA SHEET

CS60 2K High Solids Hardener

SECTION 1: IDENTIFICATION OF PRODUCT AND COMPANY

1.1 Product Identifier

Product name: CS60 2K High Solids Hardener
Product Code: FL2015

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

Intended use: For professional use ONLY

1.3 Details of supplier of the safety data sheet

Details of company: FLP Group
Unit 1 Clayfields Industrial Estate
Tickhill Road
Doncaster
DN4 8QG
+44 (0) 1302 571571
sales@flpgroup.co.uk

1.4 Emergency telephone number

Emergency Tel: +44 (0) 1302 571571

SECTION 2: HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Classification under CLP: Flam. Liq. 2: H225; Acute Tox. 4: H332; Skin Irrit. 2: H315; Eye Irrit. 2: H319; Skin Sens. 1: H317; Repr. 2: H361d; STOT SE 3: H335; STOT SE 3: H336

2.2 Label elements

Hazard statements:
H225: Highly flammable liquid and vapour.
H332 Harmful if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H361d Suspected of damaging the unborn child.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.

Signal words: Danger

Hazard pictograms:
GHS02: Flame
GHS07: Exclamation mark
GHS08: Health Hazard

Precautionary statements:
P201 Obtain special instructions before use.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe fume/gas/mist/vapours/spray.
P280 Wear protective gloves/clothing and eye/face protection.
P302+P352 IF ON SKIN: Wash with plenty of water and soap.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312 Call a POISON CENTER/ doctor if you feel unwell.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

2.3 Other hazards

Other hazards: No other know hazards.
PBT: This substance is not identified as a PBT substance.

SECTION 3: COMPOSITON/INFORMATION ON INGREDIENTS

3.1 Substances

N.A.

3.2 Mixtures

Hazardous components within the meaning of EEC directive 67/548 and CLP regulation and related classification:

≥30% - <40% hexamethylene-1,6-diisocyanate homopolymer
REACH No.: 01-2119485796-17, CAS: 28182-81-2, EC: 500-060-2
Xn,Xi; R20-37-43
3.1/4/Inhal Acute Tox. 4 H332
3.4.2/1-1A-1B Skin Sens. 1, 1A, 1B H317
3.8/3 STOT SE 3 H335

≥20% - <25% ethyl acetate
REACH No.: 01-2119475103-46, Index number: 607-022-00-5, CAS: 141-78-6, EC: 205-500-4
F,Xi; R11-36-66-67
2.6/2 Flam. Liq. 2 H225
3.3/2 Eye Irrit. 2 H319
3.8/3 STOT SE 3 H336
EUH066

≥20% - <25% n-butyl acetate
REACH No.: 01-2119485493-29, Index number: 607-025-00-1, CAS: 123-86-4, EC: 204-658-1
R10-66-67
2.6/3 Flam. Liq. 3 H226
3.8/3 STOT SE 3 H336
EUH066

≥7% - <10% toluene
REACH No.: 01-2119471310-51, Index number: 601-021-00-3, CAS: 108-88-3, EC: 203-625-9
F, Repr. Cat. 3, Xn, Xi; R11-38-48/20-63-65-67
2.6/2 Flam. Liq. 2 H225
3.7/2 Repr. 2 H361
3.10/1 Asp. Tox. 1 H304
3.9/2 STOT RE 2 H373
3.2/2 Skin Irrit. 2 H315
3.8/3 STOT SE 3 H336

≥1% - <3% Aromatic hydrocarbons, C8
REACH No.: 01-2119486136-34, CAS: 90989-38-1, EC: 292-694-9
Xn, Xi; R10-20/21-65-48/20-36/37/38
2.6/3 Flam. Liq. 3 H226
3.1/4/Dermal Acute Tox. 4 H312
3.1/4/Inhal Acute Tox. 4 H332
3.10/1 Asp. Tox. 1 H304
3.2/2 Skin Irrit. 2 H315
3.3/2 Eye Irrit. 2 H319
3.8/3 STOT SE 3 H335
3.9/2 STOT RE 2 H373
DECLJ*

≥1% - <3% Hydrocarbons, C9, aromatics

REACH No.: 01-2119455851-35, EC: 918-668-5
Xn, Xi, N; R10-37-51/53-65-66-67
2.6/3 Flam. Liq. 3 H226
3.10/1 Asp. Tox. 1 H304
3.8/3 STOT SE 3 H335
3.8/3 STOT SE 3 H336
4.1/C2 Aquatic Chronic 2 H411
EUH066
DECLP*

<0.1% hexamethylene-di-isocyanate
REACH No.: 01-2119457571-37, Index number: 615-011-00-1, CAS: 822-06-0, EC: 212-485-8
T, Xn, Xi; R23-36/37/38-42/43
3.1/4/Oral Acute Tox. 4 H302
3.3/2 Eye Irrit. 2 H319
3.8/3 STOT SE 3 H335
3.2/2 Skin Irrit. 2 H315
3.4.1/1-1A-1B Resp. Sens. 1, 1A, 1B H334
3.4.2/1-1A-1B Skin Sens. 1, 1A, 1B H317
3.1/1/Inhal Acute Tox. 1 H330

<0.1% dibutyltin dilaurate
REACH No.: 01-2119496068-27, CAS: 77-58-7, EC: 201-039-8
Muta. Cat. 3, Repr. Cat. 2, T, Xi, C, N; R43-34-48/25-50/53-60-61-68
3.2/1C Skin Corr. 1C H314
3.8/1 STOT SE 1 H370
3.4.2/1-1A-1B Skin Sens. 1,1A, 1B H317
3.9/1 STOT RE 1 H372
3.5/2 Muta. 2 H341
3.7/1B Repr. 1B H360FD
4.1/A1 Aquatic Acute 1 H400
4.1/C1 Aquatic Chronic 1 H410

*DECLJ: Substance classified accordingly to Note J of the Annex I of directive 67/548/EEC. The classification as a carcinogen need not apply if it can be shown that the substance contains less than 0.1% weight/weight of benzene

*DECLP: Substance classified accordingly to Note P of the Annex I of directive 67/548/EEC. The classification as a carcinogen need not apply if it can be shown that the substance contains less than 0.1% weight/weight of benzene

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

In case of skin contact:	Remove contaminated clothing immediately and dispose of safely. After contact with skin, wash immediately with soap and plenty of water.
In case of eyes contact:	After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately. Protect uninjured eye.
In case of Ingestion:	Do NOT induce vomiting.
In case of Inhalation:	Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration. In case of inhalation, consult a doctor immediately and show him packing or label.

4.2 Most Important symptoms and effects, both acute and delayed

None known

4.3 Indication of any immediate medical attention and special treatment needed

In case of accident or un-wellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

SECTION 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: CO2, powder extinguisher, foam, water spray.
Extinguishing media which must not be used for safety reasons: Water jet.

5.2 Special hazards arising from the substance or mixture

Burning produces heavy smoke. Burning releases carbon monoxide, carbon dioxide, oxides of nitrogen, isocyanate vapours and traces of hydrogen cyanide. In the event of fire and/or explosion do not breathe fumes.

5.3 Advice for fire-fighters

Use suitable breathing apparatus. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: ACCIDENTAL REALESE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions:	Remove all sources of ignition. Wear personal protection equipment. Wear breathing apparatus if exposed to vapours/dusts/aerosols. See protective measures under point 7 and 8.

6.2 Environmental precautions

Environmental precautions:	Retain contaminated washing water and dispose it. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

6.3 Methods and material for containment and cleaning up

Clean-up procedures:	Suitable material for collection: inert absorbent material (e.g. sand, vermiculite)

6.4 Reference to other sections

Reference to other sections:	See also section 8 and 13

SECTION 7: HANDLING & STORAGE

7.1 Precautions for safe handling

Handling requirements:	Use localized ventilation system. Don't use empty container before they have been cleaned. Before making transfer operations, assure that there aren't any incompatible material residuals in the containers. Contaminated clothing should be changed before entering eating areas. Do not eat or drink while working. See also section 8 for recommended protective equipment.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions:	Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight. Keep away from food, drink and feed. See chapter 10.5 Instructions as regards storage premises: Keep container tightly closed in a cool, well-ventilated place, away from heat.

7.3 Specific end use(s)

Specific end use(s):	See section 1.2.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 Control parameters

Ethyl acetate - CAS: 141-78-6
ACGIH, 400 ppm - Notes: URT and eye irr
WEL -- Country: UNITED KINGDOM - LTE: 730 mg/m3, 200 ppm - STE: 1460 mg/m3, 400 ppm

N-butyl acetate - CAS: 123-86-4
ACGIH, 150 ppm, 200 ppm - Notes: Eye and URT irr
WEL -- Country: UNITED KINGDOM - LTE: 724 mg/m3, 150 ppm - STE: 966 mg/m3, 200 ppm

Toluene - CAS: 108-88-3
WEL -- Country: UNITED KINGDOM - LTE: 191 mg/m3, 50 ppm - STE: 384 mg/m3, 100 ppm
EU – LTE (8h): 192 mg/m3, 50 ppm - STE: 384 mg/m3, 100 ppm - Notes: Bold-type: Indicative Occupational Exposure Limit Values [2,3] and Limit Values for Occupational Exposure [4] (for references see bibliography) ACGIH, 20 ppm - Notes: A4, BEI - Visual impair, female repro, pregnancy loss

Aromatic hydrocarbons, C8 - CAS: 90989-38-1
ACGIH - LTE: 434 mg/m3, 100 ppm - STE: 651 mg/m3, 150 ppm

Hydrocarbons, C9, aromatics
ACGIH - LTE: 100 mg/m3

Hexamethylene-di-isocyanate - CAS: 822-06-0
ACGIH, 0.005 ppm - Notes: URT irr, resp sens

Dibutyltin dilaurate - CAS: 77-58-7
ACGIH - LTE: 0.1 mg/m3 - STE: 0.2 mg/m3 (calculated as total Tin)

DNEL Exposure Limit Values

Aromatic hydrocarbons, C8 - CAS: 90989-38-1
Worker Professional: 0.077 mg/l - Consumer: 0.0148 mg/l - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
Worker Professional: 180 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects
Consumer: 1.6 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

Hydrocarbons, C9, aromatics
Worker Professional: 25 mg/l - Consumer: 11 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects
Worker Professional: 0.150 mg/l - Consumer: 0.032 mg/l - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
Consumer: 11 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects PNEC Exposure Limit Values

Aromatic hydrocarbons, C8 - CAS: 90989-38-1
Target: Marine water - Value: 0.327 mg/l
Target: Fresh Water - Value: 0.327 mg/l
Target: Marine water sediments - Value: 12.46 mg/kg
Target: Fresh Water - Value: 12.46 mg/kg
Target: Soil (agricultural) - Value: 2.31 mg/kg

8.2 Exposure controls

Eye protection:	Use close fitting safety goggles, don't use eye lens.
Skin protection:	Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.
Hands protection:	Use protective gloves that provides comprehensive protection, e.g. NBR (nitrile rubber), FKM (fluoro rubber). The selection of suitable gloves does not only depend on the material, but also on other quality characteristics and varies from manufacturer to another one, and on the manner and times of use of the mixture.
Respiratory protection:	Use adequate protective respiratory equipment.
Environmental exposure controls:	See chapter 6.2

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance and colour:	transparent liquid
Odour:	of solvent
Odour threshold:	Not available
pH:	Not applicable
Melting point / freezing point:	Not available
Initial boiling point and boiling range:	Not available
Solid/gas flammability:	Not applicable
Flammability or explosive limits	
Upper:	Not available
Lower:	Not available
Vapour density:	Not available
Flash point:	<23 °C
Evaporation rate:	Not available
Vapour pressure:	Not available
Relative density:	0.97 ± 0.01
Solubility in water:	non-soluble
Solubility in oil:	Not available
Partition coefficient:	Not available
Auto-ignition temperature:	Not applicable
Decomposition temperature:	Not available
Viscosity:	Not available
Explosive properties:	none
Oxidizing properties:	none

9.2 Other information

Miscibility:	Not available
Conductivity:	Not available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Reactivity: Stable under normal conditions

10.2 Chemical stability

Chemical stability: Stable under normal conditions.

10.3 Possibilities of hazardous reactions

Hazardous reactions: Because of heat or fire the preparation can release carbon oxides and vapours which may be harmful to health. Exothermic reaction with amines and alcohols; reacts with water forming CO2; in closed containers, risk of bursting owing to increase of pressure. Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

10.4 Conditions to avoid

Conditions to avoid: Avoid to keep near heat sources

10.5 Incompatible materials

Materials to avoid: Amines and alcohols, water Avoid contact with oxidizing materials or powerful oxidising agents. The product could catch fire.

10.6 Hazardous decomposition products

Hazardous decomposition products: No hazardous decomposition products when stored and handled correctly. See chapter 5.2

SECTION 11: TOXICAL INFORMATION

11.1 Information on toxicological effects

Possible risk of harm to the unborn child
Toxic for reproduction category 3
Toxicological information of the main substances found in the mixture:
Hexamethylene-1, 6-diisocyanate homopolymer - CAS: 28182-81-2
a) Acute toxicity:
Test: LD50 - Route: Oral - Species: Rat > 2500 mg/kg
Test: LD50 - Route: Skin - Species: Rat > 2000 mg/kg
Test: LC50 - Route: Inhalation Mist - Species: Rat 1.5 mg/l - Duration: 4h
Ethyl acetate - CAS: 141-78-6
a) Acute toxicity:
Test: LD50 - Route: Oral - Species: Rabbit 5620 mg/kg
N-butyl acetate - CAS: 123-86-4
a) Acute toxicity:
Test: LD50 - Route: Oral - Species: Rat > 10000 mg/kg
Test: LD50 - Route: Skin - Species: Rabbit > 14000 mg/kg
Test: LC50 - Route: Inhalation Vapour - Species: Rat 21.1 mg/l - Duration: 4h
Toluene - CAS: 108-88-3
a) Acute toxicity:
Test: LD50 - Route: Oral - Species: Rat 5542 mg/kg
Test: LD50 - Route: Skin - Species: Rabbit 14000 mg/kg
Aromatic hydrocarbons, C8 - CAS: 90989-38-1
a) Acute toxicity:
Test: LC50 - Route: Inhalation Vapour - Species: Rat 27124 mg/m3 - Duration: 4h
Test: LD50 - Route: Oral - Species: Rat 3223 mg/kg
Test: LD50 - Route: Skin - Species: Rabbit 12126 mg/kg
Hydrocarbons, C9, aromatics
a) Acute toxicity:
Test: LD50 - Route: Oral - Species: Rat 3592 mg/kg
Test: LD50 - Route: Skin - Species: Rabbit > 3160 mg/kg
Test: LC50 - Route: Inhalation Vapour - Species: Rat > 6193 mg/m3 - Duration: 4h
Dibutyltin dilaurate - CAS: 77-58-7
a) Acute toxicity:
Test: LD50 - Route: Oral - Species: Rat 2071 mg/kg
Test: LD50 - Route: Skin - Species: Rat > 2000 mg/kg
If not differently specified, the information required in Regulation 453/2010/EC listed below must be considered as N.A.:
a) Acute toxicity;
b) Skin corrosion/irritation;
c) Serious eye damage/irritation;
d) Respiratory or skin sensitisation;
e) Germ cell mutagenicity;
f) Carcinogenicity;
g) Reproductive toxicity;
h) STOT-single exposure;
i) STOT-repeated exposure;
j) Aspiration hazard.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Aromatic hydrocarbons, C8 - CAS: 90989-38-1
a) Aquatic acute toxicity:
Endpoint: IC50 - Species: Algae 2.2 mg/l - Duration h: 72
Endpoint: EC50 - Species: Daphnia 1.0 mg/l - Duration h: 24
Endpoint: LC50 - Species: Fish 2.6 mg/l - Duration h: 96
Hydrocarbons, C9, aromatics
a) Aquatic acute toxicity:
Endpoint: EC50 - Species: Daphnia 3.2 mg/l - Duration h: 48
Endpoint: IC50 - Species: Algae 2.9 mg/l - Duration h: 72
Endpoint: LC50 - Species: Fish 9.2 mg/l - Duration h: 96
Dibutyltin dilaurate - CAS: 77-58-7
a) Aquatic acute toxicity:
Endpoint: EC50 - Species: Daphnia 0.463 mg/l - Duration h: 48

12.2 Persistence and degradability

Persistence and degradability: Not applicable

12.3 Bio accumulative potential

Bio accumulative potential: Not applicable

12.4 Mobility in soil

Mobility: Not applicable

12.5 Results of PBT and vPvB assessment

PBT identification: This substance is not identified as a PBT substance

12.6 Other adverse effects

Other adverse effects: The product reacts with water at the interface forming CO2 and a solid insoluble product with high melting point (polyuria).

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force

SECTION 14: TRANSPORTATION INFORMATION

14.1 UN number

UN number: UN3295

14.2 UN proper shipping name

Shipping name: PAINT or PAINT RELATED MATERIAL

14.3 Transport hazard class

Transport class: 3

14.4 Packaging group

Packing group: II

14.5 Environmental hazards

Environmentally hazardous: No
Marine pollutant: No

14.6 Special precautions for user

ADR-Subsidiary risks:	-
ADR-S.P.:	163 640C 650
ADR-Tunnel Restriction Code:	(D/E)
IATA-Passenger Aircraft:	353
IATA-Subsidiary risks:	-
IATA-Cargo Aircraft:	364
IATA-S.P.:	A3 A72
IATA-ERG:	3L
IMDG-EmS:	F-E, S-E
IMDG-Subsidiary risks:	-
IMDG-Storage category:	Category B
IMDG-Storage notes:	-

SECTION 15: REGULATORY INFORMATION

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

Dir. 67/548/EEC (Classification, packaging and labelling of dangerous substances)
Dir. 1999/45/EC (Classification, packaging and labelling of dangerous preparations)
Dir. 98/24/EC (Risks related to chemical agents at work)
Dir. 2000/39/EC (Occupational exposure limit values)
Dir. 2006/8/EC
Regulation (EC) n. 1907/2006 (REACH)
Regulation (EC) n. 1272/2008 (CLP)
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
Regulation (EU) n. 453/2010 (Annex I)
Regulation (EU) n. 286/2011 (ATP 2 CLP)
Regulation (EU) n. 618/2012 (ATP 3 CLP)
Regulation (EU) n. 487/2013 (ATP 4 CLP)
Regulation (EU) n. 944/2013 (ATP 5 CLP)
Regulation (EU) n. 605/2014 (ATP 6 CLP)

Volatile Organic compounds - VOCs = 61.24 %

Volatile CMR substances = 0.00 %
Halogenated VOCs which are assigned the risk phrase R40 = 0.00 %

Where applicable, refer to the following Italian regulatory provisions:
Directive 82/501/EEC ('Activities linked to risks of serious accidents') and subsequent amendments.
1999/13/EC (VOC directive)

Provisions related to directives 82/501/EC (Seveso), 96/82/EC (Seveso II):
Products belongs to category: 5, 7b.

15.2 Chemical safety assessment

Chemical safety assessment: No.

SECTION 16: OTHER INFORMATION

Other information:	This safety data sheet is prepared in accordance with Commission Regulation (EU) No 453/2010. * indicates text in the SDS which has changed since the last revision.
Phrases used in s.2 and 3:	H332 Harmful if inhaled. H317 May cause an allergic skin reaction. H335 May cause respiratory irritation. H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H226 Flammable liquid and vapour.
H361 Suspected of damaging fertility or the unborn child.
H304 May be fatal if swallowed and enters airways.
H373 May cause damage to organs through prolonged or repeated exposure.
H315 Causes skin irritation.
H312 Harmful in contact with skin.
H411 Toxic to aquatic life with long lasting effects.
H302 Harmful if swallowed.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H330 Fatal if inhaled.
H314 Causes severe skin burns and eye damage.
H370 Causes damage to organs.
H372 Causes damage to organs through prolonged or repeated exposure.
H341 Suspected of causing genetic defects.
H360FD May damage fertility. May damage the unborn child.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
EUH066 Repeated exposure may cause skin dryness or cracking.

Legal disclaimer:

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.