

**Fisa cu date de securitate**

In conformitate cu prevederile Regulamentului (UE) nr. nr.2015/830

**BENZINA EURO 5****SECTIUNEA 1: IDENTIFICAREA SUBSTANTEI/AMESTECULUI SI A SOCIETATII/INTREPRINDERII**

## 1.1 Element de identificare a produsului

Denumirea substantei	Benzina
Nr. Inregistrare ECHA	CAS No. 86290-81-5 01-2119471335-39-0026
Denumire comerciala	BENZINA EURO PLUS, EFIX BENZINA 95, BENZINA RON 98, EFIX S BENZINA 98

## 1.2 Utilizari relevante identificate ale substantei sau amestecului si utilizari contraindicate

Utilizari identificate	Combustibil pentru motoare cu aprindere prin scanteie
Utilizari identificate conform Raport de Securitate Chimica	<b>SU 3-Uz industrial</b> 01a-Distributie 02- Amestecare si finisare 12a- Combustibil pentru uz industrial <b>SU 21- Uz Profesional</b> 12b- Combustibil pentru uz profesional <b>SU 22- Utilizare la consumator final (public larg/uz casnic)</b> 12c- Carburant
Utilizari contraindicate	Acest produs nu este recomandat a se utiliza in oricare alt scop diferit de utilizarile identificate mai sus

## 1.3 Detalii privind furnizorul fisei cu date de securitate

Producator	<b>ROMPETROL RAFINARE SA</b> (Companie a Grupului KMG INTERNATIONAL) Adresa: B-dul Navodari, Nr. 215, Pavilion Administrativ, 905700 Navodari, Jud. Constanta, Romania Telefon: + (40) 241 506 656 Fax : + (40) 241 506 933 <a href="mailto:office.rafinare@rompetrol.com">office.rafinare@rompetrol.com</a>
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## 1.4 Numar de telefon care poate fi apelat in caz de urgenta

+ (40)-241-506 158 (intre orele 08:00-16:00)  
+ (40)-241-506 040 (intre orele 16:00-08:00)

**SECTIUNEA 2: IDENTIFICAREA PERICOLELOR**

## 2.1 Clasificarea substantei sau a amestecului

Produsul este clasificat periculos in conformitate cu Directiva 67/548/EEC si Regulamentul 1272/2008.

## 2.1.1 Clasificarea substantei conform Regulamentului 1272/2008(CLP)

Lichid inflamabil de categoria 2, H225 Lichid si vapori foarte inflamabili  
Cancerigen Categoria 1B, H350- Poate provoca cancer  
Mutagen Categoria 1B, H340- Poate provoca anomalii genetice  
Repr.2, H361fd- Susceptibil de a dauna fertilitatii si fatului  
Pericol prin aspirare, categoria de pericol 1

Continut de substante  
marcatoare:

0,1-1 % benzen,  
toluen,  
n-hexan

Notele OIN P, OIN 5 and OIN 6 (CLP) se pot aplica daca:

OIN P: Clasificarile carcinogen sau mutagen nu se aplica daca se dovedeste ca produsul contine mai putin de 0.1 % w/w benzen (EINECS No 200-753-7).

OIN 5: Clasificarea CLP Toxic pentru Reproducere Categoria 2 (dezvoltare) nu se aplica daca se dovedeste ca produsul contine mai putin de 3% toluen

OIN 6: Clasificarea CLP Toxic pentru Reproducere Categoria 2 (fertilitate) nu se aplica daca se dovedeste ca produsul contine mai putin de 3% n-hexane

De asemenea Notele M2 se aplica, dupa caz

Pericole fizico-chimice

Lichid foarte inflamabil. Benzinele, produse cu punct de fierbere scazut sunt lichide cu puncte variabile de inflamabilitate. Valorile curente se situeaza pentru punctul de aprindere in intervalul <23 °C si pentru punctul initial de fierbere >35°C

Pericole pentru sanatatea  
umana

Iritant pentru piele-de la usor pana la moderat

Iritant pentru ochi- inrosire usoara si/sau inflamare

Benzina poate contine urme de benzen, un constituent clasificat cancerigen si mutagen care, la concentratii >0.1%, confera amestecului caracterul cancerigen si mutagen

Pericole pentru mediu

Studiile de toxicitate acuta cu pesti, nevertebrate si alge pe probe de benzina si nafta cu punct de fierbere scazut, indica valori privind toxicitatea pentru organisme acvatice in domeniul de concentratii 1-10 mg /l

2.2 Elemente pentru eticheta

In conformitate cu Regulamentul 1272/2008

Pictograma,  
Cuvânt de avertizare  
Cod(uri)

GHS08



Pericol

GHS07



GHS02



GHS09



Fraze de pericol (H)

H225 : Lichid si vapori foarte de inflamabili

H350 : Poate cauza cancer

H340 : Poate provoca anomalii genetice

H304 : Poate fi fatal daca este inghitit si ajunge in caile respiratorii

H315: Irritant pentru piele

H361fd: Susceptibil de a dauna fertilitatii si fatului

H411: Toxic pentru mediul acvatic cu efecte pe termen lung

Fraza de precautie (P)

P201 : Procurati instructiuni special inainte de utilizare

Prevenire

P210 : A se pastra departe de surse de caldura, scantei, flacari deschise, sau suprafete incinse – Nu se fumeaza

P233 : Pastrati recipientul inchis etans

P240 : Legatura la pamant/conexiune echipotentiala cu recipientul si echipamentul de receptie

P241 : Utilizati echipamente electrice/de ventilare/de iluminat antideflagrante

P242 : Nu utilizati unelte care produc scantei

P243 : Luati masuri de precautie impotriva descarcarilor electrostatice

P273 : Evitati eliminarea in mediu

P280 : Purtati mănuși de protecție/îmbrăcăminte de protecție/echipament de protecție a ochilor/echipament de protecție a feței.

P331: Nu se provoaca voma

Fraza de precautie (P)

P301 + P310: ÎN CAZ DE ÎNGHIȚIRE: sunati imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic.

Interventie

P303+P361+P353 : In caz de contact cu pielea (sau parul) scoateti imediat toata imbracamintea contaminata/ Clatiti pielea cu apa/faceti dus

P308+P313 : In caz de expunere, consultati imediat medicul

P370+P378 : In caz de incendiu utilizati mijloace/substante adecvate pentru stingere

	(Sectiunea 5)
Fraza de precautie (P) Depozitare	P403 + P235: A se depozita într-un spatiu bine ventilat. Păstrați recipientul închis etanș.
	P405: A se depozita sub cheie
Fraza de precautie (P) Eliminare	P501: Aruncati conținutul/recipientul în conformitate cu reglementările locale/regionale/naționale/internaționale
2.3 Alte pericole	Limitat la utilizatori profesioniști. Nu sunt cunoscute pericole suplimentare generate produs pentru oameni si mediu

### SECTIUNEA 3: COMPOZITIE/INFORMATII PRIVIND COMPONENTII

#### 3.1 Substante/Preparate

Benzina este comercializata ca un amestec (preparat) din componente benzina, compusi oxigenati (MTBE, ETBE, bioetanol) si aditivi (identitatea exacta a aditivilor este in proprietatea furnizorului) care au rolul sa imbunatateasca atat cifra octanica precum si alte proprietati cuprinse in specificatia standard (continutul de arome, benzen).

Benzina este o combinatie complexa de hidrocarburi care constau din parafine, cicloparafine, hidrocarburi aromatate (<= 35% v/v) si olefinice (<= 18% v/v) in domeniul C3-C12 si intervalul de distilare 30°C- 260°C (86°F la 500°F). Produsul are un continut de benzen sub 1% v/v.

Substanta	Ratie	EC	CAS	Clasificare conform Regulamentului 1272/2008(CLP)
Benzina	< 100 %	289-220-8	86290-81-5	Lichid Inflamabil Cat 2, H225 Carc Cat 1B, H350 Mutagen Cat.1B, H340 Repr. Cat.2, H361fd Asp Tox Cat 1.H304
MTBE	0 - 10%	216-653-1	1634-04-4	Lichid Inflamabil Cat 2,H225 Iritant pentru piele, Cat.2,H315
ETBE	0 – 15%	211-309-7	637-92-3	Lichid inflamabil Cat.2, H225
Bioetanol	0 - <= 5%	200-578-6	64-17-5	Lichid Inflamabil Cat 2,H225

MTBE – Nr. Inregistrare ECHA: 01-2119452786-27-0001

ETBE - Nr. Inregistrare ECHA: 01-2119452785-29-0001

Ethanol - Nr. Inregistrare ECHA: 01-2119457610-430026

Urmatoarele hidrocarburi (marcatori) sunt prezente:

Substanta	% (w/w)	EC	CAS	Clasificare conform Regulamentului 1272/2008(CLP)
n-hexan	< 3	203-777-6	110-54-3	Lichid Inflamabil Cat 2, Repr.2, Asp.Tox.1, STOT RE 2, Iritant piele Cat.2, STOT SE 3, Toxic pentru mediul acvatic Cat. 2
benzen	0.1 -1	200-753-7	71-43-2	Lichid Inflamabil Cat 2, Carc 1A, Muta 1B, STOT RE 1, Asp Tox 1, Iritant pentru ochi Cat.2, Periculos pentru mediu Cat 3
toluen	<3	203-625-9	108-88-3	Lichid Inflamabil Cat 2, Repr.2 ,Asp.Tox.1 , STOT RE 2 ,Iritant piele Cat.2, STOT SE 3

Sortimentele Efix si EfixS contin un pachet de aditivi multifunctionali care impiedica depunerile pe supape si injectoare, cu efecte benefice asupra consumului de carburant si a emisiilor.

### SECTIUNEA 4: MASURI DE PRIM AJUTOR

#### 4.1. Descrierea masurilor de prim ajutor

Este necesara protectia proprie a persoanelor care acorda masurile de prim ajutor

#### 4.1.1. Instructiuni de prim ajutor furnizate in functie de caile de expunere relevante

Contact cu ochii	Iritatare usoara (nespecifica). Clatiti continuu cu apa pentru cateva minute. Indepartati lentilele de contact daca este cazul. Continuati clatirea. Daca apar si persista iritati, vedere incetosata sau umflaturi contactati imediat medical specialist.
Contact cu pielea	Inrosire, iritare. Indepartati hainele si incaltarile contaminate si depozitatiile in conditii de siguranta. Spalati zona afectata cu apa si sapun. Daca apar si persista iritatii, zona inrosita sau umflaturi solicitati asistenta medicala. Daca se folosesc echipamente sub presiune pot aparea scapari de produs cu presiune. In caz de ranire cu produs sub presiune se va anunta imediat serviciul medical. Pentru arsuri minore indepartati sursa. Tineti zona afectata sub jet de apa rece timp de 5 minute sau pana durerea dispare. Evitati hipotermia.
Ingerare	Nu exista simptome specifice. Pot aparea greata si diareea. Ingerarea poate duce la pierderea starii de concentrare si pierderea cunostintei. In caz de ingerare victim se va transporta imediat la spital. Nu se va astepta sa apara anumite simptome. Nu induceti voma.
Inhalare	Nu administrati nimic pe gura persoanei aflate in incostienta. Inhalarea vaporilor poate cauza dereri de cap, greata, varsaturi sau pierderea cunostintei. Mutati victima la aer curat si asezati victima intr-o pozitie confortabile pentru respirat. Daca victima este inconstienta si: * Nu respira – contactati imediat serviciul de urgent medicala, asigurati-va ca nu sunt obstructionate caile respiratorii si incepeti metoda de respiratie artificial si masaj cardiac (CPR). * Respira – asezati victima in pozitia lateral stabile si mentineti capul la un nivel inferior fata de corp. Administrati oxygen daca este necesar. Anuntati imediat serviciul medical. Daca exista suspiciuni de inhalare H2S: * Salvatorul trebuie sa poarte aparat de protectie a respiratiei, centura de siguranta tip ham si trebuie sa respecte procedura de salvare. * Mutati victima la aer curat cat de repede posibil. * Administrati oxigen daca este posibil. * Anuntati imediat serviciul medical.

4.1.2. Sfaturi furnizate: Vedeti informatiile aplicabile inscise in fiecare sectiune.

4.2. Simptomele si efectele importante, atat acute cat si cronice

- Vedeti informatiile aplicabile inscise in fiecare sectiune

4.3. Indicatii pentru atentia medicala imediata si tratament

- Vedeti informatiile aplicabile inscise in fiecare sectiune

## SECTIUNEA 5: MASURI DE COMBATERE A INCENDIILOR

### 5.1. Mijloace de stingere a incendiilor

Mijloace de stingere corespunzatoare	Aceasta substanta poate pluti si se poate reaprinde la suprafata apei - Spuma (personal de specialitate) – focar incendiu extins - Apa pulverizata (personal de specialitate) – focar incendiu extins - Pudra chimica - Dioxid de carbon - Alt gaz inert - Nisip sau pamant
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Mijloace de stingere necorespunzatoare	A nu se folosi jet direct de apa pe flacara; poate cauza imprastierea incendiului. A nu se folosi simultan apa si spuma deoarece apa poate limita calitatile spumei.
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### 5.2. Pericole speciale cauzate de substanta sau amestecul în cauza

Produse de ardere Arderea incompleta poate genera amestecuri complexe, solide, particule lichide sau gazoase, incluzand monoxidul de carbon si compusi organici sau anorganici. Daca sunt prezenti si compusi cu sulf, produsii de combustie pot contine si hidrogen sulfurat, oxizi de sulf sau acid sulfuric.

### 5.3. Recomandari destinate pompierilor

In cazul unui incendiu mare sau in spatii inchise sau cu ventilatie precara purtati echipamentul de protectie termorezistent si aparatul izolant cu aer pentru protectia respiratiei.

## **SECTIUNEA 6: MASURI DE LUAT IN CAZ DE DISPERSIE ACCIDENTALA**

### 6.1 Precautii personale, echipament de protectie si proceduri de urgenta

6.1.1 Pentru personalul care nu este implicat in situatii de urgenta Opriti sau colectati scurgerile la sursa, in conditii de siguranta. Evitati contactul direct cu materialul scapat accidental. Nu stati in directia vantului. In cazul unor scapari mari, alertati locuitorii aflati in directia vantului. Alertati si personalul de urgenta.

Cu exceptia scaparilor accidentale in cantitati mici, trebuie realizata o evaluare a actiunilor de urmat si conducerea procedurii de urgenta de catre o persoana instruita si competenta.

Eliminati orice sursa de aprindere (electricitate, scantei, flacari). In acele cazuri in care prezenta H<sub>2</sub>S este posibila, trebuiesc asigurate masuri special si suplimentare, incluzand restrictionarea accesului

6.1.2 Pentru personalul care intervine în situatii de urgenta

Deversari de mica amploare: hainele de lucru antistatice normale sunt, de obicei, suficiente.

Deversari de amploare: trebuie sa se utilizeze un costum pentru întregul corp din material termorezistent si rezistent la substante chimice.

Manusi de lucru care asigura rezistenta adecvata la substante chimice, în special la hidrocarburi aromatice.

Casca de lucru. Pantofi sau cizme de siguranta antistatice nederapante

Ochelari de protectie si/sau masca de protectie a fetei, daca este posibil sau se anticipeaza stropirea sau contactul cu ochii.

Protectie respiratorie: se poate utiliza o mască de protecție obișnuită sau pentru întreaga față cu filtru de compuși organici / H<sub>2</sub>S sau un aparat de respirat autonom (SCBA) în funcție de extinderea deversării și de gradul prognozat de expunere. Dacă situația nu poate fi evaluată complet sau dacă este posibilă lipsa oxigenului, trebuiesc utilizate doar aparate SCBA.

### 6.2 Precautii pentru mediul inconjurator

Deversari pe sol

Evitati ca produsul sa ajunga la canalizare, rauri sau alte corpuri de apa

Daca este necesar indiguiti produsul cu nisip, pamant sau alt material inert similar

Deversarile mari se acopera in mod precaut cu spuma pentru a se limita formarea norilor de vapori. Nu folositi jetul direct

Pentru spatii inchise si/sau cladiri asigurati ventilatie adecvata

Absorbti produsul deversat cu material adecvate non-combustibile

Colectati produsul deversat cu mijloace adecvate. Transferati produsul si alte material contaminate in containere adecvate in scopul valorificarii sau eliminarii in conditii de siguranta.

In caz de contaminare a solului decopertati solul contaminat pentru o tratare conform reglementarilor specific in vigoare

Deversari pe apa sau in mare

In cazul deversarilor mici in ape inchise (porturi) adunati produsul cu baraje plutitoare sau cu alte echipamente potrivite. Colectati produsul prin absorbtie cu absorbanti specifici sau recuperati produsul cu mijloace mecanice adecvate pentru a se preveni riscurile de incendiu sau explozie. Altfel, controlati imprastierea si lasati produsul sa se evapore in mod natural.

Utilizarea dispersantilor poate fi recomandata de experti si, daca este necesar, aprobata de autoritati competente

Colectati tot reziduul in containere pentru recuperare sau eliminare in conditii de

siguranta.

### 6.3. Metode si materiale pentru izolare si curatenie

#### 6.3.1 Recomandari privind izolarea unei deversari - Vezi sectiunea 6.2

#### 6.3.2 Recomandari privind curatarea unei deversari - Vezi sectiunea 6.2

6.3.3 Alte informatii referitoare la scurgeri accidentale si deversari Masurile recomandate au la baza scenariu ale situatiilor cele mai probabile; totusi conditiile locale (vant, temperatura aerului, valuri, directia si viteza curentilor) pot influenta semnificativ alegerea actiunilor cele mai potrivite. In acest scop, atunci cand este necesar, trebuiesc consultati expertii locali, Reglementari locale pot fi stabilite in acest sens.

### 6.4 Trimiteri catre alte sectiuni- 2, 5, 6, 7, 10

## SECTIUNEA 7: MANIPULAREA SI DEPOZITAREA

Asigurați-vă că toate reglementările relevante cu privire la facilitățile de manipulare și depozitare a produselor inflamabile sunt urmate

### 7.1. Precautii pentru manipulare in conditii de Securitate

Informatii generale:

Risc de amestecuri explozive de vapori și aer. Asigurați-vă că toate reglementările relevante privind atmosfere explozive, și instalații de manipulare și depozitare a produselor inflamabile, sunt urmate.

(În funcție de aplicabilitate) O evaluare specifică a riscurilor de inhalare de prezența H<sub>2</sub>S în headspaces cisternă, spații închise, reziduuri de produs, deșeuri de rezervor și a apelor reziduale, și eliberează neintenționate trebuie făcute pentru a ajuta la stabilirea controalelor adecvate condițiilor locale

A se păstra departe de surse de căldură / scânteii / flăcări deschise / suprafețe încinse. - Fumatul interzis

Utilizați și nu depozitați numai în aer liber sau într-o zonă bine ventilat

A se evita contactul cu produsul.

A se evita dispersarea în mediu.

#### 7.1.1. Recomandari pentru manipulare in conditii de Securitate

Luati masuri de precautie impotriva electricitatii statice, Impamantarile containerelor, a rezervoarelor si transferul/ receptia echipamentului. Utilizati numai echipamente electrice/ de ventilatie/ de iluminare anti-ex. Utilizati de asemenea scule anti-ex.

Vaporii sunt mai usori decat aerul. Atentie la acumularea de vapori in spatii inchise. Incarcarile in cisterne se vor efectua numai pe jos, astfel incat sa se respecte Legislatia Europeana. A nu se utiliza aer comprimat pentru incarcare, descarcare sau operatiuni de manipulare. Evitati contactul cu pielea si cu ochii. A nu se ingera. Nu inspirati vapori. Folositi echipament de protectie adecvat.

Pentru mai multe informatii cu privire la echipamentul de protectie si conditii de operare, studiatii Scenarii de Expunere.

#### 7.1.2. Recomandari privind igiena generala la locul de munca

Asigurati-va ca au fost respectate toate masurile de precautie in vederea depozitarii produsului.

Materialele contaminate nu trebuie lasate sa se acumuleze în spatiile de lucru si nu trebuie tinute niciodata în buzunare.

Tineti la distanta de alimente si bauturi.

A nu se manca, bea sau fuma cand se utilizeaza acest produs.

Spalati mainile foarte bine dupa utilizare.

Schimbati-va de hainele contaminate la sfarsitul programului

### 7.2. Conditii de depozitare în conditii de securitate, inclusiv eventuale incompatibilitati

#### Depozitare

Zona de depozitare, proiectarea rezervoarelor, a echipamentelor precum si a procedurilor de operare trebuie sa corespunda legislatiei Europene sau nationale.

Instalatiile de depozitare trebuie proiectate cu înprejmuiri adecvate în caz de scurgeri sau deversari.

Curatenia, inspectia si mentenanta structurii interioare a rezervoarelor trebuie realizata intr-un mod adecvat de catre personal calificat astfel definit de catre regulamentele nationale, locale sau ale companiei.

Inainte de intrarea intr-un rezervor de depozitare si demararea oricaror operatiuni in

spatiu inchis, se va verifica continutul de oxigen si inflamarea. Daca exista posibilitatea existentei de compusi cu sulf, trebuie verificata prezenta hidrogenului sulfurat.

Substante incompatibile si conditii de evitat la depozitare

Evitarea efectului termic. A se feri de sursele de aprindere si agentii de oxidare. A nu se depozita la un loc cu urmatoarele substante :

- Substante periculoase explozive.
- Gaze.
- Substante solide periculoase inflamabile.
- Substante periculoase piroforice sau care se autoincalzesc.
- Substante periculoase care in contact cu apa degaja gaze inflamabile,
- Substante periculoase puternic oxidante,
- Azotat de amoniu si produse care contin azotat de amoniu,
- Peroxizi organici si substante periculoase auto-reactive,
- Substante periculoase necombustibile clasificate toxice categ 1 si 2,
- Substante infectioase

Recomandari depozitare containere

Daca produsul este aprovizionat in containere:

- A se pastra in containerul original sau intr-un container adecvat depozitarii acestui produs;
- Containerele se vor pastra inchise si vor fi etichetate. Se va evita expunerea la soare.
- Vaporii de hidrocarburi pot favoriza crestrea presiunii in partea superioara a containerului. Acest factor poate cauza pericole de inflamare si explozie. A se deschide incet pentru a putea controla posibila eliberare de presiune din container.
- Containerele golite pot contine reziduu ce contin produse inflamabili. A nu se suda, perfora, taia sau incinera containerele goale, decat in cazul in care acestea au fost curatate anterior.

Materiale recomandate pentru depozitare in containere

Materialele recomandate pentru containere sau captuselile containerelor includ otel moale, otel inoxidabil.

Materiale nerecomandate pentru depozitare in containere

Unele materiale sintetice pot fi inadecvate pentru containere sau captuselile containerelor în functie de specificatia si destinatia de utilizare a materialului.

Este recomandat a se verifica cu producatorul compatibilitatea.

7.3 Utilizare finala specifica - Combustibil pentru motoare cu aprindere prin scanteie

## SECTIUNEA 8: CONTROALE ALE EXPUNERII/PROTECTIA PERSONALA

### 8.1. Parametri de control

#### **Benzina**

Romania: 300 mg/ m<sup>3</sup> la 8 ore; 500 mg/m<sup>3</sup> la 15 min

SUA: 890 mg/ m<sup>3</sup> (300 ppm) la 8 ore, 1480 mg/m<sup>3</sup> (500 ppm) in 15 min

Suedia: 220 mg/m<sup>3</sup> (70 ppm) la 8 ore; 300 mg/m<sup>3</sup> (100 ppm) 15 min

#### **Benzen**

3,25 mg/m<sup>3</sup> (1 ppm) in 8 ore

#### **Hexane**

72 mg/m<sup>3</sup> (20 ppm) la 8 ore (R2 Directiva 2006/15)

#### **MTBE**

Romania 183.5 mg/m<sup>3</sup> (50 ppm) la 8 ore; 367 mg/m<sup>3</sup> (100 ppm) la 15 min (Directiva 2009/161)

SUA: 183.5 mg/m<sup>3</sup> (50 ppm) la 8 ore

#### **ETBE**

US(ACGIH) TWA: 5 ppm

OEL(ES) VLA –ED: 5 ppm

OEL(PT) TWA: 5 ppm

#### **Etanol**

1900 mg/m<sup>3</sup> in 8 ore, 9500 mg/m<sup>3</sup> in 15 min

### 8.2. Controale ale expunerii

Manipulati substanta in sisteme inchise.

Luati probe printr-un sistem inchis pentru a evita expunerea.

A se evita contactul direct cu ochii, pielea si cu imbracamintea. Hainele contaminate cu produs se vor schimba imediat si vor fi curatate inainte de reutilizare.

Purtati manusi de protectie in conformitate cu EN 374.

#### 8.2.1 Controale tehnice corespunzatoare

Sistemele de ventilatie a camerelor si sistemul de evacuare sunt necesare pentru a controla expunerile si pentru a preveni formarea de atmosfere explozive.

#### 8.2.2. Masuri de protectie individuala, precum echipamentul de protectie personala

##### 8.2.2.1. Utilizarea echipamentului de protectie personala

Totdeauna trebuie sa se utilizeze echipament individual de protectie specific.

Selectia echipamentului individual de protectie trebuie sa se bazeze pe o evaluare a caracteristicilor echipamentului, conditiile prezente, durabilitatea in purtare si riscurile/potentialele riscuri care pot aparea pe perioada purtarii. In vecinatatea zonei cu potential de expunere trebuie sa existe dus de salvare.

Respectati normele de igiena.

##### 8.2.2.2. Specificatii detaliate privind tipul de echipament care va asigura protectia

(a) Protectia ochilor/fetei Trebuie utilizate viziere de protectie (avand in vedere scenariile de expunere 9.1.1.b si 9.1.1.c)

(b) Protectia pielii Purtati manusi de protectie conform standard EN374

(i) Protectia mainilor Purtati manusi de protectie conform standard EN374

(ii) Altele NA

(c) Protectia respiratiei Aparat de protectie a respiratiei

(d) Pericole termice NA

8.2.3. Controlul expunerii mediului A se asigura o buna ventilatie, a nu se intra in contact cu vaporii, monitorizarea mediului de munca si prevenirea scaparilor accidentale.

## SECTIUNEA 9: PROPRIETATILE FIZICE SI CHIMICE

### 9.1. Informatii privind proprietatile fizice si chimice de baza

(a) Aspect	Lichid limpede, incolor pana la galbui		
(b) Miros	Specific de produs petrolier		
(c) Pragul de acceptare a mirosului	Miros perceptibil		
(d) pH	NA		
(e) Punctul de topire/punctul de înghetare	NA (nu este relevant pentru aceasta categorie de produse)		
(f) Punctul initial de fierbere si intervalul de fierbere	35 ÷ 210 °C	EN ISO 3405	
(g) Punctul de aprindere	<23 °C	EN ISO 2719	
(h) Viteza de evaporare	Nu sunt date		
(i) Inflamabilitatea (solid, gaz)	Produsul este lichid si vaporii foarte inflamabili		
(j) Limita superioară / inferioară de inflamabilitate	7,6 % / 1,4 %		
(k) Presiunea de vapori	Vara 45,0 ÷ 60,0 kPa Iarna 60,0 ÷ 90,0 kPa Tranzitie 45,0 ÷ 90,0 kPa	EN 13016-1	Specificatie tehnica
(l) Densitatea vaporilor	Nu sunt date		
(m) Densitatea la 15 °C	720 – 775 kg/m3	EN ISO 3675 / EN ISO 12185	
(n) Solubilitatea in apa	mica – mai putin de 1mg/l	Documentatie CONCAWE	
(o) Coeficientul de partiție: n-octanol/apa	>3 (testul nu se aplica substantelor petroliere dar constituentii individuali au valori cuprinse intre 3 si 6)		
(p) Temperatura de autoaprindere	>200 grd C	Documentatie CONCAWE	
(q) Temperatura de descompunere	Nu sunt date		
(r) Vascozitatea la 40°C	< 7mm2/s	CONCAWE Documents	





- (c) lezarea grava/iritarea ochilor Efectele asupra ochilor ale benzinei si ale altor nafta cu punct de fierbere scazut au fost investigate pentru iepuri folosind mai multe probe. Nici-unul din teste nu a relevat alte efecte decat inrosirea si inflamarea ochilor, care au fost rezolvate repede (UBTL Inc., 1985a).
- (d) sensibilizarea cailor respiratorii sau a pielii Testele efectuate pe porcul de guinea cu benzina si nafta cu punct de fierbere scazut au aratat ca nu exista evidente de sensibilizare a pielii. De asemenea nu sunt rapoarte care sa indice potentialul acestei categorii de substante privind sensibilizarea cailor respiratorii.
- (e) mutagenitatea celulelor germinative Potentialul mutagen al benzinei si al al naftai cu punct de fierbere scazut a fost considerabil testat in incercari in vivi si in vitro. Majoritatea studiilor au aratat ca nu exista evidente privind activitatea mutagena. Insa, Benzina si produsele nafta pot contine benzen, un constituent care este clasificat cancerigen si mutagen. La un continut de benzen mai mare de 0,1% produsul este potential mutagen.
- (f) cancerogenitatea Potentialul cancerigen al benzinei a fost investigat pe sobolani si soareci in studii de expunere prin inhalare, pe parcursul a 2 ani. La sobolani a existat o incidenta crescanda de cancer la rinichi la masculi; la soareci s-a dovedit o incidenta crescanda a tumorilor la ficat, la femele. Studii suplimentare au relevat ca tumorile sunt specifice pe categorii de sex si de specii si nu sunt considerate relevante pentru om. Rezultatele testelor pe piele, efectuate pe parcursul a 2 ani, cu benzine si nafta cu punct de fierbere scazut au evidentiat un potential scazut privind dezvoltarea tumorilor pielii. Studii suplimentare au evidentiat ca atunci cand apar tumori, acestea sunt rezultatul unui raspuns genotoxic datorat iritarii pielii. Prezenta in benzina si/sau nafta pot contine benzen, un constituent clasificat cancerigen pentru om.
- (g) toxicitatea pentru reproducere Studiile efectuate cu benzina si fluxuri de nafta cu punct de fierbere scazut pe sobolani au aratat nu exista efecte privind performanta de reproducere si nici dezvoltari ale toxicitatii. Benzina si nafta cu punct de fierbere scazut pot contine toluen si sau n-hexan, constitienti clasificati ca toxici pentru reproducere la concentratii mai mari de 3%.
- (h) STOT (toxicitate asupra organelor tinta specifice) – expunere unica Studiile de toxicitate asupra organelor tinta au aratat ca nu exista alte evidente privind STOT, la expunere unica, decat narcoze si/sau depresii, in caz de concentratii mari.
- (i) STOT (toxicitate asupra organelor tinta specifice) – expunere repetata Expunerea prin doze repetate cu benzina si fluxuri de nafta cu punct de fierbere scazut, pe sobolani, prin inhalare sau expunerea pielii a fost studiata pe perioade de 10 zile pana la 2 ani. Studiile de expunere a pielii au dovedit ca nu exista evidente de toxicitate prin expunere repetata- singurele dovezi au fost iritarea pielii moderata si/sau severa. Expunerea repetata prin inhalare a condus la aparitia “nevropatiei la hidrocarburi usoare”, efect considerat nespecific pentru categorii de sex sau specii.
- (j) pericol prin aspirare Substante de tip benzina si nafta cu punct de fierbere scazut sunt lichide cu o vascozitate mica (la 40°C of < 7 mm2/s); exista pericol de inhalare a vaporilor

11.1.2. Informatii privind caile probabile de expunere – Pericol de aspiratie

11.1.3. Simptomele legate de caracteristicile fizico-chimice si toxicologice

- Vezi capitolele 2 si 11.1

11.1.4. Efectele intarziate si cele imediate cunoscute, precum si efectele cronice induse de o expunere pe termen lung si de o expunere pe termen scurt

- Vezi capitolele 2 si 11.1

11.1.5. Alte informatii NA

## SECTIUNEA 12: INFORMATII ECOLOGICE

12.1. Toxicitate

- toxicitate acuta

Studii de toxicitate acuta pentru mediul acvatic, efectuate pe pesti, nevertebrate si alge au relevat valorile de concentratii pentru care se manifesta toxicitate acuta: 1-10 mg/l. Testele au fost efectuate pe probe de apa continand fractii de benzine si in sistem inchis pentru a se preveni pierderile prin evaporare. (Concawe 1995a, 1995h, 1995o, 1996a, PPSC 1995a)

- toxicitate cronica	Un studiu de toxicitate acvatica cronica efectuat pe daphnia cu o proba de nafta alchilata a dovedit o concentratie NOELER=2.6 mg/l Springborn Laboratories 1999d).
12.2. Persistenta si degradabilitate	Substanta este UVCB (substante cu o compozitie necunoscuta si variabila, produse de reactie si substante biologice). Teste standard pentru biodegradare / bioacumularea sunt destinate pentru substante individuale si nu sunt potrivite pentru substantele complexe de tip UVCB. Pe baza informatiilor disponibile, masurate sau prognozate privind compozitia, benzina si alte substante din categoria nafta in mod inerent biodegradabile.
12.3 Potential de bioacumulare	Constituentii de substante nafta/benzine arata valorile masurate sau estimate pentru log Kow mai mic de 4 si nu au potential bio-acumulativ.
12.4 Mobilitate in sol	Neaplicabil
12.5. Rezultatele evaluarii PBT si vPvB	Nu este substanta PBT si vPvBvT
12.6 Alte efecte adverse	Nu este cazul

### SECTIUNEA 13: CONSIDERATII PRIVIND ELIMINAREA

13.1 Metode de tratare a deseurilor	
Instructiuni privind eliminarea deseului de produs	Benzina este utilizata in primul rand ca si combustibil si foarte rar poate apare necesitatea eliminarii unor cantitati mari. Cand eliminarea reprezinta o necesitate, de exemplu in cazul unei deversari sau in cazul curatirii unui rezervor, aceasta poate fi tratata prin ardere (co-incinerare). Solul contaminat poate fi tratat prin lucrari agricole (afanare, aerare, etc). Reziduurile de produs vor fi eliminate conform prevederilor legale privind deseurile periculoase. (Cod 13 07 02*).
Ambalaj contaminat	Cantitatile mari de materiale contaminate pot fi incinerate; materialele contaminate usor pot fi acceptate ca deseuri in depozite special amenajate in puncte de valorificare / eliminare finala a deseurilor periculoase (Cod: 15 01 10*)

### SECTIUNEA 14: INFORMATII REFERITOARE LA TRANSPORT

14.1. Numarul ONU	UN 1203
14.2. Denumirea corecta ONU pentru transport	BENZINA
14.3. Clasa (clasele) de pericol pentru transport	3
14.4. Grupul de ambalare	II
14.5. Pericole pentru mediul inconjurator	Da
14.6. Precautii speciale pentru utilizatori	
Numar de identificare pericol	33
Etichete ADR/RID	3
Cod restrictie tunel	D/E- Nota: cerinta numai ADR

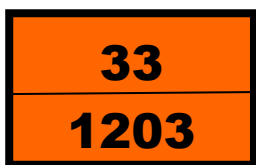


Fig.1



Fig.2



Fig.3

14.7. Transport in vrac, in conformitate cu anexa I la MARPOL 73/78 si Codul IBC - este neaplicabil

**SECTIUNEA 15: INFORMATII DE REGLEMENTARE**

15.1. Regulamente/legislatie in domeniul securitatii, sanatatii si al mediului specifice (specifica) pentru substanta sau amestecul în cauza

<b>Legea 59/11 aprilie 2015</b> privind controlul asupra pericolelor de accident major in care sunt implicate substante periculoase (abroga HG 804/2007) si care implementeaza <b>Directiva 2012/18/UE</b> a Parlamentului European si a Consiliului din 4 Iulie 2012(SEVESO III)	<b>Categoriile de pericol</b>	Cantitățile relevante (tone) de substanțe periculoase astfel cum sunt menționate la art. 3 pct. 21 pentru încadrarea amplasamentelor de nivel inferior/nivel superior
	34. Anexa 1 Partea 2 Produse petroliere si combustibili alternativi: a) benzine si nafta	2500 / 25000
	P5b Anexa 1 Partea 1 Lichide inflamabile, Categoria 2 sau 3	50 / 200
	E2 Periculoase pentru mediul acvatic în categoria cronic 2	200 / 500
<i>Directiva Consiliului 1999/13/EC</i> privind reducerea emisiilor de compusi organici volatili datorate utilizarii solventilor datorate utilizarii solventilor organici in anumite activitati si instalatii	Produsul nu face obiectul Directivei 1999/13/CE, cu conditia de a nu avea alte utilizari decat cele mentionate in sectiunea 1.2 din FDS	
<b>REGULAMENT(CE) Nr 1907/2006</b> a Parlamentului European si Consiliului Referitor la Inregistrarea, Evaluarea, Autorizarea si Restrictionarea Substantelor Chimice (REACH)	Substanta este inregistrata in conformitate cu Regulamentul REACH In Anexa XVII, substanta este mentionata la poz. 28 si 29 : Nr.28-Substante care figureaza in partea 3 din Anexa VI la Regulamentul 1272/2008 clasificate drept cancerigene categoria 1A sau 1B(Tab.3.1) Nr.29- Substante care figureaza in partea 3 din Anexa VI la Regulamentul 1272/2008 clasificate drept mutagene asupra celulelor germinative categoria 1A sau 1B(Tab.3.1)	
<i>Directive 94/63/CE a Parlamentului European si a Consiliului privind controlul emisiilor de compusi oraganici volatili(COV)rezultati din depozitarea carburantilor si distributia acestora de la terminale la statii de distributie a carburantilor</i>	Produsul are o presiune de vapori Reid mai mare de 27,6 kilopascals este destinat uzului de carburant pentru vehicule si I se aplica legislatia privind limitarea emisiilor de compusi organici volatili rezultati din depozitarea carburantilor si distributia acestora de la terminale la Statii de distributie a carburantilor	
<i>Directiva no.2009/126/CE a Parlamentului European si a Consiliului</i> privind etapa II de recuperare a vaporilor de benzina in timpul alimentarii autovehiculelor de la statiile de benzina	Produsului I se aplica cerintele legislatiei privind limitarea emisiilor de compusi organici volatili rezultati din depozitarea carburantilor si distributia acestora de la terminale la Statii de distributie a carburantilor	
<b>Directiva 92/85/EEC</b> din 19 Octombrie 1992 privind introducerea de masuri de imbunatatire a sanatatii si securitatii la locul de munca pentru lucratoarele gravide, care au nascut de curand sau care alapteaza (a 10-a Directiva speciala conform art.16(1) din Directiva 89/391/EEC)	Produsul face obiectul restrictiilor prevazute in legislatia nationala de transpunere a Directivei	
<b>Directiva 94/33/EC</b> privind protectia tinerilor la locul de munca	Produsul face obiectul restrictiilor prevazute in legislatia nationala de transpunere a Directivei	

- Regulamentul nr. 453/2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)
- Regulament REACH, 1907/2006 privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice
- Regulament (EC) 1272/2008 privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum și de modificare a Regulamentului (CE) nr. 1907/2006
- Regulamentul (UE) 2015/830 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)
- Legea 59/11 aprilie 2016 privind controlul asupra pericolelor de accident major în care sunt implicate substanțe periculoase (Directiva 2012/18/UE /SEVESO III)
- Legea 319/2006, Legea securității și sănătății în muncă
- HG no. 1048/2006 privind cerințele minime de securitate și sănătate pentru utilizarea de către lucrători a echipamentelor individuale de protecție la locul de muncă
- H.G. no.1218/2006 privind stabilirea cerințelor minime de securitate și sănătate în munca pentru asigurarea protecției lucrătorilor împotriva riscurilor legate de prezența agenților chimici completată de HG nr.1/2012
- HG nr. 355/2007 privind supravegherea sănătății lucrătorilor
- HG 856/2002 privind evidența deșeurilor și Legea 211/2011 privind regimul deșeurilor
- Directiva 89/656/CEE privind stabilirea regulilor minime de sănătate și securitate în muncă, la utilizarea echipamentului individual de protecție la locul de muncă
- Directiva 89/391/CEE privind stabilirea măsurilor de promovare a îmbunătățirii sănătății și securității lucrătorilor
- Directiva 2004/37/EC privind Protecția lucrătorilor la locul de muncă de riscurile legate de expunerea la substanțe cancerigene și mutagene
- Directivele 2006/12/EC și 2008/98/EC privind deșeurile
- Reguli pentru transportul CF internațional al marfurilor periculoase (RID)
- Tratat European pentru transportul auto internațional al marfurilor periculoase (ADR)
- Cod Maritim internațional pentru transportul marfurilor periculoase (IMDG)
- Tratat European pentru transportul internațional al marfurilor periculoase pe cai maritime, fluvii, râuri (ADN)

## 15.2. Evaluarea securității chimice Scenarii expunere – Anexa

### SECȚIUNEA 16: ALTE INFORMAȚII

16.1. Evidențierea informațiilor care au fost adăugate, șterse sau modificate

Actualizat header document, completări capitolele 1, 2, 9, 11, 12, 15 și 16.

16.2. Legenda abrevierilor sau acronimelor care ar putea fi utilizate (dar nu obligatoriu) în această fișă

ECHA	The European Chemicals Agency - Agenția Europeană pentru substanțe chimice
GHS	Globally Harmonised System – Sistemul armonizat de clasificare
CLP	Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging - Regulament (EC) Nr 1272/2008 privind clasificarea, etichetare și ambalarea substanțelor și amestecurilor
DSD	Dangerous Substances Directive – Directiva substanțelor periculoase
TLV-TWA	Threshold Limit value – Valoare limită de prag de expunere ocupațională (Norma germană)
ACGIH	American Conference of Governmental Industrial Hygienists – Conferința Americană a Igieniștilor din Industrie
BCF	Bio Concentration Factor – Factor de bioconcentrare
NOEC	No-observed effect concentration – Concentrația la care nu există efecte observabile
NOAEC	No observed adverse effect concentration- Concentrația la care nu există efecte adverse observabile
PBT	Persistent, Bioacumulare, Toxicitate
vPvBvT	Foarte Persistent, Foarte Bioacumulabil, Foarte Toxic
NA	Neaplicabil

### 16.3. Lista frazelor de pericol (H)si de precautie (P) relevante conform cu Regulamentul 1272/2008 (CLP)

#### Fraze de pericol:

- H225: Lichid si vapori foarte inflamabili
- H350: Poate cauza cancer
- H304: Poate fi mortal in caz de inghitire si de patrundere in caile respiratorii
- H315: Iritant pentru piele
- H361fd: Susceptibil de a dauna fertilitatii si fatului
- H411: Toxic pentru mediul acvatic cu efecte pe termen lung

#### Fraze de precautie:

- P201: Procurati instructiuni speciale inainte de folosinta
- P210: A se pastra departe de surse de caldura, scantei, flacari deschise, sau suprafete incinse
- P233: Pastrati recipientul inchis etans
- P240: Legatura la pamant/conexiune echipotentiala cu recipientul si echipamentul de receptie
- P241: Utilizati echipamente electrice/de ventilare/de iluminat antideflagrante
- P242: Nu utilizati unelte care produc scantei
- P243: Luati masuri de precautie impotriva descincarilor electrostatice
- P280: Purtati mănuși de protecție/îmbrăcăminte de protecție/echipament de protecție a ochilor/echipament de protecție a feței.
- P301 + P310: ÎN CAZ DE ÎNGHIȚIRE: sunati imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic.
- P303+P361+P353: In caz de contact cu pielea(sau parul) scoateti imediat toata imbracamintea contaminata/ Clatiti pielea cu apa/faceti dus
- P308+P313: In caz de expunere, consultati imediat medicul
- P370+P378: In caz de incendiu utilizati mijloace/substante adecvate pentru stingere (Sectiunea 5)
- P403 + P235: A se depozita într-un spatiu bine ventilat. Păstrați recipientul închis etanș
- P405:A se depozita sub cheie
- P501: Aruncati conținutul/ recipientul în conformitate cu reglementările locale/ regionale/ naționale /internaționale

### 16.4. Literatura de specialitate si sursele de date

- Fise cu date de securitate chimica internationale
- ESIS (European Chemical Substances Information System - Sistem informatizat european al substantelor chimice) - <http://ecb.jrc.ec.europa.eu/esis/> - baza date IUCLID
- Dosar de inregistrare REACH -Benzina <http://www.echa.europa.eu/ro>
- CONCAWE- Clasificarea si etichetarea substantelor petroliere in spatiul UE-2015
- Specificatie standard

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Informatiile continute in acest material au fost preluate din surse pe care Rompetrol Rafinare le considera a fi de incredere. Informatiile se aplica numai produsului descris mai sus, fiind furnizate de buna credinta dar fara nici o garantie, expresa sau implicita ca sunt complete.

Clientul isi va asuma raspunderea de a hotari daca produsul si informatiile continute in acest document sunt corespunzatoare pentru utilizarea pe care o va da produsului cumparat. Conditiiile sau metodele de manipulare, depozitare, utilizare sau eliminare a produsului de catre client sunt in afara controlului nostru si pot fi in afara cunostintelor de care dispunem. Din acest motiv, Rompetrol Rafinare nu-si asuma responsabilitatea pentru pierderi, degradari sau cheltuieli rezultand din/in legatura cu manipulare, depozitare, utilizare sau eliminare a produsului de catre client.

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**Sistemul integrat de management calitate-mediu-sanatate si securitate in munca** este in conformitate cu standardele:

- ISO 9001:2008
- ISO 14001:2004
- OHSAS 18001:2007

Laboratorul de incercari este acreditat de RENAR in conformitate cu SR EN ISO/CEI 17025: 2005.

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**ANEXA-Scenarii de expunere**

Section 1	Exposure Scenario Title
<b>Title</b>	<b>Manufacture of Substance</b>
<b>Use Descriptor</b>	Sector(s) of Use: Industrial: SU3, SU8, SU9 Process Categories: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC15 Environmental Release Categories: 1 Specific Environmental Release Category : ESVOC SpERC 1.1.v1
<b>Processes, tasks, activities covered</b>	Manufacture of the substance or use as a process chemical or extraction agent within closed or contained systems. Includes incidental exposures during recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).
Section 2	Operational conditions and risk management measures
Section 2.1	Control of worker exposure
Product characteristics	
Physical form of product	<i>Liquid, vapour pressure &gt; 10 kPa at STP</i> <b>OC5</b>
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) <b>G13</b>
Amounts used	<i>Not applicable</i>
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) <b>G2</b>
Human factors not influenced by risk management	<i>Not applicable</i>
Other Operational Conditions affecting exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently. <b>G15.;</b> Assumes a good basic standard of occupational hygiene is implemented <b>G1</b>
Contributing Scenarios	Risk Management Measures
General Measures (skin irritants). <b>G19.</b>	Avoid all skin contact with product. Clean up contamination / spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. <b>E3.</b>
General Measures (carcinogens). <b>G18.</b>	Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general / local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean / flush equipment, where possible, prior to maintenance.  Where there is potential for exposure: Restrict access to authorised staff; provide specific activity training to operators to minimise exposures; wear suitable gloves (tested to EN374) and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely.  Regularly inspect, test and maintain all control measures.  Consider the need for risk based health surveillance. <b>G20.</b>
CS15 General exposures (closed systems). + CS56 With sample collection.	Handle substance within closed systems. <b>E47.</b> Sample via a closed loop or other system intended to avoid exposure. <b>E8.</b> Wear suitable gloves tested to EN374. <b>PPE15.</b>
CS15 General exposures (closed systems) + CS54 Continuous process.	Handle substance within a closed system. <b>E47.</b> <b>Wear suitable gloves tested to EN374. PPE15.</b>
CS15 General exposures (closed systems) + CS55 Batch process.	Handle substance within a closed system. <b>E47.</b> <b>Wear suitable gloves tested to EN374. PPE15.</b>
CS36 Laboratory activities	Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure. <b>E12.</b> <b>Wear suitable gloves tested to EN374. PPE15.</b> <b>Wear suitable coveralls to prevent exposure to the skin. PPE27.</b>

CS14 Bulk transfers	Ensure material transfers are under containment or extract ventilation. <b>E66</b> . Wear suitable gloves tested to EN374. <b>PPE15</b> . Avoid splashing. <b>C&amp;H15</b> . Clear transfer lines prior to de-coupling. <b>E39</b> .
CS39 Equipment cleaning and maintenance	Drain down and flush system prior to equipment break-in or maintenance. <b>E55</b> . Retain drain downs in sealed storage pending disposal or for subsequent recycle. <b>ENVT4</b> . Clear spills immediately. <b>C&amp;H13</b> . Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. <b>PPE16</b> . Wear suitable coveralls to prevent exposure to the skin. <b>PPE27</b> .
CS67 Storage.	Ensure operation is undertaken outdoors. <b>E69</b> . Store substance within a closed system. <b>E84</b> . Avoid dip samples. <b>E42</b> .
<b>Section 2.2</b>	<b>Control of environmental exposure</b>
<b>Product characteristics</b>	Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].
<b>Amounts used</b>	
Fraction of EU tonnage used in region	0.1
Regional use tonnage (tonnes/year)	2.2E+7
Fraction of Regional tonnage used locally	1
Annual site tonnage (tonnes/year)	6.0e+5
Maximum daily site tonnage (kg/day)	2.0e+6
<b>Frequency and duration of use</b>	
Continuous release	
Emission days (days/year)	300
<b>Environmental factors not influenced by risk management</b>	
Local freshwater dilution factor	10
Local marine water dilution factor	100
<b>Other given operational conditions affecting environmental exposure</b>	
Release fraction to air from process (initial release prior to RMM)	0.05
Release fraction to wastewater from process (initial release prior to RMM)	0.003
Release fraction to soil from process (initial release prior to RMM)	0.0001
<b>Technical conditions and measures at process level (source) to prevent release</b>	
Common practices vary across sites thus conservative process release estimates used [TCS1].	
<b>Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil</b>	
Risk from environmental exposure is driven by Freshwater Sediment [TCR1b] Prevent discharge of undissolved substance to or recover from wastewater [TCR14]. Risk from Environmental exposure is driven by humans via indirect exposure (primarily inhalation) [TCR1k]. Onsite wastewater treatment required [TCR13].	
Treat air emission to provide a typical removal efficiency of (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency (%)	99.8
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%)	94.7
Organisation measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].	



<b>Conditions and measures related to municipal sewage treatment plant</b>	
Estimated substance removal from wastewater via domestic sewage treatment (%)	95.8
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	99.8
Maximum allowable site tonnage (M <sub>safe</sub> )	2.0e+6
Assumed domestic sewage treatment plant flow (m <sup>3</sup> /d)	10000
<b>Conditions and measures related to external treatment of waste for disposal</b>	
During manufacturing no waste of the substance is generated [ETW4].	
<b>Section 3</b>	<b>Exposure Estimation</b>
<b>3.1. Health</b>	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. G21.
<b>3.2. Environment</b>	
<b>Section 4</b>	<b>Guidance to check compliance with the Exposure Scenario</b>
<b>4.1. Health</b>	<p>Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. G22.</p> <p>Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23.</p> <p>Further information on the assumptions contained in this Exposure Scenario can be found at: G24.</p>
<b>4.2. Environment</b>	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].	
<b>Section 5</b>	<b>Additional good practice advice beyond the REACH Chemical Safety Assessment - (Section Optional)</b>
<b>Note: The measures reported in this section have not been taken into account in the exposure estimates related to the exposure scenario above. They are not subject to obligation laid down in Article 37 (4) of REACH.</b>	
<b>Control of Worker Exposure</b>	
<i>Selection of relevant Contributing Scenario phrases</i>	<i>Recommended good practice RMM (blue) phrases may be incorporated in this section, or consolidated into the main sections of the SDS, depending on the preference of the Registrant and functionality of the available e-SDS system.</i>
<b>Control of environmental exposure</b>	
<i>Selection of relevant RMM Core Phrases</i>	<i>Good practice RMM phrases may be incorporated in this section, within the ES Section 2 or consolidated into the main sections of the SDS, depending on the preference of the Registrant and functionality of the available e-SDS system.</i>

<b>Section 1</b>	<b>Exposure Scenario Title</b>
<b>Title</b>	<b>Distribution of substance</b>
<b>Use Descriptor</b>	Sector(s) of Use Process Categories: 1, 2, 3, 8a, 8b, 15
Environmental Release Categories	4, 5, 6a, 6b, 6c, 6d, 7
Specific Environmental Release Category	ESVOC SpERC 1.1b.v1

<b>Processes, tasks, activities covered</b>	Bulk loading (including marine vessel/barge, rail/road car and IBC loading) of substance within closed or contained systems, including incidental exposures during its sampling, storage, unloading, maintenance and associated laboratory activities.
<b>Section 2</b>	<b>Operational conditions and risk management measures</b>
<b>Section 2.1</b>	<b>Control of worker exposure</b>
<b>Product characteristics</b>	
Physical form of product	<i>Liquid, vapour pressure &gt; 10 kPa at STP</i> <b>OC5</b>
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) <b>G13</b>
<b>Amounts used</b>	<i>Not applicable</i>
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) <b>G2</b>
Human factors not influenced by risk management	<i>Not applicable</i>
Other Operational Conditions affecting exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently. <b>G15.</b> ; Assumes a good basic standard of occupational hygiene is implemented <b>G1</b>
<b>Contributing Scenarios</b>	<b>Risk Management Measures</b>
General Measures (skin irritants). <b>G19.</b>	Avoid all skin contact with product. Clean up contamination / spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. <b>E3.</b>
General Measures (carcinogens). <b>G18.</b>	Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general / local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean / flush equipment, where possible, prior to maintenance.  Where there is potential for exposure: Restrict access to authorised staff; provide specific activity training to operators to minimise exposures; wear suitable gloves (tested to EN374) and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely.  Regularly inspect, test and maintain all control measures.  Consider the need for risk based health surveillance. <b>G20.</b>
CS15 General exposures (closed systems). + CS56 With sample collection.	Handle substance within closed systems. <b>E47.</b> Sample via a closed loop or other system intended to avoid exposure. <b>E8.</b> Wear suitable gloves tested to EN374. <b>PPE15.</b>
CS15 General exposures (closed systems). OC9 Outdoor.	Handle substance within closed systems. <b>E47.</b>
CS2 Process sampling	Sample via a closed loop or other system intended to avoid exposure. <b>E8.</b>
CS36 Laboratory activities.	Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure. <b>E12.</b>
CS501 Bulk closed loading and unloading.	Ensure material transfers are under containment or extract ventilation. <b>E66.</b> Wear suitable gloves tested to EN374. <b>PPE15.</b> Avoid splashing. <b>C&amp;H15.</b> Clear transfer lines prior to de-coupling. <b>E39.</b>
CS39 Equipment cleaning and maintenance	Drain down and flush system prior to equipment break-in or maintenance. <b>E55.</b> Retain drain downs in sealed storage pending disposal or for subsequent recycle. <b>ENV4.</b> Clear spills immediately. <b>C&amp;H13.</b> Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. <b>PPE16.</b> Wear suitable coveralls to prevent exposure to the skin. <b>PPE27.</b>

CS67 Storage.	Ensure operation is undertaken outdoors. E69. Store substance within a closed system. E84.
<b>Section 2.2</b>	<b>Control of environmental exposure</b>
Product characteristics	Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].
Amounts used	
Fraction of EU tonnage used in region	0.1
Regional use tonnage (tonnes/year)	2.5E+7
Fraction of Regional tonnage used locally	1
Annual site tonnage (tonnes/year)	5.1E+4
Maximum daily site tonnage (kg/day)	1.7E+5
Frequency and duration of use	
Continuous release [FD2]	
Emission days (days/year)	300
<b>Environmental factors not influenced by risk management</b>	
Local freshwater dilution factor	10
Local marine dilution factor	100
<b>Other given operational conditions affecting environmental exposure</b>	
Release fraction to air from process (initial release prior to RMM)	1.0E-3
Release fraction to wastewater from process (initial release prior to RMM)	1.0E-5
Release fraction to soil from process (initial release prior to RMM)	0.00001
<b>Technical conditions and measures at process level (source) to prevent release</b>	
Common practices vary across sites thus conservative process release estimates used [TCS1].	
<b>Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil</b>	
Risk from environmental exposure is driven by Freshwater [TCR1a] If discharging to domestic sewage treatment plant, no onsite wastewater treatment required [TCR10].	
Treat air emission to provide a typical removal efficiency of (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%)	83.3
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%)	0.0
<b>Organization measures to prevent/limit release from site</b>	
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].	
<b>Conditions and measures related to municipal sewage treatment plant</b>	
Not applicable as there is no release to wastewater [STP1].	
Estimated substance removal from wastewater via domestic sewage treatment (%)	95.8
Total efficiency of removal from wastewater after onsite and offsite(domestic treatment plant)RMMs(%)	95.8
Maximum allowable site tonnage(Msafe) based on release following total wastewater treatment removal(kg/day)	6.7E+5
Assumed domestic sewage treatment plant flow(m <sup>3</sup> /day)	2000

<b>Conditions and measures related to external treatment of waste for disposal</b>	
External treatment and disposal of waste should comply with applicable local and/or national regulations. [ETW3]	
<b>Conditions and measures related to external recovery of waste</b>	
External recovery and recycling of waste should comply with applicable local and/or national regulations. [ERW1]	
Other environmental control measures additional to above	
<b>Section 3</b>	<b>Exposure Estimation</b>
<b>3.1. Health</b>	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. <b>G21.</b>
<b>3.2. Environment</b>	
<b>Section 4</b>	<b>Guidance to check compliance with the Exposure Scenario</b>
<b>4.1. Health</b>	<p>Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. G22.</p> <p>Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23.</p> <p>Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. G32. Available hazard data do not enable the derivation of a DNEL for carcinogenic effects. G33. Available hazard data do not support the need for a DNEL to be established for other health effects. G36. Risk Management Measures are based on qualitative risk characterization. G37.</p>
<b>4.2. Environment</b>	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].
<b>Section 5</b>	<b>Additional good practice advice beyond the REACH Chemical Safety Assessment - (Section Optional)</b>
<b>Note: The measures reported in this section have not been taken into account in the exposure estimates related to the exposure scenario above. They are not subject to obligation laid down in Article 37 (4) of REACH.</b>	
<b>Control of Worker Exposure</b>	
<i>Selection of relevant Contributing Scenario phrases</i>	<i>Recommended good practice RMM (blue) phrases may be incorporated in this section, or consolidated into the main sections of the SDS, depending on the preference of the Registrant and functionality of the available e-SDS system.</i>
<b>Control of environmental exposure</b>	
<i>Selection of relevant RMM Core Phrases</i>	<i>Good practice RMM phrases may be incorporated in this section, within the ES Section 2 or consolidated into the main sections of the SDS, depending on the preference of the Registrant and functionality of the available e-SDS system.</i>

<b>Section 1</b>	<b>Exposure Scenario Title</b>
<b>Title</b>	<b>Formulation &amp; (re) packing of substances and mixtures</b>
<b>Use Descriptor</b>	Sector(s) of Use: Industrial: SU3, SU10 Process Categories: 1, 2, 3, 8a, 8b, 15
<b>Processes, tasks, activities covered</b>	Formulation of the substance and its mixtures in batch or continuous operations within closed or contained systems, including incidental exposures during storage, materials transfers, mixing, maintenance, sampling and associated laboratory activities.
<b>Environmental Release Categories</b>	2

Specific Environmental Release Category	ESVOC SpERC 2.2.v1
<b>Section 2</b>	<b>Operational conditions and risk management measures</b>
<b>Section 2.1</b>	<b>Control of worker exposure</b>
<b>Product characteristics</b>	
Physical form of product	<i>Liquid, vapour pressure &gt; 10 kPa at STP</i> <b>OC5</b>
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) <b>G13</b>
<b>Amounts used</b>	<i>Not applicable</i>
Amounts used	<i>Not applicable</i>
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) <b>G2</b>
Human factors not influenced by risk management	<i>Not applicable</i>
Other Operational Conditions affecting exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently. <b>G15.</b> ; Assumes a good basic standard of occupational hygiene is implemented <b>G1</b>
<b>Contributing Scenarios</b>	<b>Risk Management Measures</b>
General Measures (skin irritants). <b>G19.</b>	Avoid all skin contact with product. Clean up contamination / spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. <b>E3.</b>
General Measures (carcinogens). <b>G18.</b>	Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general / local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean / flush equipment, where possible, prior to maintenance.  Where there is potential for exposure: Restrict access to authorised staff; provide specific activity training to operators to minimise exposures; wear suitable gloves (tested to EN374) and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely.  Regularly inspect, test and maintain all control measures.  Consider the need for risk based health surveillance. <b>G20.</b>
CS15 General exposures (closed systems). + CS56 With sample collection.	Handle substance within closed systems. <b>E47.</b> Sample via a closed loop or other system intended to avoid exposure. <b>E8.</b> Wear suitable gloves tested to EN374. <b>PPE15.</b>
CS15 General exposures (closed systems). OC9 Outdoor.	Handle substance within closed systems. <b>E47.</b> Wear suitable gloves tested to EN374. <b>PPE15.</b>
CS2 Process sampling	Sample via a closed loop or other system intended to avoid exposure. <b>E8.</b> Wear suitable gloves tested to EN374. <b>PPE15.</b>
CS36 Laboratory activities	Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure. <b>E12.</b> Wear suitable gloves tested to EN374. <b>PPE15.</b> Wear suitable coveralls to prevent exposure to the skin. <b>PPE27.</b>
CS14 Bulk transfers	Ensure material transfers are under containment or extract ventilation. <b>E66.</b> Wear suitable gloves tested to EN374. <b>PPE15.</b> Avoid splashing. <b>C&amp;H15.</b> Clear transfer lines prior to de-coupling. <b>E39.</b>

CS8 Drum/batch transfers	Ensure material transfers are under containment or extract ventilation. <b>E66.</b> Wear suitable gloves tested to EN374. <b>PPE15.</b> Avoid splashing. <b>C&amp;H15.</b> Clear transfer lines prior to de-coupling. <b>E39.</b>
CS39 Equipment cleaning and maintenance	Drain down and flush system prior to equipment break-in or maintenance. <b>E55.</b> Retain drain downs in sealed storage pending disposal or for subsequent recycle. <b>ENVT4.</b> Clear spills immediately. <b>C&amp;H13.</b> Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. <b>PPE16.</b> Wear suitable coveralls to prevent exposure to the skin. <b>PPE27.</b>
CS67 Storage.	Store substance within a closed system. <b>E84.</b> Wear suitable gloves tested to EN374. <b>PPE15.</b> Avoid dip samples. <b>E42.</b>
<b>Section 2.2</b>	<b>Control of environmental exposure</b>
Product characteristics	Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].
<b>Amounts used</b>	
Fraction of EU tonnage used in region	0.1
Regional use tonnage (tonnes/year)	1.4E+7
Fraction of Regional tonnage used locally	1
Annual site tonnage (tonnes/year)	3.0E+4
Maximum daily site tonnage (kg/day)	1.0E+5
<b>Frequency and duration of use</b>	
Continuous release [FD2].	
Emission days (days/year)	300
<b>Environmental factors not influenced by risk management</b>	
Local freshwater dilution factor	10
Local marine water dilution factor	100
<b>Other Operational Conditions of use affecting environmental exposure</b>	
Release fraction to air from process (after typical onsite RMMs, consistent with EU Solvent Emissions Directive requirements)	2.5E-2
Release fraction to wastewater from process (initial release prior to RMM)	2.0E-3
Release fraction to soil from process (initial release prior to RMM)	0.0001
<b>Technical conditions and measures at process level(source) to prevent release</b>	
Common practices vary across sites thus conservative process release estimates used [TCS1].	
<b>Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil</b>	
Risk from environmental exposure is driven by Freshwater Sediment [TCR1b]	
Prevent discharge of undissolved substance to or recover from onsite wastewater [TCR14].	
If discharging to domestic sewage treatment plant, additional onsite wastewater treatment required [TCR14].	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%)	98.7
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%)	68.0

<b>Organisation measures to prevent/limit release from site</b>	
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].	
Conditions and measures related to municipal sewage treatment plant	
Not applicable as there is no release to wastewater [STP1].	
Estimated substance removal from wastewater via domestic sewage treatment (%)	95.8
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	98.7
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1.0E+5
Assumed domestic sewage treatment plant flow (m <sup>3</sup> /d)	2000
<b>Conditions and measures related to external treatment of waste for disposal</b>	External treatment and disposal of waste should comply with applicable local and/or national regulations.[ETW3]
<b>Conditions and measures related to external recovery of waste</b>	External recovery and recycling of waste should comply with applicable local and/or national regulations. [ERW1}
Other environmental control measures additional to above	NA
<b>Section 3</b>	<b>Exposure Estimation</b>
<b>3.1. Health</b>	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. G21.
<b>3.2. Environment</b>	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].
<b>Section 4</b>	<b>Guidance to check compliance with the Exposure Scenario</b>
<b>4.1. Health</b>	<p>Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. G22.</p> <p>Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23.</p> <p>Further information on the assumptions contained in this Exposure Scenario can be found at: G24.</p>
<b>4.2. Environment</b>	<p>Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<a href="http://cefic.org/en/reach-for-industries-libraries.html">http://cefic.org/en/reach-for-industries-libraries.html</a>) [DSU4].</p>
<b>Section 5</b>	<b>Additional good practice advice beyond the REACH Chemical Safety Assessment - (Section Optional)</b>
<b>Note: The measures reported in this section have not been taken into account in the exposure estimates related to the exposure scenario above. They are not subject to obligation laid down in Article 37 (4) of REACH.</b>	
<b>Control of Worker Exposure</b>	

<i>Selection of relevant Contributing Scenario phrases</i>	<i>Recommended good practice RMM (blue) phrases may be incorporated in this section, or consolidated into the main sections of the SDS, depending on the preference of the Registrant and functionality of the available e-SDS system.</i>
<b>Control of environmental exposure</b>	
<i>Selection of relevant RMM Core Phrases</i>	<i>Good practice RMM phrases may be incorporated in this section, within the ES Section 2 or consolidated into the main sections of the SDS, depending on the preference of the Registrant and functionality of the available e-SDS system.</i>

<b>Section 1</b>	<b>Exposure Scenario Title</b>
<b>Title</b>	<b>Use as a Fuel -Industrial</b>
<b>Use Descriptor</b>	Sector(s) of use: Industrial: SU3 Process Categories: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16
Environmental Release Categories	7
Specific Environmental Release Category	ESVOC SpERC 7.12a.v1
<b>Processes, tasks, activities covered</b>	Covers the use as a fuel (or fuel additives and additive components) within closed or contained systems, including incidental exposures during activities associated with its transfer, use, equipment maintenance and handling of waste.
<b>Section 2</b>	<b>Operational conditions and risk management measures</b>
<i>Field for additional statements to explain scenario if required.</i>	-
<b>Section 2.1</b>	<b>Control of worker exposure</b>
<b>Product characteristics</b>	
Physical form of product	<i>Liquid, vapour pressure &gt; 10 kPa at STP</i> <b>OC5</b>
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) <b>G13</b>
<b>Amounts used</b>	<i>Not applicable</i>
Amounts used	<i>Not applicable</i>
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) <b>G2</b>
Human factors not influenced by risk management	<i>Not applicable</i>
Other Operational Conditions affecting exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently. <b>G15.</b> ; Assumes a good basic standard of occupational hygiene is implemented <b>G1</b>
<b>Contributing Scenarios</b>	<b>Risk Management Measures</b>
General Measures (skin irritants). <b>G19.</b>	Avoid all skin contact with product. Clean up contamination / spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. <b>E3.</b>



General Measures (carcinogens). <b>G18.</b>	<p>Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general / local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean / flush equipment, where possible, prior to maintenance.</p> <p>Where there is potential for exposure: Restrict access to authorised staff; provide specific activity training to operators to minimise exposures; wear suitable gloves (tested to EN374) and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely.</p> <p>Regularly inspect, test and maintain all control measures.</p> <p>Consider the need for risk based health surveillance. <b>G20.</b></p>
CS502 Bulk closed unloading	<p>Ensure material transfers are under containment or extract ventilation. <b>E66.</b> Wear suitable gloves tested to EN374. <b>PPE15.</b> Avoid splashing. <b>C&amp;H15.</b> Clear transfer lines prior to de-coupling. <b>E39.</b></p>
CS8 Drum/batch transfers	<p>Ensure material transfers are under containment or extract ventilation. <b>E66.</b> Wear suitable gloves tested to EN374. <b>PPE15.</b> Avoid splashing. <b>C&amp;H15.</b> Clear transfer lines prior to de-coupling. <b>E39.</b></p>
CS507 Refuelling	<p>Ensure material transfers are under containment or extract ventilation. <b>E66.</b> Wear suitable gloves tested to EN374. <b>PPE15.</b> Avoid splashing. <b>C&amp;H15.</b> Clear transfer lines prior to de-coupling. <b>E39.</b></p>
CS508 Refuelling aircraft	<p>Ensure material transfers are under containment or extract ventilation. <b>E66.</b> Wear suitable gloves tested to EN374. <b>PPE15.</b> Avoid splashing. <b>C&amp;H15.</b> Clear transfer lines prior to de-coupling. <b>E39.</b></p>
CS15 General exposures (closed systems). OC9 Outdoor.	<p>Handle substance within a closed system. <b>E47.</b> Wear suitable gloves tested to EN374. <b>PPE15.</b></p>
GES16 Use as a fuel, CS107 (closed systems)	<p>Handle substance within closed systems. <b>E47.</b></p>
CS39 Equipment cleaning and maintenance.	<p>Drain down and flush system prior to equipment break-in or maintenance. <b>E55.</b> Retain drain downs in sealed storage pending disposal or for subsequent recycle. <b>ENVT4.</b> Clear spills immediately. <b>C&amp;H13.</b> Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. <b>PPE16.</b> Wear suitable coveralls to prevent exposure to the skin. <b>PPE27.</b></p>
CS67 Storage	<p>Store substance within a closed system. <b>E84.</b> Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. <b>E1.</b></p>
<b>Section 2.2</b>	<b>Control of environmental exposure</b>
Product characteristics	Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].
<b>Amounts used</b>	
Fraction of EU tonnage used in region	<i>0.1</i>
Regional use tonnage	1.7E+6

(tonnes/year)									
Fraction of Regional tonnage used locally	1								
Annual site tonnage (tonnes/year)	1.5E+6								
Maximum daily site tonnage (kg/day)	5.0E+6								
<b>Frequency and duration of use</b>	Continuous release [FD2]. Emission days (days/year) :300								
<b>Environmental factors not influenced by risk management</b>	Local freshwater dilution factor :10 Local marine water dilution factor :100								
<b>Other given Operational Conditions of use affecting environmental exposure</b>	<table border="0"> <tr> <td>Release fraction to air from process (initial release prior to RMM)</td> <td>5.0E-2</td> </tr> <tr> <td>Release fraction to wastewater from process (initial release prior to RMM)</td> <td>0.0000</td> </tr> <tr> <td>Release fraction to soil from process (initial release prior to RMM)</td> <td>0</td> </tr> </table>	Release fraction to air from process (initial release prior to RMM)	5.0E-2	Release fraction to wastewater from process (initial release prior to RMM)	0.0000	Release fraction to soil from process (initial release prior to RMM)	0		
Release fraction to air from process (initial release prior to RMM)	5.0E-2								
Release fraction to wastewater from process (initial release prior to RMM)	0.0000								
Release fraction to soil from process (initial release prior to RMM)	0								
<b>Technical conditions and measures at process level (source) to prevent release</b>	Common practices vary across sites thus conservative process release estimates used [TCS1].								
<b>Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil</b>	<p>Risk from environmental exposure is driven by Humans via Indirect Exposure (Primarily Inhalation) [TCR1k] If discharging to domestic sewage treatment plant, no onsite wastewater treatment required [TCR10].</p> <table border="0"> <tr> <td>Treat air emission to provide a typical removal efficiency of (%)</td> <td>95</td> </tr> <tr> <td>Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency &gt;= (%)</td> <td>94.6</td> </tr> <tr> <td>If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of &gt;= (%)</td> <td>0.0</td> </tr> </table>	Treat air emission to provide a typical removal efficiency of (%)	95	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%)	94.6	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%)	0.0		
Treat air emission to provide a typical removal efficiency of (%)	95								
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%)	94.6								
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%)	0.0								
<b>Organisation measures to prevent/limit release from site</b>	Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].								
Conditions and measures related to municipal sewage treatment plant	<p>Not applicable as there is no release to wastewater [STP1].</p> <table border="0"> <tr> <td>Estimated substance removal from wastewater via domestic sewage treatment (%)</td> <td>95.8</td> </tr> <tr> <td>Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)</td> <td>95.8</td> </tr> <tr> <td>Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)</td> <td>5.0E+6</td> </tr> <tr> <td>Assumed domestic sewage treatment plant flow (m3/d)</td> <td>2000</td> </tr> </table>	Estimated substance removal from wastewater via domestic sewage treatment (%)	95.8	Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	95.8	Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	5.0E+6	Assumed domestic sewage treatment plant flow (m3/d)	2000
Estimated substance removal from wastewater via domestic sewage treatment (%)	95.8								
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	95.8								
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	5.0E+6								
Assumed domestic sewage treatment plant flow (m3/d)	2000								
<b>Conditions and measures related to external treatment of waste for disposal</b>	<p>Combustion emissions limited by required exhaust emission controls [ETW1]. Combustion emissions considered in regional exposure assessment [ETW2]. External treatment and disposal of waste should comply with applicable local and/or national regulations.[ETW3]</p>								
<b>Conditions and measures related to external recovery of waste</b>	This substance is consumed during use and no waste of the substance is generated. [ERW3]								
Other environmental control measures additional to above	-								
<b>Section 3</b>	<b>Exposure Estimation</b>								
<b>3.1. Health</b>	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. G21.								
<b>3.2. Environment</b>	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].								
<b>Section 4</b>	<b>Guidance to check compliance with the Exposure Scenario</b>								

<b>4.1. Health</b>	<p>Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. G22.</p> <p>Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23.</p> <p>Further information on the assumptions contained in this Exposure Scenario can be found at: G24.</p>
<b>4.2. Environment</b>	<p>Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<a href="http://cefic.org/en/reach-for-industries-libraries.html">http://cefic.org/en/reach-for-industries-libraries.html</a>) [DSU4].</p>
<b>Section 5</b>	<b>Additional good practice advice beyond the REACH Chemical Safety Assessment - (Section Optional)</b>
<p><b>Note: The measures reported in this section have not been taken into account in the exposure estimates related to the exposure scenario above. They are not subject to obligation laid down in Article 37 (4) of REACH.</b></p>	
<b>Control of Worker Exposure</b>	
<i>Selection of relevant Contributing Scenario phrases</i>	<i>Recommended good practice RMM (blue) phrases may be incorporated in this section, or consolidated into the main sections of the SDS, depending on the preference of the Registrant and functionality of the available e-SDS system.</i>
<b>Control of environmental exposure</b>	
<i>Selection of relevant RMM Core Phrases</i>	<i>Good practice RMM phrases may be incorporated in this section, within the ES Section 2 or consolidated into the main sections of the SDS, depending on the preference of the Registrant and functionality of the available e-SDS system.</i>

<b>Section 1</b>	<b>Exposure Scenario Title</b>
<b>Title</b>	<b>Use as a Fuel</b>
<b>Use Descriptor</b>	Sector(s) of use: Professional: SU22 Process Categories: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16
<b>Processes, tasks, activities covered</b>	Covers the use as a fuel (or fuel additives and additive components) within closed or contained systems, including incidental exposures during activities associated with its transfer, use, equipment maintenance and handling of waste.
<b>Section 2</b>	<b>Operational conditions and risk management measures</b>
<i>Field for additional statements to explain scenario if required.</i>	
<b>Section 2.1</b>	<b>Control of worker exposure</b>
<b>Product characteristics</b>	
Physical form of product	<i>Liquid, vapour pressure &gt; 10 kPa at STP OC5</i>
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) <b>G13</b>
<b>Amounts used</b>	<i>Not applicable</i>
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) <b>G2</b>
Human factors not influenced by risk management	<i>Not applicable</i>
Other Operational Conditions affecting exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently. <b>G15.;</b> Assumes a good basic standard of occupational hygiene is implemented <b>G1</b>
<b>Contributing Scenarios</b>	<b>Risk Management Measures</b>
General Measures (skin irritants). <b>G19.</b>	Avoid all skin contact with product. Clean up contamination / spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise

	exposures and to report any skin problems that may develop. <b>E3.</b>										
General Measures (carcinogens). <b>G18.</b>	<p>Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general / local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean / flush equipment, where possible, prior to maintenance.</p> <p>Where there is potential for exposure: Restrict access to authorised staff; provide specific activity training to operators to minimise exposures; wear suitable gloves (tested to EN374) and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely.</p> <p>Regularly inspect, test and maintain all control measures.</p> <p>Consider the need for risk based health surveillance. <b>G20.</b></p>										
CS15 General exposures (closed systems). OC9 Outdoor.	<p>Handle substance within a closed system. <b>E47.</b></p> <p>Wear suitable gloves tested to EN374. <b>PPE15.</b></p>										
CS502 Bulk closed unloading	<p>Ensure material transfers are under containment or extract ventilation. <b>E66.</b></p> <p>Wear suitable gloves tested to EN374. <b>PPE15.</b></p> <p>Avoid splashing. <b>C&amp;H15.</b></p> <p>Clear transfer lines prior to de-coupling. <b>E39.</b></p>										
CS8 Drum/batch transfers	<p>Ensure material transfers are under containment or extract ventilation. <b>E66.</b></p> <p>Wear suitable gloves tested to EN374. <b>PPE15.</b></p> <p>Avoid splashing. <b>C&amp;H15.</b></p>										
CS507 Refueling	<p>Ensure material transfers are under containment or extract ventilation. <b>E66.</b></p> <p>Wear suitable gloves tested to EN374. <b>PPE15.</b></p> <p>Avoid splashing. <b>C&amp;H15.</b></p>										
GES16 Use as a fuel, CS107 (closed systems)	<p>Handle substance within closed systems. <b>E47.</b></p>										
CS5 Equipment maintenance	<p>Drain down system prior to equipment break-in or maintenance. <b>E65.</b></p> <p>Retain drain downs in sealed storage pending disposal or for subsequent recycle. <b>ENVT4.</b></p> <p>Clear spills immediately. <b>C&amp;H13.</b></p> <p>Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. <b>E1.</b></p> <p>Ensure operatives are trained to minimise exposures. <b>EI19.</b></p> <p>Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls. <b>PPE18.</b></p> <p>Wear suitable coveralls to prevent exposure to the skin. <b>PPE27.</b></p>										
CS67 Storage.	<p>Store substance within a closed system. <b>E84.</b></p> <p>Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. <b>E1.</b></p>										
<b>Section 2.2</b>	<b>Control of environmental exposure</b>										
Product characteristics	Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].										
<b>Amounts used</b>	<table> <tr> <td>Fraction of EU tonnage used in region</td> <td>0.1</td> </tr> <tr> <td>Regional use tonnage (tonnes/year)</td> <td>1.2E+6</td> </tr> <tr> <td>Fraction of Regional tonnage used locally</td> <td>1</td> </tr> <tr> <td>Annual site tonnage (tonnes/year)</td> <td>5.9E+2</td> </tr> <tr> <td>Maximum daily site tonnage (kg/day)</td> <td>1.6E+3</td> </tr> </table>	Fraction of EU tonnage used in region	0.1	Regional use tonnage (tonnes/year)	1.2E+6	Fraction of Regional tonnage used locally	1	Annual site tonnage (tonnes/year)	5.9E+2	Maximum daily site tonnage (kg/day)	1.6E+3
Fraction of EU tonnage used in region	0.1										
Regional use tonnage (tonnes/year)	1.2E+6										
Fraction of Regional tonnage used locally	1										
Annual site tonnage (tonnes/year)	5.9E+2										
Maximum daily site tonnage (kg/day)	1.6E+3										
<b>Frequency and duration of use</b>	<p>Continuous release [FD2].</p> <p>Emission days (days/year) 365</p>										
<b>Environmental factors not influenced by risk management</b>	<p>Local freshwater dilution factor 10</p> <p>Local marine water dilution factor 100</p>										
<b>Other given Operational Conditions of use affecting environmental exposure</b>	<table> <tr> <td>Release fraction to air from wide dispersive use (regional use only) [OOC7]</td> <td>1.0E-2</td> </tr> <tr> <td>Release fraction to wastewater wide dispersive use [OOC8]</td> <td>0.00001</td> </tr> <tr> <td>Release fraction to soil from wide dispersive use (regional use only) [OOC9]</td> <td>0.00001</td> </tr> </table>	Release fraction to air from wide dispersive use (regional use only) [OOC7]	1.0E-2	Release fraction to wastewater wide dispersive use [OOC8]	0.00001	Release fraction to soil from wide dispersive use (regional use only) [OOC9]	0.00001				
Release fraction to air from wide dispersive use (regional use only) [OOC7]	1.0E-2										
Release fraction to wastewater wide dispersive use [OOC8]	0.00001										
Release fraction to soil from wide dispersive use (regional use only) [OOC9]	0.00001										

<b>Technical conditions and measures at process(level source)to prevent release</b>	Common practices vary across sites thus conservative process release estimates used [TCS1].
<b>Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil</b>	<p>Risk from environmental exposure is driven by Freshwater [TCR1a]</p> <p>If discharging to domestic sewage treatment plant, no onsite wastewater treatment required [TCR10].</p> <p>Treat air emission to provide a typical removal efficiency of (%) N/A</p> <p>Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency &gt;= (%) 81.8</p> <p>If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of &gt;= (%) 0.0</p>
<b>Organization measures to prevent/limit release from site</b>	Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].
<b>Conditions and measures related to municipal sewage treatment plant</b>	<p>Not applicable as there is no release to wastewater [STP1].</p> <p>Estimated substance removal from wastewater via domestic sewage treatment (%) 95.8</p> <p>Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) 95.8</p> <p>Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) 7.0E+3</p> <p>Assumed domestic sewage treatment plant flow (m3/d) 2000</p>
<b>Conditions and measures related to external treatment of waste for disposal</b>	Combustion emissions limited by required exhaust emission controls [ETW1]. Combustion emissions considered in regional exposure assessment [ETW2]. External treatment and disposal of waste should comply with applicable local and/or national regulations.[ETW3]
<b>Conditions and measures related to external recovery of waste</b>	This substance is consumed during use and no waste of the substance is generated. [ERW3]
Other environmental control measures additional to above	-
<b>Section 3</b>	<b>Exposure Estimation</b>
<b>3.1. Health</b>	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. G21.
<b>3.2. Environment</b>	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].
<b>Section 4</b>	<b>Guidance to check compliance with the Exposure Scenario</b>
<b>4.1. Health</b>	<p>Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. G22.</p> <p>Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23.</p> <p>Further information on the assumptions contained in this Exposure Scenario can be found at: G24.</p>
<b>4.2. Environment</b>	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet ( <a href="http://cefic.org/en/reach-for-industries-libraries.html">http://cefic.org/en/reach-for-industries-libraries.html</a> ) [DSU4].
<b>Section 5</b>	<b>Additional good practice advice beyond the REACH Chemical Safety Assessment - (Section Optional)</b>
<b>Note: The measures reported in this section have not been taken into account in the exposure estimates related to the exposure scenario above. They are not subject to obligation laid down in Article 37 (4) of REACH.</b>	
<b>Control of Worker Exposure</b>	

<i>Selection of relevant Contributing Scenario phrases</i>	<i>Recommended good practice RMM (blue) phrases may be incorporated in this section, or consolidated into the main sections of the SDS, depending on the preference of the Registrant and functionality of the available e-SDS system.</i>
<b>Control of environmental exposure</b>	
<i>Selection of relevant RMM Core Phrases</i>	<i>Good practice RMM phrases may be incorporated in this section, within the ES Section 2 or consolidated into the main sections of the SDS, depending on the preference of the Registrant and functionality of the available e-SDS system.</i>

<b>Section 1</b>	<b>Exposure Scenario Title</b>
<b>Title</b>	<b>Use as a Fuel</b>
<b>Use Descriptor</b>	Sector(s) of use: Consumer Process Categories: 13
<b>Environmental release Category</b>	9a ,9b
<b>Specific Environmental release Category</b>	ESVOC SpERC 12c.v1
<b>Processes, tasks, activities covered</b>	Covers the consumer use of substance in liquid fuels
<b>Section 2</b>	<b>Operational conditions and risk management measures</b>
<i>Field for additional statements to explain scenario if required.</i>	-
<b>Section 2.1</b>	<b>Control of consumer exposure</b>
<b>Product characteristics</b>	
Physical form of product	<i>Liquid, vapour pressure &gt; 10 kPa at STP</i> <b>OC5</b>
Concentration of substance in product	Unless otherwise stated, cover concentrations up to 100% [ConsOC1]
Amounts used	Unless otherwise stated, covers use amounts up to 37500g [ConsOC2]; covers skin contact area up to 420cm <sup>2</sup> [ConsOC5]
Frequency and duration of use/exposure	Unless otherwise stated, covers use frequency up to 0.143 times per day [ConsOC4]; covers exposure up to 2 hours per event [ConsOC14]
Other Operational Conditions affecting exposure	Unless otherwise stated assumes use at ambient temperatures [ConsOC15]; assumes use in a 20 m <sup>3</sup> room [ConsOC11]; assumes use with typical ventilation [ConsOC8].
<b>Product Category</b>	<b>Specific Risk Management Measures and Operating Conditions</b>
PC13 Fuels--Liquid - subcategories added: Automotive Refuelling	OC Unless otherwise stated, covers concentrations up to 1% [ConsOC1]; covers use up to 52 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 210.00 cm <sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 37500g [ConsOC2]; covers outdoor use [ConsOC12]; covers use in room size of 100m <sup>3</sup> [ConsOC11]; for each use event, covers exposure up to 0.05hr/event[ConsOC14]; RMM No specific RMMs developed beyond those OCs stated
PC13: Fuels--Liquid - subcategories added: Scooter Refuelling	OC Unless otherwise stated, covers concentrations up to 1% [ConsOC1]; covers use up to 52 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 210.00 cm <sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 3750g [ConsOC2]; covers outdoor use [ConsOC12]; covers use in room size of 100m <sup>3</sup> [ConsOC11]; for each use event, covers exposure up to 0.03hr/event[ConsOC14]; RMM No specific RMMs developed beyond those OCs stated
PC13 Fuels--Liquid - subcategories added: Garden Equipment - Use	OC Unless otherwise stated, covers concentrations up to 1% [ConsOC1]; covers use up to 26 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; for each use event, covers use amounts up to 750g [ConsOC2]; covers outdoor use [ConsOC12]; covers use in room size of 100m <sup>3</sup> [ConsOC11]; for each use event, covers exposure up to 2.00hr/event[ConsOC14];

	RMM	No specific RMMs developed beyond those OCs stated
PC13 Fuels--Liquid (subcategories added): Garden Equipment - Refuelling	OC	Unless otherwise stated, covers concentrations up to 1% [ConsOC1]; covers use up to 26 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 420.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 750g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 0.03hr/event[ConsOC14];
	RMM	No specific RMMs developed beyond those OCs stated
<b>Section 2.2</b>		
<b>Control of environmental exposure</b>		
Product characteristics	Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].	
Amounts used	Fraction of EU tonnage used in region	0.1
	Regional use tonnage (tonnes/year)	9.1E+6
	Fraction of Regional tonnage used locally	0.0005
	Annual site tonnage (tonnes/year)	4.6E+3
	Maximum daily site tonnage (kg/day)	1.2E+4
Frequency and duration of use	Continuous release [FD2]. Emission days (days/year)	365
Environmental factors not influenced by risk management	Local freshwater dilution factor	10
	Local marine water dilution factor	100
Other given Operational Conditions of use affecting environmental exposure	Release fraction to air from wide dispersive use (regional use only) [OOC7]	1.0E-2
	Release fraction to wastewater wide dispersive use [OOC8]	0.00001
	Release fraction to soil from wide dispersive use (regional use only) [OOC9]	0.00001
Conditions and measures related to municipal sewage treatment plant	Not applicable as there is no release to wastewater [STP1]. Estimated substance removal from wastewater via domestic sewage treatment (%)	95.8
	Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	5.4E+4
	Assumed domestic sewage treatment plant flow (m3/d)	2000
Conditions and measures related to external treatment of waste for disposal	Combustion emissions limited by required exhaust emission controls [ETW1]. Combustion emissions considered in regional exposure assessment [ETW2]. External treatment and disposal of waste should comply with applicable local and/or national regulations.[ETW3]	
Conditions and measures related to external recovery of waste	This substance is consumed during use and no waste of the substance is generated. [ERW3]	
Other environmental control measures additional to above	-	
<b>Section 3</b>		
<b>Exposure Estimation</b>		
3.1. Health	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. G21.	
3.2. Environment	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].	
<b>Section 4</b>		
<b>Guidance to check compliance with the Exposure Scenario</b>		
4.1. Health	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. G22. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23. Further information on the assumptions contained in this Exposure Scenario can be found at: G24.	
4.2. Environment	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet ( <a href="http://cefic.org/en/reach-for-industries-libraries.html">http://cefic.org/en/reach-for-industries-libraries.html</a> ) [DSU4].	
Section 5	<b>Additional good practice advice beyond the REACH Chemical Safety Assessment - (Section Optional)</b>	

**Note: The measures reported in this section have not been taken into account in the exposure estimates related to the exposure scenario above. They are not subject to obligation laid down in Article 37 (4) of REACH.**

**Control of Worker Exposure**

<i>Selection of relevant Contributing Scenario phrases</i>	<i>Recommended good practice RMM (blue) phrases may be incorporated in this section, or consolidated into the main sections of the SDS, depending on the preference of the Registrant and functionality of the available e-SDS system.</i>
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**Control of environmental exposure**

<i>Selection of relevant RMM Core Phrases</i>	<i>Good practice RMM phrases may be incorporated in this section, within the ES Section 2 or consolidated into the main sections of the SDS, depending on the preference of the Registrant and functionality of the available e-SDS system.</i>
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